

Contribution of Children in Artisanal Fisheries to Households' Poverty Alleviation in Ondo State, Nigeria

*Fasina, O.O. and T. E. Mafimisebi

*Department of Agricultural Economics and Extension
The Federal University of Technology, Akure, Ondo State, Nigeria*

*E-mail of lead author: royalambfuta@gmail.com

E-mail of co-author: temafis@yahoo.com

Abstract

Despite the global clamour for the eradication of child labour in agriculture, children in developing countries continue to be prominent actors in the fisheries sector though their contribution is unrecorded in the national income accounts of many countries. The study examined the involvement of children in artisanal fisheries in Ondo State, Nigeria. Simple random sampling procedure was used to select 90 children aged 9-18 years who were involved in artisanal fishing activities. Descriptive statistics were used to present the data gathered for the study. Pearson Product Moment Correlation and the Chi-Square analysis were used to test the study hypotheses at the 0.05 level of significance. Respondents were mostly males (70%) with mean age of 15 ± 2 years. Fishing experience for two-thirds was over 7 years. Major economic activities engaged in by children were fishing (100.0%) and fish marketing (97.8%). All respondents fished more on rivers, lakes, creeks and canals with friends mostly in the mornings (70.0%) between 4-5am (43.3%). Mean daily catch per caput per day amounted in monetary terms to ₦317. Income increased significantly with age of children ($r = 0.27$, $p < 0.05$). Respondents' major constraint was lack of capital to purchase nets and boats of their own (97.8%). Sustainable involvement of children in artisanal fisheries can help alleviate poverty as the children remitted their incomes to their parents for food, school fees or other school needs. Children's capacity for production can be boosted through capacity building and greater access to fishing equipment and capital assets used in fishing. Scholarship programmes should be put in place to encourage children who do well at both school and fishing to further develop the quality of future manpower available for fishing in the coastal areas.

Keywords: Children, Involvement, Artisanal, Income, Sustainable

INTRODUCTION

Children's involvement in agriculture and fisheries sector have been observed and recorded as far back as the 1960s in Java [1]. However, documentation of children's contribution to these sectors in Nigeria as recorded by Ugalde [2] started in the late 70's. Involvement of children in livelihood activities of their households is prevalent in developing countries in general and Africa in particular as it is regarded as part of the socialization processes to ensure the sustainability of such livelihood activities. Though experts in developed countries consider children's involvement in income-generating activities as a form of child labour, it is gradually been agreed to, that not all child's work can be regarded as child labour [3]. Children continue to be an important source of labour for agriculture in majority of developing countries whose economies are agrarian [4]. An estimated ninety percent of economically active children in rural areas in developing countries are working in agriculture [3].

Nigeria, which accounts for about 40% of African population, has about 50% of her population consisting of children below 18 years of age and it is largely an agrarian country [5-7]. Agriculture is the largest sector of the economy, providing employment for a significant segment of the workforce and constituting the mainstay of her large rural community, which accounts for nearly two-thirds of the 140 million people [8]. The proportion of the gross domestic product (GDP) attributable to agriculture hovers between 30 - 40%, well ahead of mining and quarrying, as well as wholesale and retail trade, which are the other major contributors to the country's economy [9]. The principal components of Nigeria's agriculture are crops, livestock, fisheries and forestry (wildlife is subsumed under forestry). The crop sub sector is the most important as it contributes annually about 30 per cent of the total GDP and about 80 per cent of the agricultural GDP. According to Akande [9], land use pattern indicates that about 30.96 million hectares of land, constituting 34% of the country's land area is under arable crop cultivation while 11.66 million hectares (13%) constitute rivers, lakes and reservoirs. This, nevertheless, does not make other sub-sectors and in particular, the fisheries sub-sector, insignificant. This is because each component is important for the realization of the nation's overall food security goal. Since the early 1960s, the fisheries sub-sector has been contributing between 1.11-2.4% of the agricultural GDP or 0.66% of the total GDP with the artisanal fisheries sub-sector being predominant [10]. Nigeria earns appreciable foreign exchange from exportation of fisheries products derived mainly from artisanal fisheries. Between 1994 and 2000, Nigeria earned US\$56.0 million from the export of shrimps and prawns. This increased appreciably in 2005 to US\$65 million [11].

