APPRAISAL OF TREE PLANTING PROGRAMMES IN MAIHA LOCAL GOVERNMENT AREA OF ADAMAWA STATE, NIGERIA

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Abstract
Deforestation, soil degradation and other forms of environmental degradation that could lead to desert encroachment have become a major concern in the world more especially in the sub Saharan Africa. Consequently, environmentalist and agriculturalists have led a campaign on afforestation and agroforestry to control this problem. This paper appraises tree planting and tree planting programs in the study area. Primary and secondary data sets ware collected on the socio economic activities of people as well as their perception on tree planting. The data was analyzed using descriptive statistics. Results show that there is a high level of awareness (86.7 %) on the importance of tree planting in the study area. Government's effort has been in the area of tree planting campaign and seedlings supply. However, farmers lack modern sivicultural skills and do not have enough seedlings coupled with improper timing of planting. Finally, the paper recommends the use fruit and leguminous trees since it gives immediate benefit to the farmers and as well conserve the environment.

Introduction

Man is endangering the earth ecosystem through the extension of agricultural land areas necessitated by ever growing world population. Others are deforestation and pastoralism, which have resulted in watershed degradation, landslides, large scale erosion, local and regional climate change with the attendant consequences of desertification. According to Mohammad *et al.* (2005) wide spread deforestation of tropical forest is creating enormous challenges in developing countries. Tade and Ademola (1992) reported that desertification occurs in Nigeria in areas north of latitude 12^{o}N in the Sudan Sahelian zone of the country; Sokoto, Kebbi, Zamfara, Katsina, Kano Jigawa Kaduna, Borno, and Yobe States. Mamman (2000) are of the view that, given the southward extension of desertification process in Nigeria areas as far as latitude 90^{o}N are most likely to experience desert encroachment; in another words northern parts of Taraba, Adamawa, Plateau, Nassarawa states may likely be affected.

The implication of this environmental degradation on the Nigerian environment and people have grown into such proportion that Local, State and Federal governments are continuously searching for amelioration and preventive options (Mohammad *et at*., 2005). One of these ameliorative strategies is through the introduction of public awareness in form of tree planting programme. Tree planting is promoted annually, through sponsorship by the Nigerian government, international agencies and non- governmental organizations. It yields economic, social, and environmental benefits (Evans, 1992); that could meet many essential village needs such as fuel wood, building materials, fodder and shelter (Evans, 1992). In addition tree planting performs a number of functions in rural development; increases income, job opportunities, food, raw materials and are used at home or farm. According to Brills (1994), the practice has been increasing in recent years due

to rising concern about deforestation, environmental degradation as well as the need to meet many basic needs.

In Nigeria, tree planting campaigns are launched yearly, at the national, state, and local government levels. Launching the program at the local government level promotes awareness at the villages on the importance attached to planting of trees by the rural communities. This paper therefore, aimed at appraising previous campaigns in Maiha local government area to determine the perception of rural populace towards tree planting and suggest afforestation strategies that may be compatible with the poor resource farmers for sustainable environment and income.

Materials and Method

Study area

Maiha local government (fig. 1) is located in the northern guinea savanna zone of Nigeria. It lies between latitude 9^{0} 30'-10^{0} 15' N and longitude 13^{0} 00'- 13^{0} 20' E; covering a land mass area of 1442.5 km^{2}. The area is characterized by a rugged terrain with hills and mountains (raising 1200 – 1500 m) in the east running north to south and high lands (rising 400- 800) constituting most part of the land mass (Adebayo and Dayya, 2004). The mountains and highland are intersected by streams and river valleys of the Kilange and Tsikari rivers in the north and south respectively (both are tributaries of river Benue). The area has two distinctive seasons; wet and dry season which is peculiar to the tropical continental climate. The dry season spans from, November to March, while the wet season covers April to October (Adebayo, 1999 and 2004). Annual rain fall ranges from 1000 mm – 1050 mm, while mean monthly temperature is 27.8 ^{0}C (Adebayo, 1999). Temperature and climate is influenced by altitude in the area. The vegetation has been considerably altered in some areas by many years of human activities such as farms, settlement expansion and collection of fuel wood. The Local Government Area consists of five districts. Agriculture is the main occupation of the people in all entire districts.

Sampling procedure and data collection

The cluster sampling technique was used to administer 240 questionnaires; representing 0.2 % of the projected population. 48 questionnaires were administered in each of the five districts of the local government. The questionnaires were designed to obtain information on people's assessment of previous tree planting programs, perception about tree planting, level of participation and problems they encountered with tree planting and management. Local forestry workers were also interviewed. Secondary data was also obtained from the Natural Resources Department of Maiha Local Government. The data collected was analyzed using descriptive statistics in terms of mean and percentage.

