

ASSESSMENT OF MALE AND FEMALE PARTICIPATION IN RICE PRODUCTION ACTIVITIES IN LAU LOCAL GOVERNMENT AREAS OF TARABA STATE, NIGERIA

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ABSTRACT

The study assessed male and female participation in rice production activities in Lau Local Government Area of Taraba State, Nigeria. Rice farmers in Lau Local Government constituted the population of the respondents. Structured questionnaires were used for data collection. Multi stage sampling procedure was employed where a total of 99 respondents were selected. Data were analyzed using descriptive and inferential statistic. The findings showed that majority of the women 70% were involved in marketing while only about 47% of the men were involved in marketing. The result also showed that 45% of the female are involved in transportation activities while about 67.7% of the male participated in transportation activities. About 56.1% of the females were involved in drying while only about 23% of the males participated in the drying. The result further showed that, 37.3% of the female were involved in storage activities while majority of the males 72.7% participated in storage activities more than their female counterpart. The result also indicated that 38% of the female were involved in packaging while 69.7% of the males were involved in the packaging. The result showed that the females were more involved in parboiling of rice than the males. About 21% of the females were involved in tilling while majority 73.1% of the males were involved in the tilling, about 42% of the females were involved in clearing while 55.2% of the males were involved in land clearing. Result also shows that the difference in participation of male and female farmers in rice production is not significant ($t = 0.03225$) with female ($\bar{X} = 10.9$) and male ($\bar{X} = 11$) and female mean $\bar{X} = 10.9$ with difference of (0.1). The male farmers according to the means differences participate more in rice production than females in the study area. Based on this the following recommendation were made; Female education should be encouraged by government. This will help to increase the number of women participating in new findings in agriculture. Married men should be sensitized on how to release their wives to participate in rice processing, and other farming activities that will go a long way to improve the income of their wives.

Keywords: Participation, rice, production activities, gender

INTRODUCTION

In Africa, rice *Oryza glaberrima* has been cultivated for 3500 years, between 1500 and 800 BC it was propagated from its originated centre, the Niger River Delta, and extended to Senegal. Its cultivation declined in favour of the Asian species, and spread westward (Maddox, 2006). According to Food and Agricultural Organization, Nigeria produced

4.8 million metric tonnes in 2012. Rice is a major food staple and a mainstay for the rural population and their food security. It is mainly cultivated by small farmers where average holding is about 1.0 – 3.0 hectares. Agriculture is an important source of employment for 87% of economically active women and 80% of economically active men (Blackden and Rwebangira, 2004).

Women are known to be more involved in agricultural activities than men in Sub-Sahara African (SSA) countries (Edeoghon, Iyilade, Nwachukwu, 2019). According Edeoghon et al (2019) indicated that Male and female rice farmers participated equally in parboiling, dehushing, packaging, storage, transportation and marketing. Rice production involves a lot of agricultural activities carried out by farmers comprising of both men and women. The gender participation in its cultivation are clearly seen in the different stages of production from land clearing, tilling, weeding, planting, harvesting, transplanting, drying, cleaning, threshing, winnowing, packaging, storage, transportation etc. These operations are commonly dominated by a particular gender group due to some certain factors like laborious nature of the work, tradition or custom and lots more (Edeoghon, Iyilade, Nwachukwu, 2019). Food and Agriculture Organization (FAO) defines gender as “the relation between men and women both perceptual and material. Gender is not determined biologically, as a result of characteristics of either women or men, but is constructed socially. It is a central organizing principle of society and often governs the processes of production and reproduction, consumption and distribution. However as seen from the FAO definition, gender issues focuses on the relationship between men and women, their roles, access to and control over resources, division of labour, interests and needs. It is common knowledge that gender inequality is one of those issues encountered as it cut across different roles, norms, and values, govern the gender division of labour and gender distribution of resources, responsibilities, agency and power (Franklin, 2007). Major importers of rice usually include

Nigeria, Bangladesh, Iran, Iraq, Saudi Arabia, Indonesia, Malaysia, the Philippines, Brazil and some African and Persian Gulf countries. The local production of rice is estimated to be three million tonnes. The current demand amounts to five million tonnes (Nigeria Agricultural Marketing News Bulletin, 2014).

