
THE CONCEPT OF ADOPTED VILLAGES AND AGRICULTURAL RESEARCH OUTREACH CENTRES - IMPLICATION FOR FISHERIES DEVELOPMENT IN NIGERIA –A REVIEW

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ABSTRACT

Adopted village/Agricultural Research Outreach Centres (AROC) initiative is specifically conceived by the Federal Government of Nigeria in order to avoid the weaknesses and shortcomings of the conventional method of technology transfer to the farmers through the extension staff of the Agricultural Development Projects. This paper examined the relevance of the concept in the development of the fisheries sector. Methods and guidelines adopted so far and modalities for actualization of targeted aims and objectives were also examined. The economic importance of fish to the economy of Nigeria was highlighted. Recommendations were given as way forward for the success of the project and its continuity.

Key words : *Adopted village, research, outreach, fisheries development and technology*

INTRODUCTION

In late 2009, the Agricultural Research Council of Nigeria (ARCN) directed all the National Agricultural Research Institutes (NARIs) to direct their researches towards poverty reduction due to the fact that overcoming poverty in Nigeria is one of the fundamental challenges confronting the Nigerian government. ARCN observed that the existence of wide-spread poverty in the country despite the high food production potentials is inconsistent with the principle of sustainable development. In the past, Nigeria was largely self-sufficient in food production, however, the situation has since changed and the food security situation is likely to deteriorate, if urgent steps were not taken to put the country on the path of sustainable agricultural growth. A major challenge in achieving this is the inaccessibility of the small-holder farmers to improved technologies emanating from the National Agricultural Research Institutes (NARIs). In addition, there is lack of effective linkage between research, extension and farmers. In the past, it was thought that the only way in which scientists could be aware of the social and economic environments of the farmers was to work closely with extension agents who would communicate the farmers' problems to them. While an effective and well-coordinated agricultural extension service remains the main delivery system for introducing new knowledge and technologies to farmers in order to improve their livelihoods, in recent times it has become obvious that due to poor funding by State Governments, the extension agents of the Agricultural Development Projects (ADPs) have not been as effective as expected. (ARCN, 2009)

Attempts were made at addressing these challenges and facilitate the dissemination of improved agricultural technologies in the past, in 1996 under the World Bank assisted program, the National Agricultural Research Project (NARP), introduced the concept of Adopted Villages to the National Agricultural Research Institutes (NARIs). The concept was introduced for developing and evaluating technologies emanating from the NARIs. The villages were to help in the early evaluation and dissemination of the technologies. The National Institute for Fresh Water Fisheries Research, among other NARIs, was to conduct their On-Farm Adaptive Research (OFAR) in the identified adopted villages. Each institute was to identify two communities in its mandate areas and select farmers who were willing to put

their technologies on their fields. The villages were to serve as "showrooms" for convincing intending farmers and end-users on the viability of the technologies being promoted. Most research institutes identified the villages during the NARP era but subsequently after NARP when funds dwindled, they were unable to carry out activities in these villages. Due to funding problems however, the adopted village concept was not implemented. It is important to recall the past and on-going projects in efforts by government to tackle the major problems bedeviling the fisheries sub sector of agriculture. These include-Lake Chad Project for Improvement of Fish Processing and Transportation (June 1975-December 1982); Federal Fisheries Schools Project (1976-1985) ; Artisanal and Inshore Fisheries Development Project (1979-1987) ;National Accelerated Fish Development Project (1979-1983) ; others include the more recent Fisheries Estate Project, and Presidential Initiative on Aquaculture (2005).

This paper therefore seek to make an appraisal of the concept of Adopted village/ AROCs initiative by specifically making attempt at justifying the relevance of the concept in fisheries development, examined the importance of fish to Nigerian economy, the NARIs present role, effort and methods in the renewed vigour by the country towards bringing proven fisheries and aquaculture technologies to the door steps of the end users, the achievements so far and suggestions for future development in fisheries technology transfer.