Artisanal fisheries is fishing carried out at subsistence level, by local people using locally dug out wooden canoes, which are usually not motorized while spears, traps, hooks, nets and other locally fabricated traditional gears characterize fishing at this level [12]. This sector accounts for more than 80% of fish production in Nigeria [13]. The role of children in traditional fisheries is increasingly making them a target group in fisheries development programmes and projects. They have been identified as producers, assistants to the adults, processors, traders and are therefore prominent in activities related to fisheries. The exclusive focus on the roles of the adults over the years has overshadowed the economic role of children in fishing communities [14]. Their presence, involvement and contribution have thus remained obscured, leading to relative neglect of the needs and interest of the children. In Nigeria, studies have been conducted on adults' involvement in fish production and processing and much is also known about quantities, type of fish caught and marketed, techniques used and growth of fleets [12,15-22]. There is however, a dearth of information on the contribution of children to the artisanal fisheries sub-sector in Nigeria as well as globally [23-24]. Therefore, based on the recognition of the contribution of children to artisanal fishery sub-sector, there is need to examine the involvement of children in artisanal fisheries so as to uncover pertinent areas of needs for which programmes would be developed to cater for their welfare and ensure sustainability of fishing activities.

The general objective of the study was to examine the involvement of children in artisanal fisheries vis a vis their contribution to households' poverty alleviation in Ondo State, Nigeria

The study specifically,

1. examined the personal characteristics of children involved in artisanal fisheries
2. examined artisanal fisheries activities in which children are involved
3. determined the level of involvement of children in artisanal fisheries
4. determined their economic contribution to their households and
5. identified constraints being faced by children involved in artisanal fisheries.

Hypotheses

The hypothesis tested in the study at the 0.05 level of significance (α) is

H_0 : There is no significant relationship between the personal characteristics of the children involved in artisanal fisheries and their economic contribution to their households.

METHODOLOGY

The study was carried out in the coastal wetland area of Ondo State, Nigeria. The area is largely a concentration of the mangrove and freshwater swamps. The state lies between latitudes 5°45' and 7°52'N and longitudes 4°20' and 6°5'E. Its land area is about 15,500 square kilometers. Ondo State is bounded in the east by Edo and Delta States, in the west by Ogun and Osun States, in the north by Ekiti and Kogi States and in the south by the Bight of Benin and the Atlantic Ocean. Ondo State has the longest coastline in Nigeria and possesses great potentials for the country's fishing industry. The creeks and coastlands of the state are also recognized for their richness in prawns and lobsters with recent discoveries of stock fish reserve [25]. Ilaje Local Government Area (LGA), one of the three coastal LGAs in the state was purposively selected for the study because of the large volume of fishing activities taking place there. The main occupations of the residents include artisanal fishing, farming and hunting with the number of active fisher folks in the study area estimated at 450,000 producing over 90% of the fish consumed in the state. The estimated amount of fish produced in the area stands at over 12.5 metric tons per year with an annual revenue of about 945 million naira or USD 7.26 million [21].

A simple random sampling technique was used to select three fishing communities (Igbokoda, Mahin and Aiyetoro) in the LGA while 30 households involved in artisanal fisheries were randomly selected from each community. A child between the ages of 9 and 18 years was randomly selected from a fishing household giving 90 respondents for the study. A well-structured interview schedule containing open- and close-ended questions on personal characteristics of the children as well as their fishing activities was used in data gathering from the children. This was also complimented with the interview of an adult key informant per household. Secondary data was sourced from journals, books and on the internet. Descriptive statistics such as frequency tables, percentages and bar charts were used to present the data gathered for the study. Inferential statistics such as the Chi-square (for variables measured at the nominal level) and the Pearson Product Moment Correlation (for variables measured at the interval level) were used to test the study hypothesis.

RESULTS AND DISCUSSIONS

Table I showed that majority (70.0%) of the respondents were males thus revealing the preponderance of the male gender in artisanal fishing activities which can be attributed to the high energy demand of the activities

involved which the male physiological make-up is better able to cope with. This finding is corroborated by Iversen [24] who reported a range of 86.0% - 91.3% of boys among children involved in the fishing industry in some selected countries. Even though the figures reported by Iversen [24] are higher than the one obtained for this study, nevertheless the fact established is that the male gender is much more involved in the fisheries sub-sector. On the other hand, the study also reveals that girls are much more involved in the study area than was obtainable elsewhere thus implying the need for gender mainstreaming in policy making and design of programmes for children in the artisanal fisheries sub-sector in Nigeria.