Agriculture is the most important sector of the economy from the standpoint of rural employment, sufficiency in food and fibre, and export earning prior to the discovery of oil. Globally, it is evidenced that one of the major problems confronting mankind in recent times is food crisis. In respect to the aforementioned, it is observed that considerable studies have been carried out on rice in Nigeria, however, most of these studies focused on other areas like; Male and Female Participation in Selected Agricultural Development Programmes in Edo State (Uzokwe, Ofuoku and Dafe, 2017) and Assessment of Gender Participation in Rice Production in Abakaliki, Nigeria, Edeoghon, et al (2019). But little or no study has been conducted specifically on assessment of the participation of male and female farmers in rice production activities in Ardo-kola and Lau Local Government Area of Taraba State, Nigeria. This study, examine Gender participation of men and women farmers in rice production activities in Ardo-kola and Lau Local area of Taraba State. The specific objectives were:

- i. Compare the level of participation of male and female farmers in rice production activities in the study area.

Research hypothesis

- i. There is no significant difference between the participation of male

and female farmers in rice production

Empirical review

Rice, *Oryza Sativa*, is believed, to be associated with wet, humid climate, though it is not a tropical plant. It is probably a descendant of wild grass that was most likely cultivated in the foothills of the far Eastern Himalayas. Another school of thought believes that the rice plant may have originated in southern India, then spread to the north of the country and then onwards to China. It then arrived in Korea, the Philippines (about 2000 B. C.) and then Japan and Indonesia (about 1000 B. C.). When Alexander the Great invaded India in 327 B. C., it is believed that he took rice back to Greece. Another school of thought believes that the Wild rice, from which the crop was developed, may have its native range in Australia. Chinese legends attribute the domestication of rice to Shennong, the legendary emperor of China and inventor of Chinese agriculture. Genetic evidence has shown that rice originates from a single domestication 8,200–13,500 years ago in the Pearl River valley region of China. Previously, archaeological evidence had suggested that rice was domesticated in the Yangtze River valley region in China, according to the data of FAOSTAT, (2013).

In 2003, Korean archaeologists claimed to have discovered the world's oldest domesticated rice. Their 15,000-year-old age challenges the accepted view that rice cultivation originated in China about 12,000 years ago. These findings were received by academia with strong skepticism, and the results and their publicizing has been cited as

being driven by a combination of nationalist and regional interests. In 2011, a combined effort by the Stanford University, New York University, Washington University in St. Louis, and Purdue University has provided the strongest evidence yet that there is only one single origin of domesticated rice, in the Yangtze Valley of China (<https://en.wikipedia.org/wiki/Rice>). From East Asia, rice was spread to Southeast and South Asia. Rice was introduced to Europe through Western Asia, and to the Americas through European colonization. Arab travelers took it to Egypt, Morocco and Spain and that is how it travelled all across Europe. Portugal and Netherlands took rice to their colonies in West Africa and then it travelled to America through the 'Columbian Exchange' of natural resources. But as is traditionally known, rice is a slow starter and this is also true to the fact that it took close to two centuries after the voyages of Columbus for rice to take root in the Americas. Thereafter the journey of rice continues with the Moors taking it to Spain in 700 A. D. and then the Spanish brought rice to South America at the beginning of 17th century. The journey of rice around the world has been slow, but once it took root it stayed and became a major agricultural and economic product for the people. In the Indian sub-continent, more than a quarter of the cultivated land is given to rice (20011-12). It is a very essential part of the daily meal in the southern and eastern parts of India.

In the northern and central parts of the subcontinent, where wheat is frequently eaten, rice

Participation of Gender in Agriculture

Uzokwe, Ofuoku & Dafe (2017) in their research on Male and Female Participation in Selected Agricultural Development Programmes in Edo state Nigeria indicate that 39.24% of the male participated up to implementation stage (stage 3) of FADAMA III project, whereas only 8.93% of the females got to the same stage. A higher percentage (75%) of the female participants got to the stage 4 (evaluation) while 32.91% of the male participant got to stage 4. These shows that female participate in agricultural activities than their male counterpart. Edeghon, Iyilade & Nwachukwu, (2019) in their research on Assessment of Gender Participation in Rice Production in Abakaliki, Nigeria shows that high proportion of women participate more in land clearing, weeding, harvesting, threshing, winnowing/blowing and cleaning than their male counterpart. They further explained that these operations are dominated by women. This may be as a result of the ease of operation or the meticulousity of the task. Men are generally known to have little patience and are quick in actions which make them unsuitable for care-intensive operations. They further stressed that Male and female rice farmers participated equally in parboiling, dehusking, packaging, storage, transportation and marketing. The study reveals further that high proportion of men participates in tilling which is a very tedious exercise. Hills and Vigneri (2011), Reported that, men engage in more physically challenging work such as tilling and tree felling and women perform the less physically demanding work such as weeding and harvesting. Women in Tanzania take charge of

