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Socioeconomic determinants of farmers' Use of indigenous soil management practices of Yam production in Nasarawa state, Nigeria

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ABSTRACT

The study analyzed the socioeconomic determinants of farmers' use of indigenous soil management practices of yam production in Nasarawa state, Nigeria. A multi-stage sampling technique of six local government areas and three communities each was used to select 288 yam farmers for the study. Data were analyzed using descriptive and inferential statistics. It was discovered that most of the farmers (33.7%) and (31.6 %) were within the age ranges of 31-40 and 41-50 years respectively. Men (92.0) and married (88.2%) farmers dominated yam production in the study area. The literacy level of farmers in the study area was found to be low and majority (41.7%) of them had less than 10 years farming experience. It was discovered that the most prevalent indigenous soil management practices were tillage, crop rotation, mulching, green manuring, shifting cultivation, intercropping, organic manuring, bush fallowing and burning of crop residues in decreasing order of prevalence. The study revealed that Cost effectiveness (99.7%), Conservation of biodiversity (96.9%), user friendliness (94.8%) and Compatibility with the culture of the people (75.7%) were the advantages of using indigenous soil management practices. Use of indigenous soil management practices is significantly and positively affected by marital status, farm size, age and farming experience. The F-value at 5% level of probability confirmed that the joint effects of farmers' socioeconomic characteristics significantly affected the use of indigenous soil management practices of yam production. The study recommends that research and extension must work closely with the rural farmers to consolidate on the identified indigenous soil management practices in the area to improve on them for a sustainable agricultural development. They must also strengthen the confidence of farmers by expressing faith in such local knowledge found to be economically viable and ecologically Sound. This will boost yam production and create opportunity for sustaining a growing population and food security in rural communities of the area.

Introduction

Every society or culture has its knowledge system including knowledge that enables members to cope with daily life, whether in areas of health, agriculture, education, economics and governance or other area of human endeavor. The acceptance of western knowledge systems over time has tended to relegate traditional knowledge systems to the background and consequent labeling as inferior. In the last two decades sociologists and anthropologists have began to question the wholesale adoption of western knowledge systems and their ability to solve peculiar problems of developing societies. The movement advocates the revival of traditional knowledge systems and practices that are considered more sustainable and effective in solving the problems of daily life. (Fadina and Ogunyemi, 2002).

The term indigenous knowledge was first used to describe knowledge that is generated and transmitted by communities over time in an effort to cope with their own agro ecological and socioeconomic environments (Igbokwe, 2001). The term has been referred to variously as traditional knowledge, local knowledge, rural people or community knowledge etc.

Most development interventions in the Third World target the rural people which constitute the majority population. Therefore, intervention in the agricultural sector makes up a major part of intervention efforts. For these efforts which manage to succeed, their sustainability often poses a great challenge. This translates into the utilization of resources within the environment in such a manner as to avoid or to minimize the degradation of the environment and the exhaustion of natural resources. It has been widely noted that local farmers who constitutes the bulk of the rural poor often sabotage efforts at improving their lot by refusing to adopt improved technology introduced to them by a change agent. This may seem ironic but as Chambers (1983) has noted, it may be a perfectly rational behavior. He argued that as those who are in close interaction with their environment, the local farmers become experts as far as that environment are concerned.

Yams are any of the economically useful plants belonging to the genus *Dioscorea* or the tubers or rhizomes of these plants (Coursey, 2002). The genus contains about 600 species but the main varieties of yam belong to the species *Dioscorea rotudata, D.cayenesis, D.dumeloryum* and *d. esculenta*. The yam tuber is

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economically the most important part of the plant. The structure of the tuber is extremely valuable depending on the species. Yams are a valuable source of carbohydrate to the people of tropical and sub-tropical Africa, central and South America, parts of Asia, Caribbean and pacific islands (Coursey *et al.,* 2001). Nigeria produces more yam than any other West African country, they are mostly produced in Nasarawa, Kaduna, Kwara, Oyo, Edo, Anambra, Benue and Cross River States among others. Nasarawa state is one of the major yam producing states in the country. There are 3 yam conditioning centers around the state such as Obi Local Government Area in the south, Keffi Local Government area in the west and Akwanga Local Government area in the southern parts respectively (NADP, 2005)

Soils as a natural resource are more vulnerable than is generally thought, yet they remain the very basis of human existence and the foundation of our food chain (Sheng, 1989). The importance of the soil lies in the fact that all man's activities directly or indirectly depends on the soil. Hence, his attitude towards it and his treatment of it determines his degree of success in feeding his family, and maintaining his home, schools, etc. soil erosion and soil depletion thus constitutes a national hazard, whose containment is a pre-requisite for national development, particularly in societies that are agriculture based (Aromolaran, 1998).