A distribution of the respondents by age as shown in Table 1 revealed that two thirds of the children were above 14 years of age, which implied that involvement of children in artisanal fisheries was prominent among older children. This may have been so because fisheries-related work is physically demanding and cannot be carried out before a certain level of physical maturity is attained. The youngest of the respondent was nine years of age and the mean age for the study was 15 ± 2 years, which was an indication that physical maturity really counts for involvement in fishing among children. This finding is confirmed by Nieuwenhuys [26] who attributed the finding to the hazardous nature of fishing, which makes it too risky for younger children. Most of the respondents (65.6%) were involved in fishing activities out of personal interest followed by those who did so for financial gain (33.3%) and a minority (5.6%) who counted it as an obligation to assist their parents (Table 1). This reveals the potential of the venture to attract more entrants as the children grow older since most of them are driven by personal interest arising from the perception that they are able to earn a living from fishing activities.

Table I also showed that 90.0% of respondents were currently enrolled in formal schools with the majority (57.8%) in secondary schools. Only 3.3% had never enrolled in formal education while 6.7% had completed their secondary school education. This reveals that involvement in artisanal fisheries does not hinder enrollment in school and completion of education. This finding contradicts the report that school enrollment in fishing communities are low [27]. This finding from this study is also buttressed by the previous findings by Kronen [14] who conducted a study of children's involvement in artisanal fisheries among primary school pupils in Tonga and Fiji. Furthermore, the enrollment figure in this study is much higher than estimated net enrollment figures for low-income countries (50%). It is also higher than the UNICEF national primary school enrollment figure of 60% for Nigeria for the period 2000-2005 [28]. This finding therefore lends credence to the call for the development and sustainability of artisanal fisheries as future fishers are likely to be more literate and thus able to take advantage of technological innovations. Fishing experience for two-thirds was over 7 years signifying that most of them became involved as early as 6 years, going by the mean age of 15 ± 2 years. This is in line with Kronen's [14] report of 7-9 years school age children's involvement in the artisanal fisheries sub-sector. This implies that early targeting of children with information on sustainable practices in the sub-sector can be rewarding and should therefore be done.

Table I: Personal characteristics of respondents

Sex	Frequency (n =90)	Percentage (%)
Male	63	70.0
Female	27	30.0
Age		
≤ 14years	30	33.3
15-18years	60	66.7
Educational status		
No formal	3	3.3
Primary school	29	32.2
Secondary school	52	57.8
Finished secondary school	6	6.7
Fishing experience		
< 7 years	33	36.7
>7 years	57	63.3
Reasons for involvement		
Personal interest	59	65.6
Financial gain	30	33.3
Parental coercion/obligation	5	5.6

Source: Field survey (2007)

Fishery activities of respondents

Activities of the children in the artisanal sector varied as shown in Figure 1. All the respondents (100%) were involved in fishing, followed by fish marketing (97.8%), net cleaning (92.2%) and mending (35.6%) and fish processing (68.9%). The lower involvement in mending net revealed was attributed to their need of more time to learn this very technical aspect. Also, the fact of their minimal use of this tool may be a reason for lower involvement in its repairs as most of the fishing by children was done using the hook and line, baskets and traps. Only the older, physically more matured and stronger children used the cast or drag nets. Involvement in fish processing was also not prominent probably because the aspect involved much technicalities, making it the exclusive role of the older women [29].