weeding, harvesting, processing, and storing food crops; they also contribute significantly to these tasks for cash crops, though men tend to help more with agricultural task for cash crops (Ellis, 2007).

Gender differences become clearer when looking at women's workloads. It is estimated that women provide 85 to 90 percent of the time spent on household food processing and preparation across a wide range of countries (Fontana and Natalia, 2008; Acharya and Bennett, 1982; Wrangham, 2009). Women are also usually responsible for child care and household chores. Depending on the household structure and size, these tasks may be extremely time intensive. Time-allocation studies have shown that women work significantly more than men if care giving is included in the calculations. Fontana and Natali (2008) find a marked gender bias in most unpaid work in Tanzania. Women, and in particular women from low-income groups and living in areas with limited facilities, spend long hours on water and fuel collection, food preparation and other domestic and child care activities to compensate for poor infrastructure. Malmberg (1994) study of household surveys from Ghana, Tanzania and Zambia, shows that women (and daughters) are responsible for about 65 percent of all transport activities in rural households, including travel for firewood, water and transport to the grinding mill.

Due to the gender-specific assignment of tasks, any changes affecting the family or the environment often have different implications for men and women. HIV/AIDS, for example, has caused a significant increase in the time needed to care for sick family members or the orphaned children of relatives (Addati and

Cassirer, 2008). Deforestation leads women to collect firewood from increasingly further distances from the homestead (Kumar and Hotchkiss 1988, Nankhuni 2004). Fontana and Natali (2008) calculate that time-savings from unpaid-work reducing infrastructure for water collection and food preparation as equivalent to 466 thousand and 4,590 thousand full-time jobs, respectively.

Theoretical review

Gender Symbolism (GS)

This study subscribed to the theory of Gender Symbolism. This theory starts with the perspective of scholars like Herbert Mead (1863- 1931) and others (Haralambos and Holborn 2000; Connell 2002; Heath 2003) who stated that humans are symbol- using beings. For all the symbols that are known to them, humans have a tendency to assign meanings to each one of them. The “gender” in the gender symbolism is simply to appreciate the fact the men and women have differences in the way they define and assign meanings to these symbols. (Gherardi 1995), explained the principals of the symbolism further that there is nothing that does not matter. Everything expresses something and everything is meaningful. That no form of reality is independent: everything stands in relation to something else. In other words, everything has got a meaning. Therefore, Gender Symbolism refers to how gendered meaning and value are assigned to everything in the world, but in this case the participation of male and females in rice production activities. It is from the different positions and perspectives that each user holds that meanings are defined and assigned. Differences in experiences based on the

positions held usually tend to create differences in meaning. With each perspective, individuals create meaning and this is the process of Gender Symbolism. Gender symbolism and standpoint theory are related in the sense that meanings are derived from the experiences a situation. In terms assigning meaning to things, male and female have their different way they psychologically feel towards participation in rice production activities. Male and Female farmers in the community for example will assign different meanings to their participation to rice production activities, some will feel is a men thing, while others will think is men work vice-versal. Therefore, in seeking to understand the differences between Him and Her in participation in rice production activities. This theory best explained the scenario that exist between male and female in their participation to rice production activities.

