

A COMPARATIVE STUDY OF SELECTED SMALL SCALE IRRIGATION (SSI) SCHEMES IN AKWA IBOM STATE, NIGERIA (II)

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ABSTRACT

This study was conducted to determine what variations exist in the measured attributes of farmers from different selected SSI schemes. Mechanization survey data collected between October 2005 and March 2007 from 12 SSI schemes with the aid of structured interview were statistically compared. The result showed considerable degree for variations in the socio-economic, agronomic and technological resources among 551 operators in the same ecological, cultural and linguistic zones of Akwa Ibom State of Nigeria. Similar data collected between October 2007 and March 2008 were examined to quantify the differences in the attributes of literate and illiterate farmers. It was observed that the literate farmers have higher awareness, good management and willingness indices than illiterate farmers. Among others, education and training was recommended as a result of the important role they play in the efforts to mechanize Traditional Irrigation Practice (TIP) in Small Scale Irrigation in developing countries.

Keywords: *Small scale irrigation, mechanization, vegetable production literacy.*

INTRODUCTION

The process of agricultural modernization involves progressive transformations in agricultural technology. The effectiveness of an agricultural modernization or development strategy depends to a large extent on the degree of integration of the modern concepts and techniques being proposed with the prevailing socio-economic factors in the area of interest. Hence, a sound knowledge and appreciation of the socio-economic resource base of an area is a fundamental requirement for a successful application of new technological inputs into the agricultural function.

Many factors combine in a complex but fascinating and dynamic manner to define the socio-economic resource base or constraints of an area. Attitude to work, cultural practices, traditionalism, land tenure, size of farm land, fragmentation of farm land, labour, capital and rural infrastructural facilities are some of the more general factors limiting progress of agricultural development (Schultz, 1964, Carpenter & Ahmed, 1970, Innes, Iton and Hills, 1972).

Equally complex is the process in accepting a new technology. This process, which consists of a sequence of thought and actions, may be divided into five stages, namely: awareness, interest, evaluation, trial and adoption (Iowa State University, 1962). In the part one of this study, a quantitative approach for characterizing the attributes of farmers as regards the mechanization of Traditional Irrigation Practices (TIP) in Small Scale Irrigation (SSI) for dry season vegetables production (Udom, 2009) was presented. Three indices were introduced to quantify the awareness, good management or cultural practices and willingness of the farmers in Akwa Ibom State of Nigeria.

The main objective of this study is to determine what variations exist in the measured attributes of farmers from different selected SSI schemes. Variations among farmers in the same scheme were determined. Since education and training play an important role in the process of accepting technological innovations; one of the secondary objectives of this article was to compare the attribute of literate and illiterate farmers in the selected villages.

METHODOLOGY

Two surveys were conducted between 2005 and 2007 to collect data on the problems and prospects of mechanizing Traditional Irrigation Practices for dry season vegetable production in rural areas of Nigeria. The results were then presented as averages for each of the two surveys conducted. In this study, 10SSI schemes in all the 3 senatorial districts of the Akwa Ibom State were selected from the 30 villages

visited during the first and second survey using the systematic sampling technique. The method employed in the collection of data was the structured interview schedule. The average values of the attributes quantified determine variations among farmers in a scheme. Two schemes were selected from the schemes previously selected. Analysis of the 2008 data was limited to an examination of differences in the attributes of literate and illiterate farmers. The obtained data were statistically analysed with the of frequency count and simple percentage.

RESULTS AND DISSCUSSION

Table 1 Comparison of attribute in Selected SSI Scheme

Name of scheme	Number of respondents	Awareness Index (%)	Good mgt. Index (%)	Willingness Index (%)	Farm size (ha)	Degree of fragmentation %
Ikot Osurua	26	15	16	87	2.1	67
Ibagwa	15	25	15	73	-	-
Afaha Obong	30	3	11	13	2.4	94
Etebi	29	11	39	34	1.8	83
Uya Oron	29	38	34	75	1.9	67
Ikot Edoh	26	21	7	92	1.4	80
Etinan	30	28	38	71	1.4	75
Afaha Offiong	18	37	50	74	2.2	93
Obot Idim	30	35	41	66	1.4	55
Ayadehe	24	22	40	53	1.6	92
Average	27	26	29	65	1.6	81

Source: Fieldwork, 2005 and 2007

Table 2: Variation within two selected SSI schemes

Farm no	Ata Obio Akpa		Obot Idim	
	Size of farm (ha)	Number of farms	Size of farm (ha)	Number of farms
1.	0.8	4	1.0	2
2.	1.2	2	0.8	2
3.	1.4	3	1.7	1
4.	0.6	2	0.7	1
5.	0.6	4	1.4	1
6.	1.6	3	1.9	2
7.	0.8	3	0.9	5
8.	0.6	3	0.9	3
9.	0.5	4	1.0	2
10.	0.7	2	1.2	3
Average	0.9	3	1.2	2.2