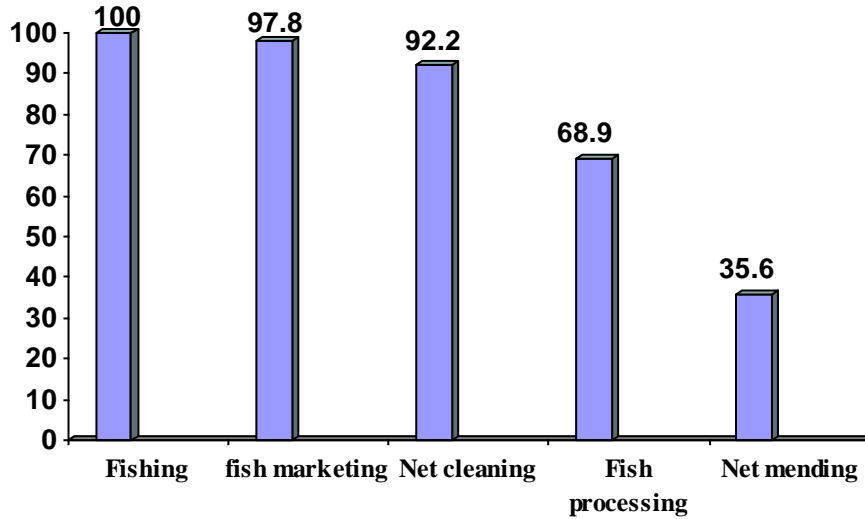


Fig. 1: Fishery activities of respondents

Time of fishing of respondents

Figure 2 revealed children fished early in the mornings (70.0%) while 52.2% did so in the evenings. Those who fished in the mornings between the hours of 4am and 5am accounted for 43.3% while the majority (56.7%) did so between 5am and 6am. Those who fished or engaged in other activities in the evening did so after 3pm when they must have returned from school. This schedule of engagement in fishing activities by children was probably geared at enabling the children to prepare for, attend school and do their home-works. This finding is also corroborated by Kronen [14] who reported that in some communities, children fished early in the mornings before going to school. He further reported that children fished generally on weekends because they are too young to risk fishing under dark conditions. His study also noted that fishing during school days was dependent on the proximity of both children’s schools and fishing grounds to their homes. He reported the frequency of the involvement by school children in fishing activities at between one to three times weekly [30].

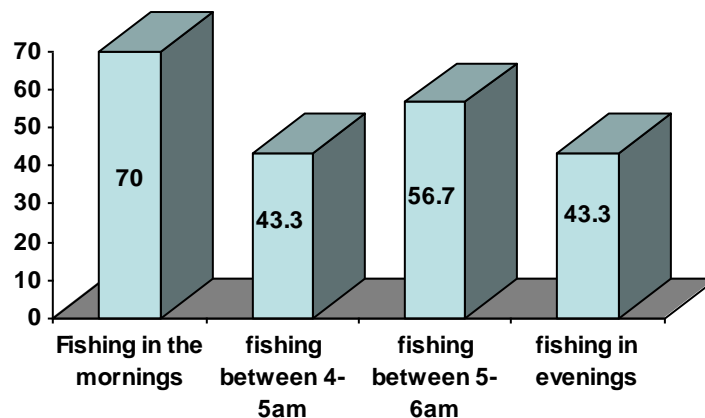


Fig. 2: Time of fishing by respondent

Fishing grounds operated in by respondents

Most of the children fished mainly in rivers, creeks and canals with friends (100%) and 84.4% said they were capable of fishing alone. A few fished on the high seas with friends (18.9%) and 26.7% fished with their parents (Figure 3). The few that fished with their parents were generally the older ones who were gradually being introduced into higher levels of involvement in and commitment to artisanal fishing. This finding on pattern of fishing is corroborated by earlier report by Kronen [14] in the Tonga and Fijian areas.