Analytical review

It is one of the most popular statistical techniques used to test whether mean difference between two groups is statistically significant. Null hypothesis stated that both means are statistically equal, whereas alternative hypothesis stated that both means are not statistically equal i.e., they are statistically different to each other. T test are three types i.e., one sample t test, independent samples t test, and paired samples t test. Independent samples t test. The independent t test, also called unpaired t test, is an inferential statistical test that determines whether there is a statistically significant difference between the means in two unrelated (independent) groups.

$$i.t = \frac{\bar{X}_1 - \bar{X}_2}{\sigma_{\bar{X}_1 - \bar{X}_2}} = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\left(\frac{\sum X_1^2 + \sum X_2^2}{n_1 + n_2 - 2}\right) \left(\frac{1}{n_1} + \frac{1}{n_2}\right)}}$$

$\sigma X_1 - X_2$ = Standard error of the difference

between the 2 mean

n_1 = Number of cases in group 1

n_2 = Number of cases in group 2

$\sum X_1^2$ = sum of squared deviation score in group

$\sum X_2^2$ = Sum of squared deviation score in group 2

$X_1 - X_2$ = Observed difference between the
2 mean

df = $n_1 + n_2 - 2$ (Degree of freedom)

METHODOLOGY

The Study Area

The study was conducted in Lau Local Government Area of Taraba State. Lau Local Government was created in 1991. It shares border to the North with river Benue and Karim Lamido Local Government, Yorro Local Government to the South East and Jalingo to the South. It also shares boundary with the neighboring Local Government of Numan, Demsa, and Mayo Belwa all in Adamawa State. Lau Local Government has a land mass of 135.89m² and a projected population of 3,066,834 (National Population Commission Census, 2016). Generally, the climate is favorable with the soil consisting of sandy, loamy and clay features thereby making it very suitable for cultivation of many types of crops such as rice, yam, sugarcane, maize, guinea corn millet, groundnut etc.

Lau

Local Government consist of ethnic and tribal setting which include Hausa, Shomo, Fulani, Yandang, Mumuye, Jenjo, Kunini and Bandawa. Most are farmers with others mostly engaged in fishing, hunting, trading, cattle rearing and blacksmithing. Apart from these agricultural unique, diverse and cultural features, Lau Local Government is also a home to various mineral endowments such as lead, ore, limestone etc.

Rice farmers in Lau, Taraba State of Nigeria constituted the population of this study. A multi-stage random sampling procedure was employed for selecting the respondents. The first stage involved purposive selection of two Local Government Areas out of the six Local Government Areas, in Northern zone namely: Ardo-kola Jalingo, Karim-Lamido, Lau, Yorro and Zing as categorized by TADP Zone. In that regard, Ardo-kola and Lau was selected because of their relevance in rice production in the Zone. In the second stage three settlements was purposively selected from each of the two (2) Local Government Areas. In Ardo-Kola LGA, Mayo-Renewo, Runde and Yelwa-tau was selected while in Lau, Gari-dogo, Lau town and Lushi was selected. Finally, a sample of rice producers were drawn in proportion to the number of rice farmers from each of the six (6) settlements, giving a total sample size of 100 respondents but only 99 questionnaires were duly completed by the rice farmers. Below is the map showing the study area.