The greatest threat to sustaining agricultural productivity in Nigerian farming communities is the declining productivity of soil caused by loss of soil fertility and destruction of natural soil structure due to wrong adoption and use of modern technology e.g. heavy farm machines. The spectacular emergence of a problem of soil erosion in nearly all parts of Nigeria is an attestation to the inappropriate land use practices in many communities (FMAWRD, 1987).

Since man learned to till the soil in other to feed himself, there has been a steady decline in the productivity of natural resource base. This is particularly true in the tropical environment especially in Africa. Some of the factors responsible for the declining soil quality and productivity in the tropics include unfavorable climate (especially high temperatures and rainfall intensity), fragile nature of soils and increased pressure on land due to increasing population density.

With the realization of declining soil quality and productivity several indigenous soil management practices have evolved over the years to conserve the soil for yam production. Some of these practices include shifting cultivation, bush fallowing, crop rotation, organic and green manuring, intercropping, agro-forestry and conservation tillage.

In Nigeria, the quest for solutions to food crises has seen successive generations through many management systems, both indigenous and exogenous, but without much success. The exogenous practices, although have high potential for increasing agricultural productivity, are found to have more environmental implications and sustainability problems. For example, the application of inorganic fertilizer was initially discovered to compensate for the decrease in intrinsic quality of the soil. With time, however, it became clear that crop yield can no longer improve even by heavy application of fertilizers (Aveyard, 1983).

Huge sums of money have been spent in order to achieve accelerated growth of the agricultural sector in Nigeria. Funds from both the government and foreign donor agencies continued to be used on strategies and methods developed in the western socioeconomic and physical environment, despite this, the country is still not sufficiently providing enough food for its teeming populace. The failure of these efforts translates into heavy wastage of resources that the country can hardly afford. Obviously, a new strategy of development which takes into account local realities is needed.

Food security has been a major concern to stakeholders in rural development for some time. It has been noted that there exist a hunger season in Nigeria during which severe food shortages are experienced in virtually all parts of the country including Nasarawa State (Achike and Uramah, 1999). Root crops which account for between 50-75 percent of the daily supply in the diet of Nigerians (Chandra, 1991) should occupy a prime position in any strategy to tackle the food security problem.

Extension services to yam farmers essentially involve the introduction of recommended practices emanating from experts at research stations and universities to farmers. This approach invariably ignores the expertise of farmers which have been proven to account for steady increase in production. Rural farmers in Nasarawa state possess their unique technical knowledge. This knowledge (which includes their knowledge on soil management and production strategies) remains a fundamentally valuable, underutilized resource. It comes out of specific socioeconomic, political, cultural and agro-ecological setting and should be fully studied, understood and utilized in extension work if agriculture and rural development strategies are to become more sustainable (Scoones and Thompson, 1994). Therefore, this study was conducted to determine the socioeconomic factors that determine farmers' use of indigenous soil management practices of yam production in Nasarawa state. Specifically, the objectives were to:

1. describe the socioeconomic characteristics of yam farmers in Nasarawa state;
2. identify the prevalent indigenous soil management practices of yam production in the study area;
3. assess the advantages of indigenous management practices of yam production in the study area;
4. determine the effects of socioeconomic characteristics on the adoption of indigenous soil management practices.

