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Research

FARMERS PERCEPTION OF THE EFFECT OF AGING ON THEIR AGRICULTURAL ACTIVITIES IN ONDO STATE, NIGERIA

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Abstract. The increasing concern about global aging as it relates to agriculture where the major producers are aging calls for an inquiry into the effects of ageing on their agricultural activities as it has implications for food security. Using a multi stage sampling technique, the study examined hundred farmer's perception of the effects of aging on their agricultural activities in Ondo State of Nigeria. Descriptive statistics were used to present the study findings while the t-test statistic was used to determine the significant difference in perception of their involvement in agricultural activities when young and when older. Majority reduced scope (69.5%) and hours (66.7%) of operation as they grew older. Significant differences existed in perception of involvement in all agricultural activities involved in by respondents. There is the need to encourage younger entrants into agriculture to boost production and ensure food security.

Keywords: agriculture, aging, perception, food security

Introduction

In much of the developing world, rapid declines in mortality and fertility are now leading to population aging. Nigeria, where the largest proportion of the population is involved in agriculture faces a great challenge as majority of replacement generations of youth do not intend to get involved in agriculture. This is a major challenge which has implications for food security due to the fact that Nigerian agriculture is still labour intensive using primitive tools, which makes it less efficient and productive as ageing sets in due to limitations of physical strength. As further threats of increased aging looms in the nearest future due to relatively improved welfare conditions, there is need for concerted efforts at sustainable solutions.

Aged persons (age 60 years and above) according to the United Nations estimates are nearly 10 percent of the world's population, or over 600 million persons and this number is expected to double by 2050.[1)] Nearly two-thirds of this elderly group live in the developing World. The world's elderly population is expected to rise from 606 million in 2000 to almost 2 billion by 2050, representing an increase of about 230 percent over the period. In the more developed regions, the population aged 60 or over is increasing at the fastest pace ever (growing at 1.9 per cent annually) and is expected to increase by more than 50 per cent over the next four decades, rising from 264 million in 2009 to 416 million in 2050.[2)] Compared with the more developed world, the population of the less developed regions is ageing rapidly. Over the next two decades, the population aged 60 or over in the developing world is projected to increase at rates far surpassing 3 per cent per year and its numbers are expected to rise from 475 million in 2009 to 1.6 billion in 2050. In Nigeria, the proportion of the aged population has been increasing. The total number of persons aged 50 years and above in 1952/53 was 2,448,000. In 1963 and 1991 population census the total number of persons aged 50 years and above was 3,617,000 and 8,227,782 respectively (Asiyanbola, 2008). In 2006,

the percentage of the population 60 years and above was 6.5%, 6.3% in 2007 and 6.0% in 2008 (NBS, 2009). With increasing better quality of health facilities, declining fertility and technological improvement, there is expected to be an increase in the population of the aged in the coming days.

According to the official data[2] the fertility in the less developed regions as a whole is expected to drop from 2.73 children per woman in 2005-2010 to 2.05 in 2045-2050. The reduction projected for the group of 49 least developed countries is even steeper: from 4.39 children per woman to 2.41 children per woman. The evidences go to affirm our fears that there is increasing growth in the total number of elderly persons. Nigeria is the most populous country in Africa and currently has the highest older people population in Africa.[3] With the largest population in Africa and the ninth in the world, it is estimated that by the year 2025 the population of Nigerians aged 60 and above will constitute 6 percent of the entire population. This estimate has however already been surpassed as shown in the 2009 report of the National Bureau of Statistics.[4]

The largest proportion of the Nigerian population involved in agriculture faces a great challenge as majority of replacement generations of youth do not intend to get involved in agriculture. This makes it almost impossible for farmers in Nigeria and most developing nations to retire from active agricultural service and thus calls for an inquiry into the effects of ageing on their agricultural activities as this has rural-urban migration and disenchantment of the younger generations from farming. There is the need to examine if there are significant changes in activities of farmers as they age and if there are in what ways can research be tailored to assists them to function efficiently in the current dearth of farmers. The study was therefore carried out to assess farmer's perception of the effects of aging upon their agricultural activities.

Objectives of the study

The general objective of the study was to determine the perceived effects of aging on agricultural activities among farmers in Ondo State, Nigeria. The study specifically: (i) ascertained agricultural production activities of respondents; (ii) identified strategies adopted by respondents to cope with aging; (iii) determined respondents perceived effects of aging on their agricultural activities; (iv) determined the significant perceived differences in level of involvement in agricultural activities between the younger and the older dispensations.