Results and Discussion

Ten years of tree planting Campaign in Maiha local Government

Over the ten years tree planting campaign was held six times in the five districts. The program was not launched in 1997, 1998, 2002, and 2003, but seedlings were raised and distributed/sold to the communities (Table 1)

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Table 1: Ten years tree planting campaign in Maiha local Government Area.

Year	District (Location of campaign)	Number of seedling distributed / sold
1993	Jalingo Maiha	1600
1994	Jalingo Maiha	1000
1995	Mbilla	6000
1996	Belel	10, 000
1997	NC	3000
1998	NC	-
1999	Pakka	1300
2000	NC	3000
2001	Mbilla	2500
2002	NC	-
2003	NC	1000

NC = No campaign
Source: Department of Forestry and Natural Resources, Maiha Local Government

Sampling Composition

A total of 163 males and 77 females were interviewed, constituting 67.9% and 32.1% of the sample respectively. More than half of the samples 52.1% were farmers while 31.7% were civil servants, 6.7% were traders and 9.5% students. Only 7.5% of the sample have no formal education, 25.8% are primary school leavers, 51.7% have post primary education, while 7.1% were NCE/ ND holders and 7.9% were HND / 1st Degree holders.

Public Awareness of tree planting campaigns

Respondents were asked about their awareness of tree planting campaigns and if it has ever taken place in their area. Majority of the respondent (86.7 %) confirmed that the program has taken place in their area in the last few years as while 13.3 % said they were not aware of any tree planting campaign (Table 2)

Assessment of previous tree planting campaigns

In Table 3 respondents were assessed on previous tree planting campaigns in the study area. Out of the respondent 33.4 % assessed the program as very successful, 35.4 % fair, 6.7 % poor while 24.6 as a total failure.

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Table 2: Response of people on number of times campaign have taken place

Years	Frequency	Percentage of respondents (%)
0	32	13.3
1-5	135	56.3
6-10	41	17.1
>10	32	13.3
Total	240	100

Source: Field survey, 2004

Table 3: Assessment of previous tree planting campaigns

Grading	Frequency	Percentage (%)
Very successful	80	33.3
Fair	85	35.4
Poor	16	6.7
Total Failure	59	24.6
Total	240	100

Source: Field Survey, 2004

General views about tree planting

General views of the respondent on tree planting were also assessed. Four categories of responses were outlined, whether it is necessary, optional, not necessary or respondents are indifferent on the issue. Majority of the respondent (94.6%) view tree planting as very necessary, while 3.3 % believed it's optional and 2.1% are indifferent. None of the respondents accepted that planting is not necessary (Table 4).

Respondents were further asked to identify at least one reason for the need to plant trees. Out of the responses, 27.1% said trees serve as windbreaker. This may not be unconnected with the frequent storms during the onset and cessation of the wet season usually experienced within the region as reported by Adebayo (1999) and Adebayo and Tukur (2003). The storms normally cause a lot of destruction during the period. On the other hand 25.8 % identified the control of desertification as another importance of trees, 22.1 % indicated the importance of trees for fruits and food production; since more than half of the respondents are farmers, fruit trees provides food and is also a source of income, 10 % identified erosion control as an important function of trees which conforms with the earlier report of Tukur and Adebayo (2001) who reported the area as prone to erosion. Only 7.5% suggested the planting of trees for fuel wood (Table 5)

Table 4: Respondents views on tree planting

View	Frequency	Percentage (%)
Very necessary	227	94.6
Optional	8	3.3
Indifferent	5	2.1
Not necessary	0	0
Total	240	100

Source: Field survey, 2004

Table 5: Importance of Trees

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Response	Frequency	Percentage (%)
Wind breaker	67	27.9
Erosion control	24	10.0
Desertification	62	25.8
Shade	16	6.7
Fruits/ Food	53	22.1
Fire wood	18	7.5
Total	240	100

Source: Field survey, 2004

Respondents were also assessed on the problems they encounter in the planting and management of trees and woodlot (Tale 6); over half of the respondents (60%) complained of extension services as a major problem; there is little or no technical services from the stake holders particularly government. On the other hand 20 % of the respondents complained of unavailability of seedlings even with the donations from the local and state government. About (12%) of the respondents identified drought and other natural hazards as the major problem that hinders the development of the seedlings on the field, 7.9 % identified bush burning as the major problem encountered in establishing seedlings in the field.

Condition of natural vegetation / forest in the last 10 years

Condition of natural vegetation/forest in the last ten years in the study area is presented in Table 7. Over half of the respondents (64.6 %) admitted that the forest and natural vegetation has diminished in the last 10 years, while 27.5 % said there is an improvement and 7.9 % said that there is no improvement at all.

Types of trees / species planted by respondent

The survey identified the types of trees planted by respondents, which include: fruit trees such as *Magnifera indica, Pscilium guajava, Vitellaria paradoxa* etc, neem *(Azadirachta indica), Acacia albida, Khaya senegalensis, Eucalyptus camaldulensis Terminalia catappa* etc (Table 8). 16.7% of the respondents interviewed plant fruit trees alone, this may not be unconnected with the economic potentials of fruit trees to the resource poor farmers. Majority of the respondent (33.3 %) plant two or more tree species, while 20 % declined to respond to the question.