Methodology

Study area

The study was conducted in Nasarawa State of Nigeria. It is a multi-ethnic state with major ethnic groups such as Alago, Eggon, Mada, Hausa-Fulani, Gbagyi, Ebira, Migili, Afo, Gwandara, Agatu, Rindre, Bassa, Nyankpa and Tiv, among others. The state has a population as at 2006, of about 1,863,274 and it is made of 945,556 males and 917,719 females (NPC, 2006). Farming is the major occupation of majority of the people. The major crops suitable to the ecological conditions and are produced in large quantities are: cassava, yam, sesame, melon, rice, maize, sorghum, soybean, cowpea, ginger, sugar cane, cashew, mango, palm kernel and vegetables. The state has 13 Local Government Areas (LGAs) namely: Akwanga, Awe, Doma, Karu, Keffi, Kokona, Lafia, Nasarawa Eggon,Keana, Obi, Toto, Wamba and Nasarawa. The vegetation is predominantly Guinea Savannah. It has a rainfall of about 131,073mm per annum. The temperature of the area ranges from 25^{o} C to 36^{o}C (Nasarawa State Government, 2008). Fishing, trading, handcrafts and other artisan services provide sources of livelihood to some of the inhabitants.

The state is divided into three Agricultural Zones by the Nasarawa Agricultural Development Project (NADP). They are the Southern Agricultural Zone which is made up of Lafia, Doma, Keana, Awe and Obi Local Government Areas (LGA_S); The Central Agricultural Zone which comprises Nasarawa Eggon, Wamba, Akwanga and Kokona LGA_S and the Western Agricultural Zone which comprises Keffi, Karu, Nasarawa and Toto LGA_S.

Sampling technique

The population for this study consisted of all the yam farmers in Nasarawa State. A sample size of 288 respondents was selected using a multistage sampling technique. In the first stage, 2 Local Government Areas were randomly selected from each of the 3 agricultural zones in the state to give a total of 6 LGAs. Secondly, three communities were purposively selected from each of the 6 LGA_S sampled to give a total of 18 communities. The reason for the purposive selection is because majority of farmers in the communities were yam producers. Finally, random selection of 10% of the population yam farming households from each of the sampled communities was done to give a total of 288 yam farmers for the study.

Data collection

Primary data for the study were collected through field survey by the researcher using a well structured questionnaire and interview schedule with the help of volunteer extension staff of the NADP from each of the agricultural zones. The questionnaire was divided into three sections. Section 'A' contained items seeking information on socioeconomic characteristics of the respondents. Section 'B' contained items on indigenous methods of soil management practices used by the farmers. Section 'C' focused on the advantages of using indigenous soil management practices to the farmer. Direct observation was carried out to confirm the information gotten from the questionnaire.

Reliability

Test and re-test method was used to test the reliability of the research instrument. It was computed by calculating the correlation coefficients between two distributions of test scores obtained at two different times on the same respondents. The instrument was administered to 15 respondents drawn from two communities in Akwanga Local Government Area viz: Gwanje and Bohar at intervals of 2 weeks. Product-moment correlation coefficients (r) of 0.842, 0.718, and 0.712 were respectively obtained for sections A, B, and C of the instrument. The mean of 0.757 indicated high reliability.

Data analysis

The data for this study were analyzed using both descriptive and inferential statistics. Descriptive statistics such as means, frequency, range etc. were used to analysed objectives 1, 2, and 3 whereas the linear, semi-log regression model and the double-logarithmic functional forms were tried out to determine the effect of socioeconomic characteristics on farmers' use of indigenous soil management practices of yam production. The model which gave the best fit in terms of the number of variables which are statistically significant was selected.

The explicit form of the function is presented as follows:

$U = a + b_1x_1 + b_2x_2 + b_3x_3 + \ldots\ldots\ldots\ldots + b_7x_7 + e$

U = Percentage use of indigenous soil management practice by farmers. b= Constant or a vector parameter to be estimated.

b_1-$b_{7=}$ Coefficient or parameter estimate

x_{1---X7} are the socio-economic characteristics that affect the use of indigenous soil management practices among yam farmers

x_1= Age
x_2= Sex
x_3= Marital status
x_4= Educational level
x_5= Years of experience in yam farming
x_6= farm size
x_7= Total annual income
a = Intercept
e = Error te