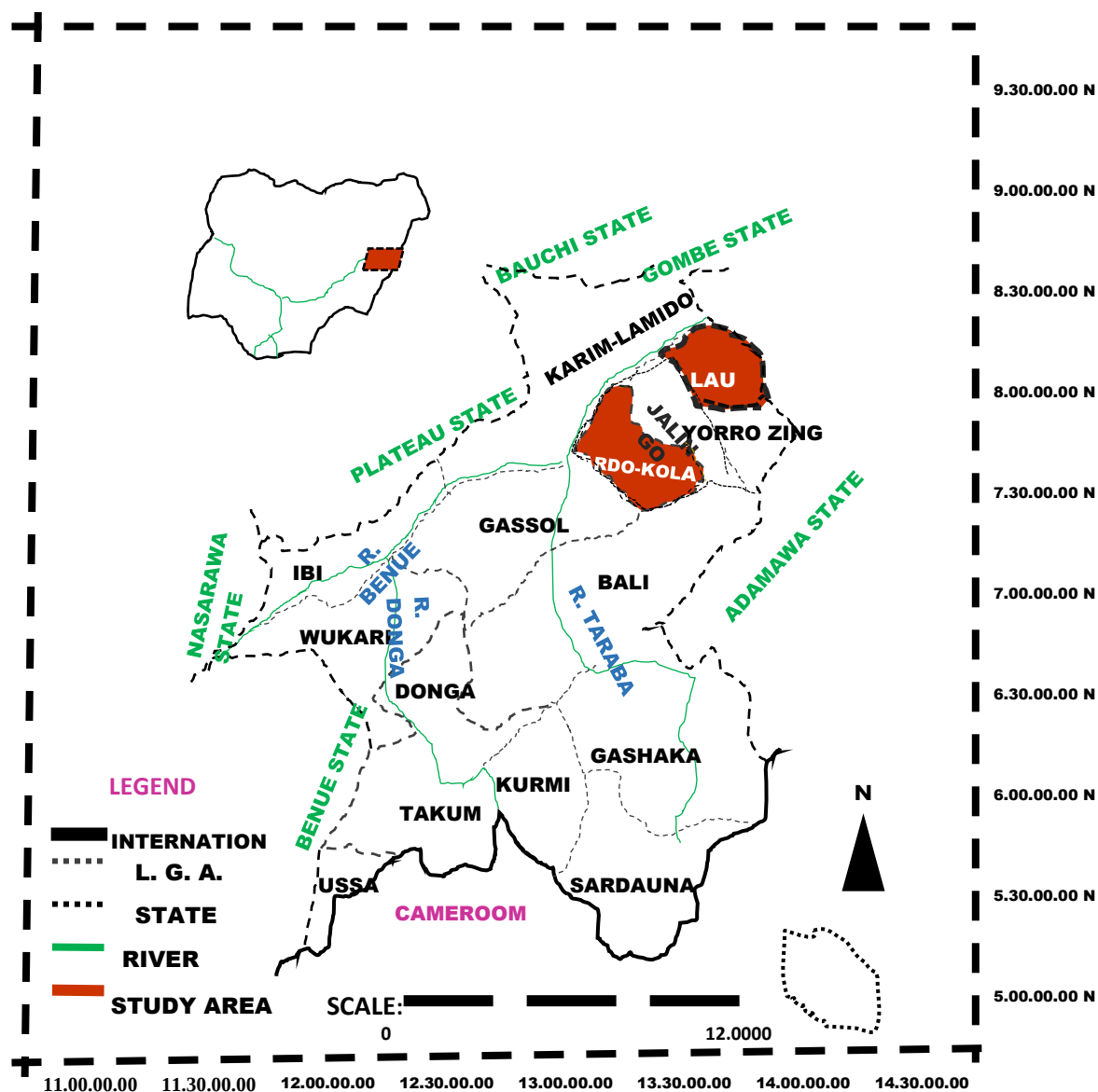


Fig1: Map of Taraba State Showing the Study Area

Result and Discussion

The Level of Participation between Male and Female Farmers in Rice Production

Table 1 showed that majority of the women 70% were involved in marketing while only about 47% of the men were involved in marketing. This could be because of the level of marketing qualities that is mostly dominant among women. The result also showed that 45% of the female are involved in transportation activities while about 67.7% of the male participated in transportation activities. This result indicated that the male were more involved in the transportation activities than their female counterpart. This could be due to the laborious nature of the transportation activities. About 56.1% of the females were involved in drying while only about 23% of the males participated in the drying. This showed that females were more involved in drying activities than the males. This could be due to cultural view which regards drying as females' job.

The result further showed that, 37.3% of the female were involved in storage activities while majority of the males 72.7% participated in storage activities more than their female counterpart. The result also indicated that 38% of the female were involved in packaging while 69.7% of the males were involved in the packaging. The result showed that males were more involved in the packaging activities than the females, this could be because packaging is seen to be a strenuous job is for that reason is likely to be more carried out by males than females. About 69.2% of the females were involved in parboiling of rice while about 33% of the males were involved in parboiling. The result

showed that the females were more involved in parboiling of rice than the males. This could be because parboiling is mostly seen as a domestic activity that is usually carried out by women. About 21% of the females were involved in tilling while majority 73.1% of the males were involved in the tilling. This showed that the males were more involved in tilling activities than the females. For dehusking majority 77.7% of the males were involved than their female's counterpart with about 19.2%. About 42% of the females were involved in clearing while 55.2% of the males were involved in land clearing. This indicated that the males were more involved in land clearing than females. The result indicated that 79.1% of the males were involved threshing while 29.3% of the females were involved in threshing. For harvesting about 33% of the females were involved, whereas 77.7% of the females were involved in harvesting. The result showed that males were more involved in harvesting than females' counterpart, this could be due to the tasking nature of the harvesting activities. For weeding majority 89.1% of the females were involved with about 28.3% males. Lastly for winnowing/blowing, 72.7% of the females were involved with about 45.4% of the males.