Source: Fieldwork, 2005 and 2007

Table 3: Comparison of Attributes of Literate and Illiterate farmers

Attribute	Ikot Osurua		Okorotte		Etinan		Average	
	Literate	Illiterate	Literate	Illiterate	Literate	Illiterate	Literate	Illiterate
Awareness Index (%)	82	23	80	11	83	38	82	24
Good Management Index (%)	37	20	44	28	42	23	44	24
Willingness Index (%)	99	87	98	90	96	85	98	87
Ratio of Farmers who engage in other businesses (%)	79	62	60	31	86	77	75	57
Number of resident dependents per family	6	6	8	8	6	7	7	7
Number of resident dependents engaged in active farming	1	2	1	2	2	1	1	2
Number of labourers hired per farm family	8	3	7	4	3	6	6	3
Number of farm unit owned per farm family	3	1	10	7	9	11	11	9
Size of largest farm unit (ha)	1.4	0.5	0.6	0.4	0.9	0.4	1.0	0.4

Source: Fieldwork, 2005 and 2007

The results obtained on table 1 showed that there were considerable degree of variations in the values computed for the awareness, good management, willingness indices, farm size and degree of farm fragmentation of the irrigation scheme selected for this comparative study. Table 2 also shows the highly significant variations in the values of the farm size and the number of land units owned by individual farmers in each of the two schemes selected for analysis. In Ata Obio Akpa scheme for instance, the size of the largest land unit holding operated by an individual farmer ranged from 0.5 to 1.4 hectares.

In the same scheme, the number of units operated by an individual farmer ranged from 2 to 4. These findings reflect the differences in the productive capability of the operators and are suggestive of the fact that successful SSI development must start with the existing farmers whose education and experience gives them the advantage of being able to easily imbibe and disseminate introduced gradual and manageable improvement that is farmers who are most likely to maximize the benefit derivable from the use of mechanization inputs in agriculture.

Furthermore, the substantial variations in the computed values found among and within the schemes would discourage over-generalization of the ecological, social, economic and technical factors, which are said to impede mechanization, TIP for dry season vegetable production in Nigeria. Rather, efforts should be made to identify areas and farmers with attributes relatively more favourable to mechanization of Traditional Irrigation Practice (TIP).

Table 3 gives a comparison of the values determined for literate and illiterate farmers. Literate farmers have higher awareness, good management and willingness indices than illiterate farmers. This result therefore re-emphasizes the importance of education as an essential instrument in modernizing and mechanizing TIP for vegetable production. Education here includes the popular dissemination of views and ideas, and the publicizing of the opportunities for and benefit of small-scale irrigation development (Underhill, 1990). However, literate farmers engage a larger number of hired labourers than illiterate farmers. This tendency may be due to the following: (1) Literate farmers engage more in other business activities like teaching. (2) Literate farmers have slightly greater number of farm holdings and (3) Literate farmers have slightly larger farm sizes.

CONCLUSION

Generalization of the socio-economic, ecological and agro-technical factors, which impede the mechanization of irrigation practices in Nigeria, is misleading. This is because, as found in this study, a great deal of substantial variations in such factors can exist within a country, within a State of a Country, within a Local Government Area (LGA) of a state, and even within any given scheme in a LGA of a state. This fact makes the concept of assistance to selected traditional irrigators very crucial in any program of SSI development in Nigeria. Literate farmers have higher awareness, good management and willingness indices than illiterate farmers. This finding highlights the important role education and training play in the efforts to mechanize Traditional Irrigation Practice (TIP) in Small Scale Irrigation in developing countries.

REFERENCES

- Carpenter, N. R. and Ahmed, M. M. A.** (1970). Socio-economic problems Encountered in Dry land Farming Development. Proceedings of an international conference on Mechanized dry land Farming, FAO. pp 202-219.
- Innes F. C., Iton. S. and Hills T. L.** (1972). Socio-economic Institutions. Plantations and Small Scale Agriculture. Proceedings of a Seminar on Resource Development in the Carribean. McGill University. Montreal Canada. pp 133-155.
- Iowa State University** (1962). *How farm people Accept New Ideas. Special Report, No. 15. Cooperative Extension Services.* Iowa: State University. Ames. Iowa.
- Udom, I. J.** (2009). Mechanization of Traditional Irrigation Practices for Dry Season Vegetable Production in Rural Areas of Nigeria: A qualitative analysis of the problems and prospects. *Journal of Environmental Issues and Agriculture in Developing Countries*, 1 (1 - 3), 50 - 63
- Underhill, H. W.** (1990). *Small Scale Irrigation in Africa in the Context of Rural Development.* United Kingdom: CranField Press.
- Schultz, T. W.** (1964). *Transforming traditional Agriculture.* New Haven: Yale University Press.