Methodology

Ondo state, with its capital in Akure was created in February 3, 1976 as one of the 36 states of the Federation of Nigeria by the government of General Murtala Mohammed. Created from the former Western region, it originally included the present Ekiti state (which was split off in 1996). The state is made up of 18 Local Government Area and located in the south western zone of Nigeria. Lying entirely in the tropics, the state lies between longitudes $4^0 30^{'}$ and 6^0 East of the Greenwich meridian and $5^0 4'$ and $5^0 15^{'}$ North of the equator. Ondo state is bounded in the north by Ekiti and Kogi states, in the east by Edo state, in the west by Osun and Ogun States, and in the south by the Atlantic Ocean. The State covers a land area of 14,793 km^2 and is located entirely in the tropics. The State enjoys luxuriant vegetation with forest zone (rain forest) in the south and sub-savannah forest in the northern fringe. The state has a population of 3,441,024 comprising 1,761,263 males and 1,679,761 females according to the 2006 census. Having a total state GDP estimate of $ 8.41 billion in 2007, the per capita GDP of the State was $ 2,392 in 2007. The State is peopled predominantly by Yoruba's who speak various dialects of the Yoruba language such as the Akoko, Akure, Ikale, Ondo, Ile-Oluji/ Oke Igbo, Owo and the Ilaje, Apoi and the Ijaw. The people are mostly subsistence farmers,

fishermen and traders. The state economy is basically agrarian with large scale production of cocoa, palm produce and rubber. Other crops like maize, cassava and yam are produced in large quantities.

Sampling procedure and sample size

Primary data for the study was collected through a multi-stage sampling technique using in-depth interview. In the first stage, ten percent of the Local Government Areas (LGAs) in the state (two LGAs); Akure North and Akure South were randomly selected. In the second stage, four villages were randomly selected in each LGA making a total of eight villages (Jegele, Iju, Odudu, Ita-ogbolu, Aule, Aba-oyo, Ita-oniyan and Ipinsa). The third stage involved a purposive selection of 15 farmers each in the villages who were 50 years and above as respondents for the study. Fifty years was used as the cut off age based on literature as to when persons begin to enter the group of the elderly in Africa and especially in Nigeria (Thane, 1978; Togunu-Bickersteth, 1987). However, only a total of 100 farmers responded to the in-depth interviews. The interview schedule had questions with closed and open-ended responses and focused on a variety of topics related to socioeconomics, welfare and perceptions of farmers towards aging.

Descriptive statistics such as frequency distribution, percentages, mean, bar and pie charts were used to present the findings of the study.

Perception was measured on a 4-point Likert scale with the score of 3, 2, 1, 0 for the answers; 'most times', 'sometimes', 'rarely' and 'not at all' respectively for the responses on perceptions when they were young. The perception responses for when they are now old were also measured on a 4-point Likert scale with a score of 3, 2 ,1 and 0 for the answers; 'still the same', 'reduced a bit', 'reduced drastically' and 'not involved again' respectively. The mean score of responses were derived for each activity as well as for each farmer and the average for the study derived. The t- test statistic was then used

to test the significant difference in the perception of farmers with regards to their agricultural activities before old age (younger) and during old age.

Results and discussions

Socio-economic characteristics

The socio-economic characteristics of respondents considered in the study included age, sex, marital status, level of education and household size. Table 1 shows that 49% of the respondents fell between ages 50 – 65 years and 51% of them were above 65 years. The mean age for the study was 65 years which reveals that the sampling captures the target audience of the aged to a very large extent. The large mass of aged farmers still found in farming corroborates the justification for the study and according to Ugwoke et al. (2005); this is not a good index to improved productivity because farmers' productivity is deemed to decrease as they age.

According to Table 1, 71% of the respondents were males while 29% were females. The implication of gender here is that farming activities are gender sensitive as women are mostly not opportune to own farms due to cultural biases and low resource. However, sometimes they do so either by inheritance from their parents or their late husbands' and in rare cases buys land.

According to Table 1, 84% of the respondents are married, 13% are widowed while 3% are single. The fact that majority of the respondents are married could imply that couples are engaged in cooperative effort in farming activities or operation. Their wives will thus be a source of support for them even in their old age.