Results and discussion

Socioeconomic characteristics of the respondent

Results in Table 1 show that most of the respondents (33.7%) were within the productive age range of 31-40 years followed by 41-50 years which form about 31.6 percent of the total respondents. These results agree with Onubougu and Nnadozie (2005) who reported that the age bracket of 31-40 years is an active age bracket in agriculture. Omolola (2005) also noted that the age of a farmer is important in determining productivity and can also influence the adoption of innovation in traditional farming. The results in Table 1 show that majority of the farmers (92%) were male whereas 8.0% were female. This implies that yam production in the state is dominated by male farmers. The male gender dominance may be due to the fact that female are mostly involved in domestic work and do not always have equal means of production like their male counterparts in the study area. Ukonu (2001) identified lack of funds, shortage of land and lack of control over land and other domestic duties at home as some of the constraints faced by women farmers.

Results in Table 1 also show that majority of the respondents (88.2%) were married whereas 11.8 percent were single. The marital status of respondents may become an important factor in agricultural production especially as observed by Umar (2001) when farm labor is in short supply. Consequently, it means the respondents can make use of family labor for their farming activities.

Table 1 shows that most (30.2%) of the respondents had primary education whereas 27.4 percent did not go through formal education and only about 26.4 percent and 16 percent had secondary and tertiary education respectively. This implies that most of the respondents were not well educated. Noor (1981) and Omolola (1986) documented the relevance of the literacy level of a farmer to farm productivity and production efficiency. They are of the view that education facilitates farmers' understanding and use of improved crop technologies. An educated and experienced farming population is expected to be more receptive to new technologies since they are more likely to understand the scientific basis of agriculture and their superiority over their local practices (Idrisa *et al.,* 2006). Farmers in the study area have low literacy level and this might have been the reason for high adoption and use of indigenous soil management practices instead of new improved technologies.

Results in Table 1 show that 41.7 percent of the respondents had less than 20 years farming experience whereas the rest had above 20 years farming experience. Specifically, 27.4, 19.1, 11.8 percent had 20-30, 31-40 and above 40 years age ranges of farming experience respectively. These results imply that yam tuber production in the state had been in existence for long and this may explain why the use of indigenous management practices and crude implements were predominant in the state.

Table 1 further shows that 68 percent and 28 percent of yam farmers in the area operated on less than 5 and between 5-8

hectares respectively. These results disagree with the findings of Aderinola and Akinrinola (2005) that carried out a similar study and reported that majority of yam farmers in Ondo state operated on less than 2 hectares only. This variation may be due to the fact that yam farming is the major occupation of majority of the farmers in Nasarawa compared to Ondo state farmers who took yam production as a supplement to their main occupation probably to produce for consumption and sell the few remaining for income generation (Aderinola and Akinrinola,2005).

Table 1 shows that 31.9 percent of the respondents earned ₦200,000 - ₦300,000 per annum whereas those with higher annual income level (above ₦400000) were 6.8%. These results imply that an average farmer in the area earned ₦16,000 - ₦25,000 per month. This is about the same amount with the federal minimum wage of ₦18,000 which is being agitated that is too small to sustain an average Nigerian family and also below the poverty line of 1 dollar per person per day (World Bank, 1992). Farmers, therefore, need a raise in their income level if they must sustain the livelihood of their families.

Prevalent Indigenous Soil Management Practices

The farmers were asked to identify the most commonly used indigenous soil management practices in the study area. Results in Table 2 show that more than 90 percent of the respondents identified the use of local mulching materials, shifting cultivation, intercropping, crop rotation, green manure and tillage (heaps) as the most commonly used practices. Table 3 shows that 76.7 percent of the respondents identified organic manure to be common whereas 34 and 44 percent identified bush burning and bush fallowing respectively to be common in the study area. This implies that the most prevalent indigenous soil management practice in the study area is the tillage system which is 100 percent heaps making and ranking 1st, followed by crop rotation as the 2nd whereas mulching and green manuring ranked 3rd as ties.