The results clearly indicated that there is a disparity in the participation between females and males in terms of marketing, drying, parboiling, cleaning, weeding, and winnowing/blowing the females participated more than their male's counterpart while in terms of transportation, storage, tilling dehusking, packaging, threshing, and harvesting the males were more involved than the females. This conforms to the findings of Hills and Vigneri (2011), which says that men engage in more physically challenging work such as tilling and tree felling and women perform the less physically demanding work such as: weeding and harvesting. Women in

Tanzania take charge of weeding, harvesting, processing, and storing food crops; they also contribute significantly to these tasks for cash

crops, though men tend to help more with agricultural task for cash.

Table 1: Participation by gender group in rice production

Variables	Female		Male	
	Freq	Percentage	Freq	(n=99) Percentage
Marketing	70	70.1	47	47.1
Transportation	45	45.4	67	67.7
Drying	56	56.1	23	23
Storage	37	37.3	72	72.7
Packaging	38	38	69	69.7
Parboiling	69	69.2	33	33
Tilling	21	21	73	73.1
Dehusking	19	19.0	77	77.7
Clearing	42	42	55	55.5
Threshing	29	29.31	79	79.1
Harvesting	33	33	77	77.7
Cleaning	89.	89.1	25	25.3
Weeding	87	87.2	28	28.3
Winnowing/blowing	72	72.7	45	45.4
TOTAL	779		565	

Source. Field Survey 2020

Multiple responses*

Hypothesis

Difference in the participation of male and female farmers in rice production. Result from table 2 shows that the difference in participation of male and female farmers in rice production is not significant ($t = 0.03225$) with female ($\bar{X} = 10.9$ and male ($\bar{X} = 11$). The result indicated that, the male farmers had slightly higher means differences ($M = 0.1$) in terms of participation in rice production activities than the females. The findings

agreed with the result mentioned previously that males participated in Activities like transportation, storage, tilling dehusking, packaging, threshing, and harvesting more than their female counterpart. This also is inline with that of the findings of Afolami et al. (2012) which says that majority of rice production in Ekiti (90%) and Ogun (85%) indicated that males had high dominances in terms of rice production activities.

Table 2: Difference in the participation of male and female farmers in rice production

Sex	N	Participation score (n=99)		T
		Mean	Difference	
Male	56	11	0.1	0.03225
Female	43	10.9		

*Critical value 1.96

CONCLUSION

The result of male and female participation shows that men participate more in rice activities than their female counterpart in the entire specific objective which were used. The hypothesis tested show insignificant between male and female participation, although based on their mean differences the men had mean differences between their female counterpart with mean differences of 1.0 The result finally shows that the two samples belong to the same population.

RECOMMENDATIONS

Based on the major findings of this study the following recommendations are hereby made:

- i. Female education should be encouraged by government. This will help to increase the number of women participating in new findings in agriculture'
- ii. Married men should be sensitized on how to release their wives to participate in rice processing, and other farming activities that will go a long way to improve the income of their wives.

REFERENCES

Aboki, E. (2007). Comparative Analysis of the Productivity of improved and Local Cassava Varieties in Selected

Local Government Areas of Taraba State. Unpublished M.Sc. Thesis

Acharya, M. & Bennett, L. (1982). Women and the Subsistence Sector: Economic Participation and Household Decisionmaking in Nepal. World Bank Staff Working Papers, Number 526.

Acharya, M. and L. Bennett. 1982. Women and the Subsistence Sector: Economic Participation and Household Decision making in Nepal. World Bank Staff Working Papers, Number 526.

Addati, L. & Cassirer, N. (2008). Equal sharing of responsibilities between women and men, including care giving in the context of HIV/AIDS. Paper prepared for the Expert Group meeting on the equal sharing of responsibilities between women and men, including care giving in the context of HIV/AIDS, organized by the United Nations Division for the Advancement of Women, Geneva.