Table 1 shows the level of educational attainment of the respondents. The Table reveals majority (61%) of the respondents had no formal education, 33% had primary school education, and 4% had secondary school education while 2% had either Higher National Diploma or University education. This indicates that the levels of illiteracy among older farmers are higher as majori-

ty of the farmers can neither read nor write. This has implications for development of the agricultural sector as Olayide et al. (1980) supports the fact that low level of education has been adduced as one major reason for low level of technology adoption by older farmers.

Table 1. Socio-economic characteristics of respondents

Variables	Frequency (n=100)	Percent
Age of farmers (years)		
50 – 65	49	49.0
Above 65	51	51.0
Gender		
Male	71	71.0
Female	29	29.0
Marital status		
Married	84	84.0
Single	3	3.0
Widowed	13	13.0
Level of education		
No formal education	61	61.0
Pry school	33	33.0
Secondary school	4	4.0
HND/BSc.	2	2.0
Household size		
≤ 5	40	40.0
Above 5	60	60.0

The study reveals that 40% of the respondents have five members or below in their household while 60% have more than five members in their household (Table 1). The mean household size was four persons. This reveals that many of the respondents do not have sufficient hands to support or assist them on their farms in case of high labour demands. This will definitely make the farmers reduce their farm sizes to be able to cope with labour demands. According to respondents, most of their children are in school or in the cities searching for gainful employment or better living condition. Fasina (2005) and Nwachukwu (2008) stated that the drift of youth to towns and cities has

made the use of family labour impossible as farming activities are left in the hands of old or aged people.

Agricultural production characteristics of pespondents

Fig. 1 shows that respondents who have been farming for between 10 – 25 years were 22% while 42% had been involved in farming for between 26 – 40years. Thirty six percent of the respondents had farmed for over 40years. Average years of farming experience was 38 years, which going by the average age of respondents implies that many of the respondents got involved in farming when they were about 27 years of age. Such persons ought to have retired going by the compulsory retirement after 35 years of public service. Their long length of involvement in service will thus enable them to ascertain the changes to their agricultural activities as they aged. Despite the fact that majority (78%) have farmed for over 25 years, they are still poor and do not know what to do to change their standard of living.

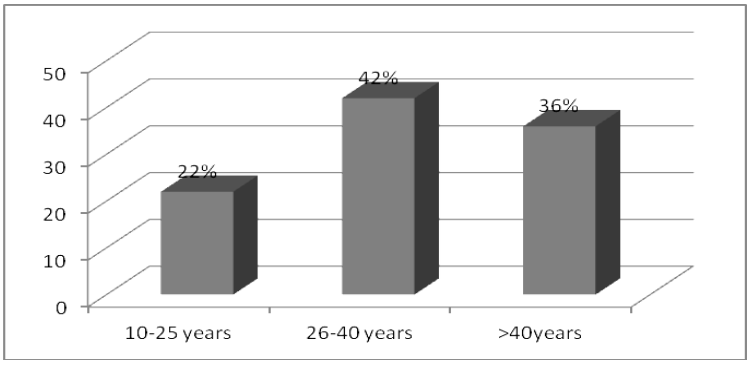

Fig. 1. Farming experience of respondents

Total farm size of respondents is the aggregate of all lands used for arable and cash crops owned by the farmers. From Fig. 2, the total area of the land put into arable and cash crops production by the farmers shows that 10% of the farmers had less than 2 hectares of farm land (small scale), 42% culti-

vated between 2 - 5 hectares while 48% of the farmers (large scale) cultivated above 5 hectares of land. In the context of the developing world, majority (48%) fall into the large scale category. This is otherwise rare but it is so because many of the respondents were involved in cash crops farming like cocoa, which makes them to have larger farm sizes.