Bush fallowing and burning of crop residue ranked 7th and 8th respectively. Bush fallowing is a good soil management practice that allows soils to regenerate or restore its fertility. However, its low popularity among the farmers may be due to increase in population over time in the study area. Tarawali and Ogunbile (1995) observed that bush fallowing is associated with areas of low population density and abundant land. This singular disadvantage seems to outweigh the advantages of this system. Also, the inheriting and gifting method of land acquisition that was rampant in the study area which results to land fragmentation and give farmers little access to land for fallow system may be a contributing factor. Land, labour and capital were identified as the major constraints of bush fallowing in the study area.

Bush burning is not a common soil management practice in the area. This may be due to the popularity of green manuring as revealed in table 2. It is obvious that farmers in the study area are aware of the fact that burying green vegetation in the soil could enrich the soil rather than burning which leads to soil nutrients degradation and constitute nuisance to the environment. . Agbede (2004) reported that bush burning as a soil management practice is not desirable, even though it provides ash that temporarily ameliorates soil acidity, it exposes the soil surface to forces of erosion.

Mulching was a commonly observed practice on most yams heaps seen in the fields around the study area. The planted yams setts were covered with dry grass or leaves and the materials weighed down with a hoeful of soil. It was learnt that this would enhance soil physical properties through conservation of soil moisture content, reduce the rate of evaporation and also prevent caking of yam setts in the heaps.

Advantages of Using Indigenous Soil Management Practices

The respondents were asked to state the benefits they derived from the use of indigenous soil management practices. Results in Table 4 show that more than 90 percent of the respondents agreed that the use of indigenous soil management practices is cost effective user friendly and help in the conservation of soil biodiversity, whereas, 75.7 percent considered these practices to be compatible with their culture. These results agree with the views of Subedi (1993) who maintained that traditional knowledge is often neglected in agricultural research and development and the price paid for this omission is that new technology are often adopted at a high cost. Indigenous farmers have over the years learned to use local natural resources and ecological processes in more efficient ways, to reduce the use of costly external inputs and to intensify agriculture ecologically.

Effect of Socioeconomic Characteristics on the Adoption of Indigenous Soil Management Practices

The lead equation for determinants of the effect of socioeconomic characteristics on the adoption of indigenous soil management practices was the semi-log functional form which provided the best fit in terms of the number of variables which are statistically significant. Table 4 shows that the variable coefficients for marital status and farm size were significant at 5 percent level of probability. Age and farming experience were significant at 1 and 10 percent level of probability respectively. The results implies that marital status, farm size, age and farming experience affects the adoption of indigenous soil management practices of yam production in the study area.

Specifically, the results revealed that the variable coefficients for sex, educational level and income level had no significant influence on the probability of significant adoption of indigenous soil management practices. Increase in income marginally increases the probability of successful adoption of indigenous soil management practices. On the other hand, increase in level of education of the respondents significantly increases the probability of successful adoption of indigenous soil management practices. Experience of formal education can give an unparallel advantage to the people of an area in terms of quick understanding of scientific principles underlying the use of indigenous soil management practices.

The findings here are consistent with that of Ekong (1988) who reported that the higher the income level, the higher the capacity for adoption decisions. Indigenous soil management practices are practices the farmers are already familiar with and high income level will enhance high adoption and usage.

The F-value was 3.420 and significant at 5% level of probability. This implies that the joint effects of farmers' socioeconomic characteristics included in the regression model on adoption intensity of indigenous soil management practices were significant. This result confirmed that the characteristics have significant effect on the adoption intensity for indigenous soil management practices of yam production in the study area.

Conclusion

The study established that age, marital status, farming experience and farm size significantly influenced the respondents' adoption and use of indigenous soil management practices of yam production in Nasarawa state. . It was

discovered that the most prevalent indigenous soil management practices were tillage, crop rotation, mulching, green manuring, shifting cultivation, intercropping, organic manuring, bush fallowing and burning of crop residues in decreasing order of prevalence. The study revealed that Cost effective, Conservation of biodiversity, user friendliness and Compatibility with the culture of the people were the advantages of using indigenous soil management practices. In view of the above findings, the following recommendations are made:

1. Research and extension in Nasarawa state must as a matter of urgency work closely with the rural farmers to consolidate on the identified indigenous soil management practices of yam production. This is with a view to improving on them for a sustainable agricultural development. They must also strengthen the confidence of farmers by expressing faith in such local knowledge found to be economically viable and ecologically Sound.
2. Farmers in this study were found to be adults with low educational qualifications. Therefore, government and non-governmental organizations should design effective adult literacy programmes and policies in the area which will encourage farmers to improve on their educational levels. This will enable them understand the scientific principle at work in their environment and stimulate them to improve on the indigenous knowledge of soil management they leant through years of observation, practice and experimentation.
3. For every programme targeted at community development, there is need to consider and encourage the use of indigenous management practices. These practices are ecologically sound, and should be supplemented and improved rather than replaced by modern technology. Therefore, the farmers should be encouraged not to discard their indigenous knowledge of soil management practices but to combine them with the modern soil management methods for higher productivity. This will further encourage the development of rural communities through agricultural production.
4. To sustain and increase the productivity of agriculture in the country, the three levels of government should device means of improving on the socioeconomic environment of the farmers. Support for farming programmes in the yam sector and indigenous method of production should be given for effective coordination as those grown using indigenous methods have a great potential for export as the world is turning to organically grown crops.

References

Achike, A.I. and K.C. Uraamah (1999). "Towards environmentally sustainable strategies for food security: The role of Indigenous Knowledge" In: Fabiyi, Y.I. And E.O. Idowu (eds), *Poverty Alleviation and Food Security in Nigeria*. Ibadan: Nigeria Association of Agricultural Economists. Pp. 181 – 187.

Aderinola E. A. And Akinrinola O.O. (2005) Profitability, Input Elasticities And Return To Scale For Yam Production In Ondo State, Nigeria. Agricultural Re Birth

Agbede, O. O. (2004). Hannessing Low Input Technology And Indigenous Knowledge For Sustainable Food Crop Production In Nigeria. In: Indigenous Knowledge And Sustainable Development In Nigeria. Proceedings Of The National Conference On Indigenous Knowledge And Development Held In University Of Agriculture Makurdi. Pp 168

Aromalaran, A.B. (1998). Economic analysis of soil conservation practices in south. Issues in African Rural Development Monograph Series. African Rural Social Research Networks. Winrock International.

Aveyard, J.M. (1983). Soil Erosion: Productivity Research In New South Wales. Technical Bulletin No.24 Wagga Research and Technical Service Centre, Soil Conservation Service of New South Australia.

Chambers, R. (1983). Rural Development: Putting the last first. New York: Longman

Chandara, S. (1991). "Contribution of tropical root crops to socioeconomic improvement of the Developing World", *Proceedings of the 9th Tropical Crops*, 20th-26th October, Accra Ghana, Pp 43- 48.

Coursey, D.G. (2002). Civilization and interpretation of Yam in Africa. 2 (3):215-233.

Fadina O.O. and S.Ogunyemi (2002). The potentials of farmers Indigenous Knowledge for the control of plant diseases, 232-233. *In*; *Linking Formal and Informal Science for Sustainable Development.* Proceedings of the Gender, Science and Technology Association Regional Conference, Abuja, Nigeria.pp418.

FMAWRD (1987). "Soil conservation technique for small scale farming". Prepared by Department of Agricultural Land Resources, Federal Ministry of Agriculture, Water Resources and Rural Development, for the occasion of World Food Day, 16th October, 1997.

Idrisa, Y. I., Gwary, M. M .and Ibrahim A. (2006). Determinants of Adoption of Cassava Farming Techniques in Mubi North LGA of Adamawa State, Nigeria Production Agriculture and Technology (Pat) 2:26-36

Lafia. Nasarawa State Government (2008). Precious Nasrawa Nigeria Investors Haven. An Information Brochure On The Investment And Tourism Potentials Of Nasarawa State Government. Pp. 1-22.

Nasarawa Development Agricultural Programme (2005). NADP (PME) Department, National Planning Commission (NPC) (2006). Abuja.

Noor, A. (1981). Educational and Basic Human Needs. World Bank Working Paper No. 450.