Addati, L. and N. Cassirer. 2008. Equal sharing of responsibilities between women and men, including care giving in the context of HIV/AIDS. Paper prepared for the Expert Group meeting on the equal sharing of responsibilities between women and men, including care giving in the context of HIV/AIDS, organized by the United Nations Division for the Advancement of Women, Geneva

- Afolami C., Abiodun E.O., Munre A, and Okanlade L.A(2012): Socioeconomic Analysis of Rice Farmers and Effects of Group Formation on Rice Production in Ekiti and Ogun States of South-West Nigeria
- Ayoola, J.B., Dangbegnon C., Daudu C.K., Mando A., Kudi T.M., Amapu I.Y., Adesun J.O. and Ezui K.S. (2011), "Socio-Economic Factors Influencing Rice Production Among Male and Female Farmers in Northern Guinea Savanna Nigeria: Lessons for Promoting Equity in Action Research", Pp 1011-1013.
- Blackden, P. and Rwebangira, O. (2004). Case Studies of Women in Tanzanian Agribusiness – Wilson Centre. <http://www.wilsoncenter.org/sites/files> Accessed 29/05/19
- Connell, R.W (2002).Gender.Cambridge, polity press.
- Edeoghon, C.O. Iyilade, A.O.Nwachukwu, C.G.(2019). Assessment of Gender Participation in Rice Production in Abakaliki, Nigeria' Journal of Biology, Agriculture and Healthcare www.iiste.org ISSN 2224-3208 (Paper) ISSN 2225-093X (Online) DOI: 10.7176/JBAH Vol.9, No.12, 2019.
- Edeoghon, C.O. Iyilade, A.O.Nwachukwu, C.G.(2019). Assessment of Gender Participation in Rice Production in Abakaliki, Nigeria' Journal of Biology, Agriculture and Healthcare www.iiste.org ISSN 2224-3208 (Paper) ISSN 2225-093X (Online) DOI: 10.7176/JBAH Vol.9, No.12, 2019
- Edeoghon, C.O. 1 Iyilade, A.O.2 Nwachukwu, C.G.3(2019). Assessment of Gender Participation in Rice Production in Abakaliki, Nigeria. Journal of Biology, Agriculture and Healthcare. Vol.9, No.12
- Ellis, A. (2007), "Gender and Economic Growth in Tanzania", The World Bank: Washington, D.C.
- Ellis, A. (2007). "Gender and Economic Growth in Tanzania", The World Bank: Washington, D.C.
- FAO. (2013). A tool for gender sensitive agriculture and rural development policy and programme formulation: Guidelines for ministries of Agriculture and FAO. Rome, Food and Agriculture Organization of the United Nations.
- Faostat. Faostat.fao.org (October 23, 2014). Retrieved on September 4, 2015.Science volume 6, number 2,2014 ISSN: 2277-0062
- Fontana, M. & Natali, L. (2008). Gendered patterns of time use in Tanzania: Public investment in infrastructure can help? Paper prepared for the IFPRI Project on 'Evaluating the Long-Term Impact of Gender-focused Policy Interventions.
- Fontana, M. & Natali, L. (2008). Gendered patterns of time use in Tanzania: Public investment in infrastructure can help? Paper prepared for the IFPRI Project on 'Evaluating the Long-Term Impact of Gender-focused Policy Interventions.
- Franklin, S. (2007). "Gender Inequality in Nigeria. <http://www.tigweb.org> Assessed 30/05/19.
- Jain, D. (1996). "Valuing work: Time as a