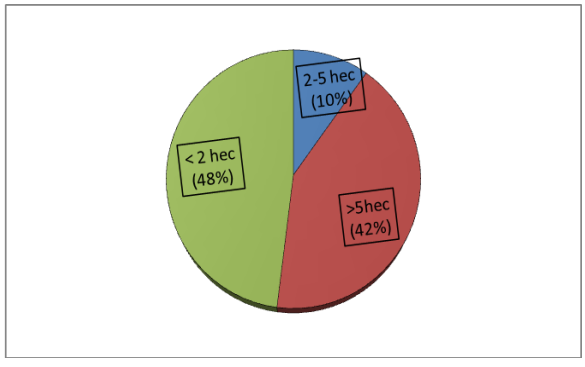

Fig. 2. Total farm size of respondents

Annual farm income of respondents

According to Fig. 3, farm based annual income for 21% of the respondents were less than ₦ 20,000, 26% of the respondents earned between N 20,000 - ₦ 50,000 while 20% earned between ₦ 50,000 - ₦ 100,000 and the majority (33%) earned above ₦ 100,000. If this was to be divided equally into 12 months, majority (67%) respondents will be earning less than ₦8, 333.33 monthly. Given the $1 per day/person cut off mark for poverty and an average of 4 persons per household in the study, a total of N19, 200/month (₦160= $1) will be needed. Thus, the household monthly income for the study is grossly inadequate.

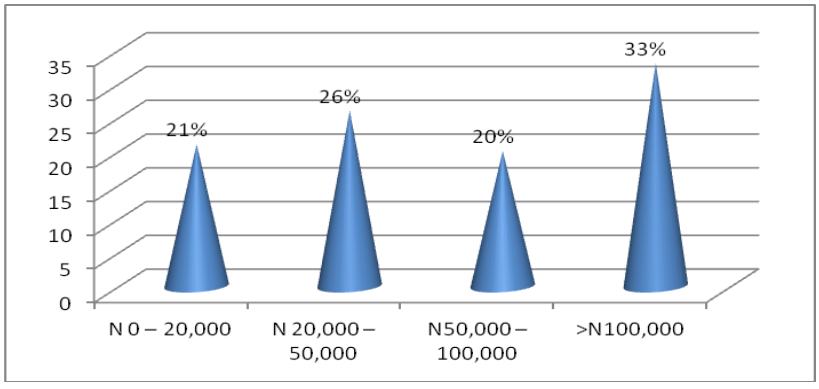

Fig. 3. Annual farm income of respondents

Agricultural enterprises of respondents

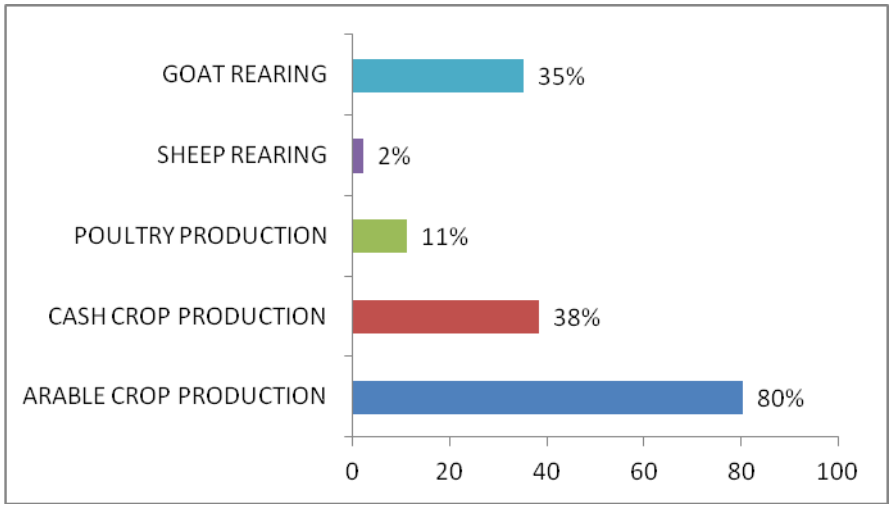

Fig. 4. Agricultural enterprises of respondents

Fig. 4 showed that the respondents were highly involved in arable crop production (80%) while involvement in cash crop was 38%, goat rearing (35%), poultry production (11%) and sheep rearing (2%). The finding implies that the respondents are more involved in arable crop production than live-stock production probably due to its short gestation period that ensures quick-

er returns. In addition, livestock production could be more capital intensive and technically oriented than food crop production, hence the preference for crop production by most farmers who are not literate. The fact that they are mostly involved in food crop production confirms the fact that majority of those producing food for the Nigerian population are aging and diminishing in strength. The high energy demand for crop production under small scale production systems will further reduce the quantity of output from older farmers. Older farmers could thus be encouraged to invest or diversify into livestock production.