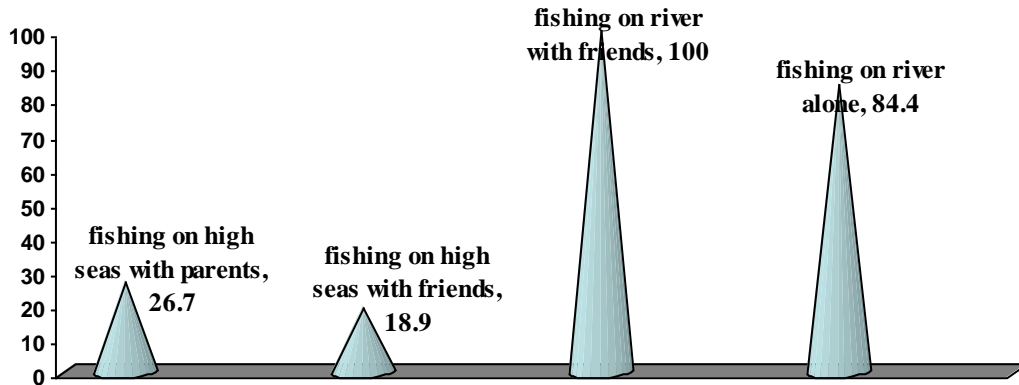


Fig. 3: Fishing grounds operated in by respondents

Duration of involvement and economic contribution to households

Mean daily duration of involvement in the artisanal fisheries sub-sector by the respondents was 2 hours 48 minutes, which by extrapolation gave 17 hours 28 minutes per week. This involvement duration is higher than the mean weekly duration of 10 hours 57 minutes reported by Fasina [31] for children’s involvement in crop and animal husbandry in Ondo State, Nigeria. Apart from fish, other aquatic animals caught by children included snails (73.3%), snakes (62.2%), turtles (30.0%), crabs (21.1%) and crocodiles/alligators (13.3%). Children’s catches in the study area denominated in monetary terms per caput per day was put at ₦317 (\$2.49). Based on the fact that 65.6% of the Nigerian population is living in poverty i.e. spends less than \$1 per day on basic welfare-enhancing consumption [9], the involvement of children in artisanal fisheries can be a sustainable tool to alleviating the poverty of fishing households and communities if well harnessed. About 82.2% of the respondents said they remit their earnings to their parents to leverage the money used to purchase household food items while 57.8% said their earnings are kept by their parents and used to offset their school fees. Another 24.4% said their money was not remitted to their parents but used to buy whatever school needs arise during term time. The fact of earnings by children’s involved in artisanal fisheries sub-sector being used to make contributions to household welfare is supported by Kronen’s [14] findings that remittances from school children’s fishing activities contribute to household meals. Furthermore, this finding confirmed the common practice of Fijian children helping their mothers to raise their school fees by selling fish and other aquatic animals captured by them in the study area.

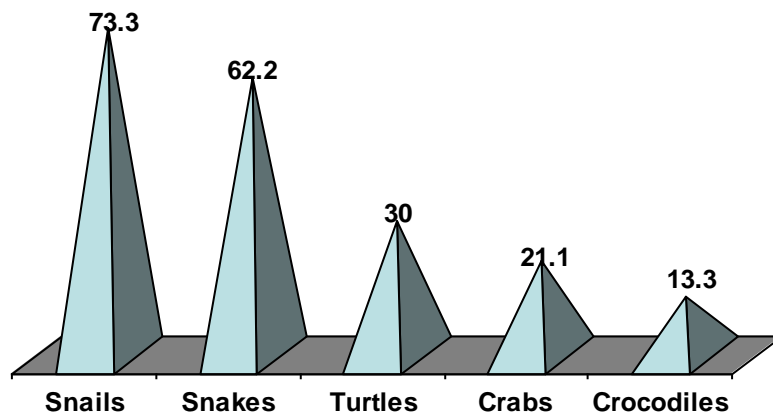


Fig. 4: Other aquatic animals caught by respondents

Hypotheses testing

The relationship between the personal characteristics of the children and their economic contribution to their households was tested at the 0.05 level. The Pearson Product Moment Correlation analysis revealed that there was a positive and significant relationship ($r = 0.27$, $p < 0.05$) between the age of the respondents and their economic contribution to their households. This implies that the older the children, the more the volume of catch and subsequently, the economic contribution to alleviating the poverty of their households. This is because the physically demanding nature of the activities predisposes the older and more physically matured children to effectiveness and efficacy in fisheries operations. Fishing experience was also significant and positively related to children's economic contribution to their households ($r = 0.41$, $p < 0.05$). This, by implication, means that the more experienced the children are, the greater the monetary gains they derive for the benefit of their households. The higher r-value for fishing experience (0.41) compared with that of age (0.27) may be a connotation that experience in artisanal fishing is a more important determinant of economic gains through better landings. This does not rule out the fact that both skill and strength are key factors enhancing performance in the fisheries sub-sector. This finding supports the calls for capacity building to enhance the skills of the respondents. Educational status had no significant relationship to children's economic contribution ($r = -0.05$, $p > 0.05$), which implied that education of the children had no effect on their fisheries activities. The relationship between sex and economic contribution to the household tested with the Chi-square analysis, was insignificant (calculated $X^2 = 2.66$, $Df = 1$, $p > 0.05$). Thus, being a male or female is insignificant in economic contribution to household. This means both boys and girls can contribute to alleviating the poverty status of their households to the same extent.