- measure." *Economic and Political Weekly* 31(43): WS46–57. (pp. 48-49)
- Health, I. (2003) *Measuring and value: the "how and why" of life*. Volume, 5pgs Dol:
- Hill, R. V. & Vigneri, M. (2011). *Mainstreaming gender sensitivity in cash crop market supply chains*. ESA Working Paper No. 11-08. Food and Agriculture Organization, Rome. <http://www.fao.org/publications/sofa/en/>. Himonga, C. N. & Munachonga, M. L. (1991). *Rural Women's Access*
- Hill, R. V. & Vigneri, M. (2011). *Mainstreaming gender sensitivity in cash crop market supply chains*. ESA Working Paper No. 11-08. Food and Agriculture Organization, Rome. <http://www.fao.org/publications/sofa/en/>. Himonga, C. N. & Munachonga, M. L. (1991). *Rural Women's Access*
- Jain, D. 1996. "Valuing work: Time as a measure." *Economic and Political Weekly* 31(43): WS46–57. (pp. 48-49)
- Jaykaran. How to select appropriate statistical test?. *J Pharm Negative*
- Jones, Monty P., 1995. *The rice plant and its environment*. WARDA Training Guide 2. WARDA, Bouaké, pp. 27-30.
- Kebbeh, A., Haefele, M. S. and Fagade, S.O. (2003), "Challenges and Opportunity for Improving Irrigated Rice Productivity in Nigeria", Abidjan: WARDA.
- Kumar S.K. & Hotchkiss, D. (1988). *Consequences of deforestation for women's time allocation, agricultural production, and nutrition in hill areas of Nepal*. Research Report 69, International Food Policy Research Institute: Washington, D.C. Maddox, G. (2006), "Sub-Saharan Africa: An Environment History", ABC-CLIO. P. 267. ISBN. 185109555
- Kumar, S.K. 1994. *Adoption of hybrid maize in Zambia: effects on gender roles, food consumption, and nutrition*, Research Report No. 100, International Food Policy Research Institute, Washington, D.C
- Malmberg-Calvo, C. (1994). *Case study on the role of women in rural transport: access of women to domestic facilities*. SSATP Working Paper No. 12, Washington, DC, World Bank.
- Meek C (1981). *A Sudanese Kingdom*, London: Kegan, Paul, Trench, Trubner and Co.
- Nankhuni, F. (2004). *Environmental Degradation, Resource Scarcity and Children's Welfare in Malawi: School Attendance, School Progress, and Children's Health*. In *Agricultural Economics and Demography*. University Park: The Pennsylvania State University.
- Nankhuni, F. 2004. *Environmental Degradation, Resource Scarcity and Children's Welfare in Malawi: School Attendance, School Progress, and Children's Health*. In *Agricultural Economics and Demography*. University Park: The Pennsylvania State University

- National Population Commission Federal Republic of Nigeria, (2016). Official Gazette printed and published by this Federal Government Printer
- NBS (2007). "National Bureau of Statistic: Agriculture Survey Report 1994-2006. Produced under the Auspices the Economic Reforms and Government Project (ERGP)", Pp. 60-71
- Ngur N (1987). Women and development in crop and livestock production in Nigeria. Paper presented at the seminar on Women Studies, University of Ibadan, Nigeria. pp. 4-6 November 1987
- Obaniyi, K.S., Akangbe, J.A., Matanmi, B.M, & Adesiji, G.B. (2014). Factors motivating incentives of farmers in rice Production training programmes (A case study of Olam/USAID/ADP/First Bank Programme).Journal of International Cooperation Studies,Vol.16, No.3 (2009.3) 105.WebPub Journal of Agricultural Research Vol. 2(5), pp. 74-81, May 2014 Available online at <http://www.researchwebpub.org/wjar> ISSN 2311-9926
- Okunlola, O., Oludare, O., Akinwalere, B.(2011). Adoption of new technologies by fish farmers in Akure, Ondostate, Nigeria Journal of Agricultural Technology 7(6):1539-1548
- Oladejo, J. A., S. O. Olawuyi, and T. D. Anjorin (2011). "Analysis of Women Participation in Agricultural Production in Egbedore Local Government Area of Osun State, Nigeria". International Journal of Agricultural Economics and Rural Development 4(1): 1-11.Results 2010;1:61-3.
- Simmons EB (1973). The economics of consumer-oriented food processing technologies in FAO. Rev. Agric. Dev., 75(13): 40-41.
- Undaram KR, Dwivedi SN, Sreenivas V. Medical Statistics: Principles and Methods. 2nd ed. New Delhi: Wolters Kluwer India; 2014
- Uzokwe, U.N, Ofuoku,A.U & Dafe, O.D (2017). Male and Female Participation in Selected Agricultural Development Programmes in Edo state Journal of Agricultural Extension.Vol. 21(1) Febuary, 2017 ISSN(e): 24086851, ISSN(print), 1119944X
- Uzokwe, U.N, Ofuoku,A.U & Dafe, O.D (2017). Male and Female Participation in Selected Agricultural Development Programmes in Edo state Journal of Agricultural Extension.Vol. 21(1) Febuary, 2017 ISSN(e): 24086851, ISSN(print), 1119944X
- Whitley E, Ball J. Statistics review 5: Comparison of means. Crit Care
- Wrangham, R.T. (2009). Catching Fire: How Cooking Made Us Human. Basic Books, New York.
- Wrangham, R.T. 2009. Catching Fire: How Cooking Made Us Human. Basic Books, New York.