Type of labour employed

From Fig. 5, 33% of the respondents make do with only the labour of family members, especially wives for their agricultural activities while 9% hire labour to do their activities on the farm. Majority (59%) however uses both family and hired labour. The need to cut down on cost of production and increase profit may be the reason why many aging farmers rely much on their family labour while in some cases they use hired labour when they have no option. The employment of hired labour will consequently increase cost of production and this may be transferred to the consumer through increase in prices of food crops.

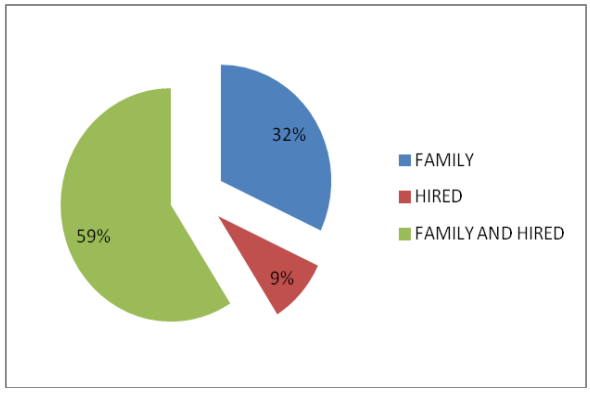

Fig. 5. Types of labour employed by respondents

Adaptation strategies used by the aged involved in agricultural activities

The adaptation strategies are respondents' responses to the effects of aging on their agricultural activities. They are means by which they cope with the rigours of the job while maintaining their health and income as they continue to farm into the later years. According to Fig. 6, 69.5% reduced their work hours. It is thus likely that the average 8hrs man-day will be reduced by half, which makes the volume of work to be done drastically reduced. Those who reduced their scale of operation were 66.7% and 66.7% also hired more labour while 4.8% made use of machines. None of the respondents suggested the use of their children because they do not want their poverty situation to be entrenched into the next generation. Though involved in farming, most of them view farming as been difficult, primitive and economically unsustainable (Omotayo, 2010). The inability of many to use machines either due to cost or meagre farm sizes signifies the shrinking of productive farmlands.

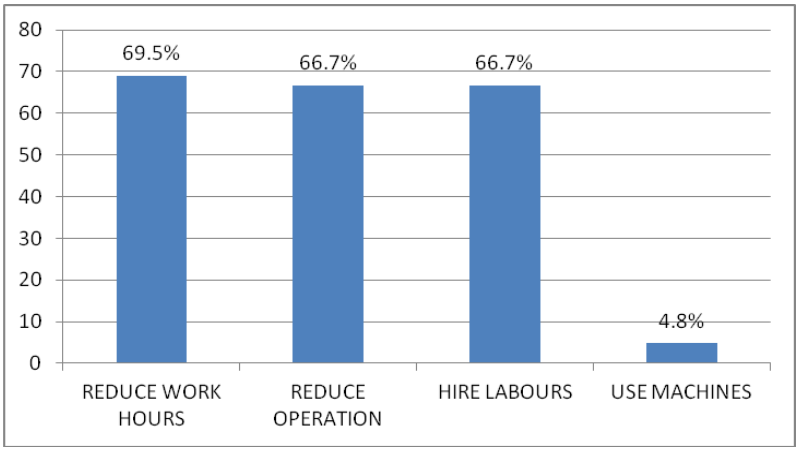

Fig. 6. Coping strategies of respondents in agricultural activities

Respondents' perception on their level of involvement in agricultural activities between the younger and older dispensations

Table 2 presents respondents perception as to the effects aging had on their agricultural activities. Responses for their level of involvement in the various agricultural activities when younger showed majorities (above 70% in all cases) had high levels of involvement. This however was the contrary when they are now old. Those who still had the same level of involvement as of when they were young ranged between 3-7%. This clearly shows that their level of physical involvement and consequentially their agricultural productivity have been detrimentally affected. The comparisons of their level of involvement in agricultural activities when they were much younger and now that they are old/getting older using the t-test statistic revealed significant differences at the 0.05 level of significance. Table 3 revealed a mean score of over 2.5 for all the responses when they were much younger, implying that they were mostly involved in all the activities listed. Their involvement in marketing, transportation, processing, and storage were however very high when compared to the other activities when they were much younger. This could likely indicate that these activities were much easier and less strenuous for them even when they were younger. Clearing of farm land had the lowest mean score for involvement which signify that it would likely be the most strenuous of all the activities. Now that they are old, activities that they were relatively more involved in were marketing, storage and weeding. Weeding in particular seems to have physiotherapeutic effects on the aged as it helps them