Table 6 Major problems encountered during tree planting campaighns

Problem	Frequency	Percentage (%)
Lack of seedlings	48	20
Lack of extension services	144	60
Drought and other natural hazards	29	12.1
Bush burning	19	7.9
Total	240	100

Source: Field study, 2004

Table 7 Forest and natural vegetation conditions in the past ten years

Views	Number	Percentage (%)
Improvement	66	27.5
No improvement	19	7.9
Diminishing	155	64.6
Total	240	100

Source: Field study, 2004

Table, 9; Types of trees / species planted by respondent

Trees / species	Frequency	Percentage (%)
1	40	16.7
1 and 2	11	4.6
1,2, and 3	13	9.4
1,2,3 and 6	6	2.5
1,2 and 6	16	6.6
1 and 3	14	5.8
1, 3 and 4	6	2.5
1, 3 and 6	5	2.1
1 and 5	6	2.5
1 and 6	6	2.5
2	17	7.1
2 and 3	6	2.5
2, 3 and 6	6	2.6
2 and 4	5	2.1
2 and 5	4	1.7
2, 5 and 6	4	1.7
2 and 6	5	2.1
3	13	5.4
4	9	3.7
No response	48	20
Total	240	100

Key	Code
Fruit trees such as:	
Magnifera indica	1
Pscilium guajava	2
Vitelliria Paradox etc	3
Eucalyptus camaldulensis	4
Azadirachta indica	5
Khaya senegalensis	6
Terminalia catappa	7
Acacia albida,	6

Conclusion and Recommendation

In conclusion, the respondents were aware of the importance attached to tree planting, since majority of them plant one or more tree species. Similarly, they are well informed of the importance of such trees in controlling environmental degradation. Tree planting campaign over the years has a very positive effect on their awareness. However, needed support is not reaching the farmers (in form of seedlings and extension services) and when it is available not at a right time. Thus government and non governmental organizations should work toward ameliorating the situation. Indigenous species should be raised to avoid extinction. Improved varieties of fruit and leguminous trees should be given more emphasis since it has immediate economic benefit to the poor resource farmers as well as improving their crop lands.

Both government and non governmental organizations to educate the people on improved management systems should improve extension services. Regulations should be reinforced on bush burning and wanton miss-use of forest resources.

References

Adebayo, A. (1990): Climate, in Adebayo and Tukur (eds) *Adamawa in Maps*. Paraclete Publishers, Yola. Pp 20-26

Adebayo, A. (2004): Climate, in Adebayo, A. (ed) *Mubi Region: A geographical Synthesis*. Paraclete Publishers, Yola. Pp 32-37

Adebayo, A. and Dayya S. (2004): Geology, Relief and Drainage. In Adebayo, A. (ed) *Mubi Region*. A Geographical Synthesis. Paraclete Publishers, Yola. Pp 22-31.

Adebayo, A and Tukur, L. (2003): Farmers Perception of Environmental Problems in Adamawa State, Nigeria. *Tropical Journal of Environmental Management*. 1: 52-61.

Brills, C. (1994): *Agroforestry:. Agrodak*- series vol. 16. Agromisa Foundation, Netherlands. The Technical Centre for Agricultural and Rural Cooperation (CTA)

Evans J. (1992): *Plantation Forestry in the Tropics*. 2nd ed. Oxford University Press.

Mamman A. B. (2000): Desertification in Nigeria. *Crystal International News Magazine*. Vol. 2. No. 10. Crystal International, Abuja, Nigeria. Pp 38-39

Mohammad M. A., I. M. Polycarp, Jatau D. F., Hamid M.Y. and Goji T.C. (2006): The use of fruit Trees as Strategy for Combating Desertification in Nigeria. *The Nigerian Journal of Tropical Agriculture*, Vol. 7. No. 2, pp 234-241. SAAT, FUT, Yola. Nigeria.

Saidu, I., and Gadiga, B. (2004): Population. In Adebayo, A. (ed). Mubi Region: A Geographical Synthesis. Paraclete Publishers, Yola. Pp 117-119.

Tade A. A. and Ademola T.S. (1992): The Challenges of Sustainable Development in Nigeria. An NGO report prepared for the United Nations Conference on Environment and Development. Rio de Janairo. Brazil. pp 1-28.

Tukur, L. and Adebayo, A (2001): Land Use Degradation and Sustainability of Production Systems in Adamawa State. A Research Report Submitted to the University Board of Research, Federal University of technology, Yola, Nigeria.

Wheeler, R. (1999): Under the Canopy. University of Alaska, Fairbank (UAF) *Newsletter of Cooperative Extension Services*.