Omolola, A. S. (1986). Agribusiness Credit In Nigeria: Dimensions Of Institutional And Policy Deficiency. A Paper Presented At The Third National Conference Of ARMTH In Ilorin. In: Onubougu G. C. And Nnadozie B. C. Socioeconomic Factors Affecting Broiler Brooding In Obuwu Local Government Area of Imo State Nigeria*: Agricultural Rebirth In Nigeria.* Proceedings of the 39th Annual Conference of The Agricultural Society of Nigeria Held at the University of Benin, Benin City, Nigeria, Oct 9th-13th. Pp44-49.

Scoones I. and J.Thompson (1994). Knowledge, Power and Agriculture. Towards Theoretical Understanding .*In*: Scoones I. and J.Thompson (eds),Beyond Farmer (pp 16-32).London. First International Technology Publication Ltd.

Sheng, T.C. (1989). Soil conservation for small farmers in the humid tropics. FAO soils. Bulletin, No.60. FAO ROME.

Subedi, K.D. (1993). Search For Indigenous Green Manuring Species For Rice In The Western Hills Of Nepal. LARC, Review Paper No.2, Lumle. Agricultural Research Center, Nepal.

Tarawali, G. And O.A Ogunbile (1995). Legumes for Sustainable Food Production in Semi-Arid Savannah. Ileia Newsletter for Low External Input and Sustainable Agriculture. Farmers Facing Change. Vol. 11 No.4, 18-19.

Umar, I. S. and Ndanitsa, M. A. (2007). Optimum Farm Plans for Fadama Farms In Niger State. Journal for Agricultural Extension. 10 (1): 46-58.

World Bank (1991).World Development Report 1991, New York: Oxford University Press.132pp.

Table 1: distribution of respondents according to their socioeconomic characteristics (n=288)

Characteristics	Frequency	Percentage
Age		
20-30	27	9.4
31-40	97	33.7
41-50	91	31.6
>50	73	25.3
Total	288	100
Sex		
Female	23	8.0
Male	265	92.0
Total	288	100
Marital status		
Single	34	11.8
Married	254	88.2
Total	288	100
Educational level		
Non formal	79	27.4
Primary	87	30.2
Secondary	76	26.4
Tertiary	46	16
Total	288	100
Farm size (Ha)		
<5	196	68.1
5-8	82	28.5
9-12	5	2.2
>12	5	1.2
Total	288	100
Farm experience		
<20	120	41.7
20-30	79	27.4
31-40	55	19.1
>40	34	11.8
Total	288	100
Income(₦)		
<100000	14	4.9
100000-200000	69	24.0
200001-300000	92	31.9
300001-400000	48	16.7
>400000	65	22.6
Total	288	100

Table 2: Distribution And Relative Rank Of Farmers According To Prevalent Indigenous Soil Management Practices (N=288)

Indigenous soil mgt practices	*Frequency	Percent	Rank
Bush fallowing	129	44.8	7th
Mulching	285	99.0	3rd
Shifting cultivation	277	96.2	4th
Intercropping	276	95.8	5th
Crop rotation	287	99.7	2nd
Green manuring	285	99.0	3rd
Tillage (Heaps)	288	100	1st
Organic manure	221	76.7	6th
Burning of crop residue	98	34	8th

*Multiple responses are considered hence the total frequency is more than the sample size.

Table 3: Advantages Of Using Indigenous Soil Management Practices (N=288)

Advantages of using indigenous soil management practices	*Frequency	Percent
Conservation of soil biodiversity	279	96.9
Cost effective	287	99.7
Compatible with the culture of the people	218	75.7
User friendliness	273	94.8

*Multiple responses are considered hence the total frequency is more than the sample size.

Table 4: Regression Of Socioeconomic Characteristics On Indigenous Soil Management Practices

Socioeconomic characteristics	Coefficient	Standard error	T-value
Age	0.167	0.057	2.91***
Sex	-0.059	0.048	-1.23^{NS}
Marital status	-0.95	0.042	-2.29**
Educational level	0.003	0.053	0.59^{NS}
Farming experience	-0.038	0.021	-1.75*
Farm size	-0.053	0.022	-2.36**
Total annual income	0.000	0.014	-0.009^{NS}

F-value 3.420**
R^2 –value 0.53
***: Significant at 1% level of probability.
**: Significant at 5% level of probability.
*: Significant at 10% level of probability