to exercise their body and it is not an activity that requires much effort and can be done at one's pace. The agricultural activity respondents were least involved in was also land clearing which affirms the fact that it is one of the most strenuous activities of concern to the ageing farmer. Taking a closer look at the difference in the score of each activity, it can be observed that that of clearing and heap making had the highest difference in means of 1.6 respectively. This implies that these two activities are perceived to be very demanding on the agility and strength of the farmer. It thus implies that farmers will likely hire labour for these and if given the opportunity and financial backing they will go for tractors to prepare the land. The implications of marked differences in farmer's activities in old age signify the probable rise in the use of hired labour and if other wise, a decrease in farm land area cultivated. Both has negative implications for food security, as in the case of increase in hired labour, food prices will increase and make it unaffordable to the poor. In the other scenario, food supply will be cut down as farmers will produce the little they can afford to produce within the limitation of their strength and health. This will also lead to rises in food prices but with attendant famine which is more detrimental to human existence. Government should therefore, intervene by providing mechanisation for farmers and at subsidized rates. Farmers should also be encouraged to team up to rent tractors for land preparation. In the long run, government should begin to develop youth agricultural oriented programmes and create conducive operating environment to mobilise youths

to venture into farming and help them to see it as a viable and worthy occupation.

Table 2. Respondents' perception of effects of aging on involvement in agricultural activities

		Level of involvement in agricultural activities when younger					Level of involvement in agricultural activities when old/getting older							
	Activity	A	B	C	D	**m**	E	F	G	H	**m**	a	b	Remark
1.	Clearing	73	12	13	2	2.6	3	25	41	31	1.0	16.7	0.0	significant
2.	Ridges/Heaps	73	24	3	0	2.7	3	28	44	25	1.1	18.2	0.0	significant
3.	Planting	81	19			2.8	5	39	50	6	1.4	18.8	0.0	significant
4.	Weeding	87	13			2.9	4	46	45	5	1.5	19.9	0.0	significant
5.	Herbicide application	73	23	3	1	2.7	6	28	53	13	1.3	16.9	0.0	significant
6.	Fertilizer application	73	23	3	1	2.7	5	29	52	14	1.3	17.2	0.0	significant
7.	Harvesting	77	19	4	0	2.7	4	32	44	20	1.2	16.8	0.0	significant
8.	Processing	96	4	0	0	2.9	7	41	37	15	1.4	18.7	0.0	significant
9.	Storage	97	3	0	0	2.9	7	43	39	11	1.5	18.9	0.0	significant
10.	Transportation of produce	97	3	0	0	2.9	7	40	36	17	1.4	18.5	0.0	significant
11.	Marketing	97	3	0	0	2.9	7	54	36	3	1.7	19.9	0.0	significant

A: most times; B: sometimes; C: rarely; D: not at all; E: still the same; F: reduced a bit; G: reduced drastically; H: not involved again; m: mean score; a: t-value; b: p-value

Table 3. T-test

Perception of level of involvement in agricultural activity	mean	Std. dev.	Dif. means	Std. dev.	t-value	df	p-value
When young	30.9000	3.55192	16.29000	8.14923	19.990	99	0.00
Now aging	14.6100	7.29729					

Conclusion

The study examined the perception of farmers as to the effects of ageing on their involvement in agricultural activities. The study concluded that the farmers perceived a significant difference in their level of involvement in all the agricultural activities examined. Land clearing and heap making were the agricultural activities that had the highest mean differences had for the two periods. This two activities are however crucial in the developing world economy as farm lands are cleared every season and heaps made for more profitable rooting of tuber and root crops which are the food staples for the populations. This inevitably has grave implications for food security. It is therefore recommended that government should sponsor technology development researches especially on small handy machines that could assist ageing farmers in land clearing and heap making. This could also encourage younger farmers to get involved in agriculture. Such machines could be jointly owned by groups of farmers to reduce financial burdens, for proper and efficient use as well as to ensure sustainability.

NOTES

1.http://info.worldbank.org/etools/docs/library/78330/3rd%20Workshop/Srmafrica/paristwo/pdf/readings/oldage.pdf

2. United Nations Population Division/Desa (2009). World population to exceed 9 billion by 2050. *Press Release*, p.7, 2009.

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