



## OWC 2020 Paper Submission - Science Forum

*Topic 3 - Transition towards organic and sustainable food systems*

OWC2020-SCI-966

### COMPARATIVE STUDY OF ORGANIC FARMING PRACTICES AMONGST RURAL HOUSEHOLD LIVESTOCK, CROP AND FISH FARMERS: THE CASE OF SOUTH-SOUTH, NIGERIA

Charity Atoma<sup>1</sup>, Ndidi Anyoha<sup>2</sup>, Chikaire Ubochioma<sup>2</sup>, Sidney Uyoyuo<sup>3</sup>

<sup>1</sup>School of Agriculture, Delta State Polytechnic, Ozoro, <sup>2</sup>Department of Agric. Extension, Fed. University of Technology,

<sup>3</sup>Min. of Agric & Nat Res., Min of Agric & Nat Res., Owerri, Nigeria

**Preferred Presentation Method:** Oral or poster presentation

**Full Paper Publication:** Yes

**Abstract:** Comparative analysis of organic farming practices amongst farmers in South–South Nigeria was carried out. Multistage random selection technique was employed to select rural households engaged in fish, livestock and crop production. Organic farming practices amongst crop farmers were the use of farmyard manure, intercropping, mulching and spot bush burning. Among livestock farmers were access to fresh drinking water and adequate feeding. Out of the fourteen practices outlined, fish farmers engaged in the use of three of such practices - eco-friendly design, site is far from polluting substances and pond protection from predators. There was significant difference in the farmers' level of use of organic farming practices based on their states of origin (Akwa-Ibom, Bayelsa and Delta). It was concluded that farmers' in Akwa-Ibom state make use of organic farming practices best, followed by Bayelsa state and the least is Delta state.

**Introduction:** Considering the benefits of Organic farming, Vaarst (2010) encouraged decision makers and development practitioners in the world to take a new look at this promising production system. Challenges of environmental degradation, climate change and health dangers associated with continuous practice of conventional farming call for the understanding of the status of organic farming practices in Nigeria. Literature on organic farming activities among farmers exist in various countries. For example Uganda has about 200,000 certified organic farmers (Tumnushabe et al. 2006). This study will increase the resource base for organic farming literature in Nigeria. The study focused on the status of organic farming practices amongst rural households' livestock, crop and fish farmer in South -South, Nigeria and also determined whether there is difference in organic farming practices amongst the different states in the study area.

**Material and methods:** Three prominent agricultural enterprises of fishery, livestock and crop were purposively sampled for the study. This was based on their dominance in agricultural production system of the people. The population therefore comprised rural households engaged in fish, livestock and crop production. Multistage random selection technique was

employed. The first stage was the random selection of three states out of the six states that make up South-south Nigeria. The states sampled were Bayelsa, Delta and Akwa-Ibom. One-third (33.3%) of the number of agricultural zones in the states sampled were selected. Delta state is divided into three Agricultural zones- Delta North, Delta South and Delta Central out of which Delta central was selected. Bayelsa state is also classified into three Agricultural zones- Brass, Yenagoa and Sagbama out of which Brass zone was sampled. Akwa-Ibom is divided into six Agricultural zones- Abak, Eket, Etinan, Ikot Ekpene, Oron and Uyo zones. Two zones Uyo and Ikot Ekpene were sampled in Akwa- Ibom state. In each zone, three blocks were randomly selected for Delta and Bayelsa while two blocks from each of the two zones sampled in Akwa Ibom state giving a total of ten blocks. Two circles were further sampled from each selected block in Delta and Bayelsa. Twelve circles were thus selected from the two states. Two cells were sampled from each block in Akwa-Ibom. Eight circles were sampled in the state. The total number of circles used was twenty. Two rural communities were then selected from each circle giving a total of forty communities for Delta, Bayelsa and Akwa- Ibom states. Lastly, four farmers (Household heads) for crop, livestock and fish each were randomly sampled from the forty communities giving a total of four hundred and eighty farmers. The lists of farmers were gotten from the Zonal Managers in charge of each zone. Data obtained were analyzed using descriptive statistics. The level of use of organic farming practices was analyzed with percentages and mean.. Items with mean scores of 2.5 and above were considered as those organic farming practices used while mean scores below 2.5 were considered otherwise. Ordinary least square multiple regression (OLS), and Analysis of variance (ANOVA) were used.

**Results:** Organic farming practices amongst crop farmers included the use of farmyard manure, intercropping, mulching and spot bush burning. The organic farming practices among livestock farmers were access to fresh drinking water and adequate feeding. Out of the fourteen (14) Organic fish farming practices outlined, fish farmers engaged in the use of three of such practices. Farmers agreed to the use of eco-friendly design, site is far from polluting substances and pond protection from predators. Since the p- value of 0.000 is less than the level of significance 0.05, we therefore rejected the null hypothesis and accepted the alternative hypothesis that states that there exist significant differences in the farmers' level of use of organic farming practices based on their states of origin. Since there is existence of significant differences, a post hoc multiple comparison tests using the Scheffe model was carried out to determine actually where the differences lied. From Scheffe Model, it was observed that significant differences existed between Delta state, Bayelsa and Akwa-Ibom state.

*Table 1: Analysis of Variance (ANOVA) of the use of organic farming practices based on their state of origin.*

Sources of variation	Sum of squares	df	Mean square error	$F_{ratio}$	Sig. (p-value)
Between groups	18,096.005	2	9048.002	36.54	0.000
Within groups	113,902.630	40	247.614	1	
Total	131,998.635	42			

The level of significance: 0.05

Decision Rule: Reject  $H_0$  if the P (probability) value is less than 0.05 (level of significance).

**Discussion:** The result shows that organic livestock production practices' in South-south Nigeria is low .That is, out of twenty outlined practices, only two (10%) had mean score of 2.50 (Discriminating index) and above. This is very low compared to countries like India with 75 percent of the farmers in organic farming (Prabir & Mahesh 2012). Since the p-value is 0.000 from Table 1, it implies that there exist significant difference between farmers' use of organic farming practices in Delta state and Bayelsa state and the difference is 9.17182. It can therefore be inferred that Bayelsa state is better than Delta state in the use of organic farming practices. Also, there exist significant difference between farmers' use of organic farming practices in Bayelsa state and Akwa-Ibom state and the difference is 5.79898. It can be inferred that Akwa- Ibom state is better than Bayelsa state in the use of organic farming practices.

**References:** Helga, W., & Yussefi, M. (Eds). (2006). *The world of organic agriculture, statistics and emerging trend. International Federation of Organic Agriculture Movement. (IFOAM) Bonn Germany and Research Institute of Organic Agriculture FiBL, Frick, Switzerland* pp 211.

Prabir, K.R., & Mahesh, C. (2012). Farmers existing livestock production practices in relation to organic production standards; An Indian study. Paper presented in national workshop on Organic Animal Husbandry Standards Ivri Izanagar 26-27 November 2012

Tumnushabe, G. W., Naluwairo, R., & Mugenyi, O. (2006). The status of organic agriculture production and Trade in Uganda: *Background study to an integrated assessment of the sub sector.* Advocates Coalition for Development Environment, Kampala, Uganda pp 20.

Vaarst, M, (2010). Organic farming as a development strategy; who are interested and who are not. *Journal of sustainable Development Vol 3, no 1.*

**Disclosure of Interest:** None Declared

**Keywords:** fish farmers, livestock farmers, organic, rural households