CONCLUSION AND RECOMMENDATIONS

The findings of the study have revealed how the involvement of children in the artisanal fisheries sub-sector has helped in alleviating the poverty status of their households. Involvement of children in the sub-sector as revealed may not be affecting children's school enrollment and completion negatively in the study area. The number of years of fishing experience was however shown to be more significantly important to children's income earning capacities and consequently the extent to which they could help to alleviate the poverty status of their households. This therefore underlines the need for a deliberate programme geared at involvement of children in artisanal fisheries sub-sector at an age when they could safely accompany their parents and older ones to fishing grounds so they begin to learn the act.

Capacity building for children involved in artisanal fisheries should be embarked upon to boost their experiential knowledge, as they significantly contribute to poverty alleviation in fishing communities. They should be sensitized on the need to pay more attention to their education and not rely on or be content with their present income from fishing activities. They should be helped to see the fishing business as a pastime and a secondary event. Literacy/ education promotion programmes should be implemented to help emphasize the importance of formal education. This will ensure that they strive to go further in their education and lead to higher quality human resources for sustainable economic development. The children that do well at school and at fishing could be encouraged through scholarship programmes to study fisheries and related courses in the tertiary institutions.

REFERENCES

- [1] White, B. 1976. "The Economic Role of Children in a Javanese Village". In Fuchs (ed.), *Youth in a Changing World Cross-cultural Perspectives on Adolescence* Mouton Publishers. The Hague. Paris . Pp 187-206.
- [2] Ugalde, M. A. 1990. "Children in Especially Difficult Circumstances in Nigeria, a Study Analysis". A paper presented at the workshop on the Urban Child in Especially Difficult Circumstances, Nairobi, Kenya, 3-8 Dec. 1990 pp 18.
- [3] International Labour Organisation 2005. "Technical Workshop on Child Labour in Commercial Agriculture in The United Republic of Tanzania" 27 – 30 August, 1996 www.ilo.org
- [4] Spore 2006. "Child Labour Scaling Back Gently" Issue 124 August 2006 CTA pp3
- [5] Upton, M. 1997. *The Economics of Tropical Farming System*. Cambridge University Press. 374pp.
- [6] Nation Master 2007. "Nigeria" Retrieved on June 21 2007 from <http://www.nationmaster.com/country/ni-nigeria/agr-agriculture>
- [7] Nigeria News 2007. "Census" Retrieved on June 21, 2007 from www.nigerianews.com/census/census2006.htm
- [8] Central Bank Nigeria 2000. *The Changing Structure of the Nigerian Economy and Implications for*

- Development*” Realm Communications Ltd, Lagos.pp1-60
- [9] Akande, O. 2003. “Nigeria Macro Report” A Report to the Afrint Project July 2003 93P
- [10] FAO, 2008 West African Fisheries Profile (Nigeria).Retrieved on July 8, 2010 from www.imcsnet.org/imcs/docs/nigeria_fishery_profile_apr08.pdf
- [11] Chinweoke, A. 2007 “How Fisheries Contribute to Food Security in Nigeria” Vanguard Newspaper On Line Posted to the Web on Sunday, February 18, 2007. Retrieved on October 25 2007
- [12] Tobor, J. G.1990. “The fishing industry in Nigeria - Status and potential for self -sufficiency in fish production.” Nigerian Institute for Oceanography and Marine Research, (NIOMR) Technical Paper 54, 1990
- [13] Adewumi, A.A. and O.A. Fagbenro, 2010. Fisheries and Aquaculture Development in Nigeria: An Appraisal In Fagbenro, O.A., Bello-Olusoji, O.A., Adeparusi, E.O., Uwanna, L.C., Adebayo, O.T., Dada, A.A. and Olufayo, M.O (editors) *Sustainable Fish Production and Food Security in a Global Economic Recession* Proceedings of the 24th Annual Conference of the Fisheries Society of Nigeria (FISON), 26-28 October, 2009, Akure, Nigeria. Vol I pp 174-178.
- [14] Kronen, M. 2004. “*Alu toutai - Na laki qoli* –Fun or duty: School children’s involvement in subsistence fisheries in Tonga and Fiji” SPC Women in Fisheries Information Bulletin #14 – September 2004
- [15] Mabawonku, A. F. 1979. “Fishing efforts and Earnings in the Nigerian Artisanal Fisheries”. *Journal of Rural Economics and Development*, 12: (2), 10, 1979.
- [16] Mabawonku, A. F. 1981. “Programmes and Strategies for the Development of Artisanal Fisheries in Nigeria” *Indian Journal of Agricultural.Economics*, Vol. XXXV: (4), 1981.
- [17] Akinyemi, O. A., M. Balogun and S. O. Talabi 1986. “Catch Assessment of Commercially Important Fin-Fish of Nigeria’s Trawling Industry”. *Journal of West African Fisheries* Vol 1 (1), April, 1986.
- [18] Ogunmoroti, T. 1989. “Fish Wholesale Price Determination of the Inshore Fishing Companies in Lagos State, Nigeria”. Unpublished M Sc. Dissertation, University of Ibadan, Nigeria, 1989.
- [19] Okiya-Alfred, J. F. and E. A. Allison-Oguru 1991. “Resource use Efficiency in Traditional Canoe Fisheries of the Rivers State of Nigeria” *Journal of West Africa Fisheries* (IV): 207 – 213, 1991.
- [20] Ajayi, T.O. and J.G. Tobor 1992. “Current Management of Marine Fishery Resources For Sustainable Development in Nigeria”. Nigerian Institute for Oceanography and Marine Research (NIOMR) Technical Paper 77, April 1992.
- [21] Akegbejo-Samsons Y. 1995. “Ecology of the fisheries resources of the coastal wetland of Ondo State and its management implications”. PhD Thesis, Federal University of Technology, Akure, Nigeria.
- [22] Akegbejo-Samsons Y. 2007. “Production and Market Information Strategy for Fisheries Production: A Case Study of Fisherfolk Cooperatives in Ondo State Coastal Communities” retrieved on October 25, 2007 from <http://www.livelihoods.org/post/Docs/IAALD/017Akegbejo-Samsons.doc>.
- [23] Hosch G. 2000. “The Use of Students in Surveying Subsistence Fisheries – A Pacific Island Case Study.” FAO Fisheries Circular No. 962. Food and Agricultural Organization of the United Nations, Sub-Regional Office for the Pacific Islands, Rome.
- [24] Iversen, V 2006 “Children Work in Fisheries, a cause for Alarm? Sustainable Fisheries Livelihoods Programme. FAO, Rome. Retrieved on June 21, 2007 from ftp://IIFTP.FAO.org/fi/documents/fip/SFLP_publication/English/child_labour.pdf
- [25] Ondo State Government 2004. “Official Website of the Ondo Stae Government”
- [26] Nieuwenhuys, O. 1994. “*Children’s Lifeworlds: Gender, Welfare and Labour in the Developing World*”. London, Routledge.
- [27] Omole, W. 1999. “Welcome Address” CIAP Conference held at Obafemi Awolowo University, Ile-Ife, 1999
- [28] UNICEF 2006. “At a Glance- Nigeria Statistics” Retrieved on June 21, 2007 from www.unicef.org/at_a_glancenigeria-statistics.htm
- [29] Williams S.B. 1999. “The Socio-economic Potentials of Women in Riverine Small Scale Fisheries in Nigeria” Retrieved on October 25, 2007 from http://www.skf.uit.no/WW99/papers/Williams_Stella_B.pdf.
- [30] Kronen M. 2002. “Women’s Fishing in Tonga: Case studies from Ha’apai and Vava’u Islands”. SPC Women in Fisheries Information Bulletin 11:17–22.
- [31] Fasina, O.O. 2008 “Effects of Involvement of Children In Agriculture on their Welfare In South West Nigeria”. Unpublished Ph.D. Thesis, Department of Agricultural Extension and Rural Development, University Of Ibadan, Ibadan.