ECONOMIC IMPORTANCE OF FISH IN NIGERIAN ECONOMY

Fish is one of the best sources of protein, given the numerous essential, amino acids derivable from its consumption. It provides a good source of readily digested high – quality animal protein, together with a high concentration of vitamins A and D, a significant source of phosphorus and iron, as well as phosphorus and calcium in the bones (Thilsted and Roos, 1999). Anon (2001) reported that fish is also a good source of selenium, important co-enzyme, taurine and Polysaturated Fatty Acids (PUFA), this omega – 3 - type is not found in significant quantities in other common foods. Adequate intake of omega – 3-fatty acids by pregnant women ensures normal development of the human foetus. Pregnant women who eat optimum quantity of fish would enjoy good health and less incidences of child mortality (Raji, 2007). Fish equally contains appreciable quantity of vitamins such as vitamin A, B, E and K with respectable amount of minerals such as iodine, fluorine, calcium, magnesium and phosphorus (Yen *et al.*, 2006)

Conquer and Holub (2002) reported that eating fish lowers blood pressure, protect the heart from the constriction of blood vessels, thrombosis and heart arrhythmia. Similarly increased intake of finfish reduces sudden death from heart attacks, decreases symptoms of rheumatoid arthritis and risk of bowel cancer, and reduces insulin resistance in the skeletal muscles and for normal development of foetus in pregnant women. Info fish (2002) reported that eating of fish with high omega – 3- fatty acid might lower the risk of age – related muscular degeneration, which may cause blindness or vision impairment.

In addition to the roles mentioned above, fish also plays important roles in the cultural and social milieu of the Nigerian people. For instance fish species such as *Clarias*, *Gymnacus*, *Heterobranchus*, *Lates* e.t.c are prominent objects of socio-cultural activities such as marriages , naming ceremonies and even as post-natal delicacies in most Nigerian societies

Given the above role of fisheries, which is largely nutritional, the protein contribution of Nigerian diet from fish is estimated at 4.8% of total contribution of protein from all ingested foods, whilst the caloric, fat, calcium, iron and vitamin contributions are respectively 0.9%, 3.4%, 1.4%, 1.4% and 0.2%. These contributions are low when compared to similar contributions of ingested fish and fish products in the diet of advanced nations such as the United States and United Kingdom. This means that the nutritional role of fish and fish products in the diets of tropical Africans appear, from all available evidence, to be very low (Olayide *et al.*, 1981). The reason for these comparatively low values of protein and calorie as contributions of fish to the diet of tropical Africans is not far- fetched. This is evidently due to low rate of increase of catch form African waters. This observation is supported by Williams (1996) who reported that estimation and sustaining of fish stock is difficult task in Africa, especially when immediate and socio – economic pressures push for exploiting not just the surplus but also the resource base.

According to FAO, (1992b), capture fisheries generally have been in crisis situation since out of 200 fish stocks in all parts of the world, more than 25% were over-exploited, depleted or recovering and

would not produce greater catches if not returned to a healthier state.

The contribution of fisheries to the Nigerian economy is significant when viewed from the perspective of supply of high quality dietary protein and micronutrients, income generation, creation of employment and enhanced flow of foreign exchange earning through shrimp export (Raji, 2007).

According to Federal Department of Fisheries (FDF, 2001) more than 1 million people have direct and secondary employment in the fisheries sector. At the artisanal level 500,000 fishing families are involved in fish production while more than 100,000 "fish mammals are involved in processing and marketing. Revenue of over N2 billion is realized annually from issuance of industrial fishing licenses, while Nigeria also exports an average of 1,500-2,000 tones of shrimps annually. However these interesting contributions mentioned so far is being marred by some constraints which militate against enhanced goal achievement and the overall development of fisheries in the country. For example, the Foreign exchange earnings of fish from the Nigeria waters are not substantial enough to counter balance or pay for the substantial fish importation into the country. The obstacles include inadequate infrastructure and social amenities in rural/fishing communities, low prioritization by the State and local governments leading to poor funding, most often non-existing access roads and other means of communication between key production areas and marketing centers (Raji, 2007).). It is believed that any serious effort at channelling the appropriate information, technologies and inputs to the rural people and empowering them through group formation in addition to enriching the school curriculum with practical fisheries activities would go a long way to create a lasting awareness on the part of the beneficiaries in favour holistic approach to fisheries development in Nigeria. The present effort in this direction by the National Institute for Freshwater Fisheries Research New Bussa on near-by fishing communities and schools has an expected multiplier effect of trickling down to other communities far and large through sharing of experiences, self trials, emulations and attitudinal changes among dwellers of fishing communities and schools who might have learnt from the adopted village and research out-reach centres's initiatives.

Adopted village/arocs and the relevance to fisheries development in nigeria.

In Nigeria, like most developing countries of the world, fisheries constitute an important aspect of the peoples' overall economic life. The aquatic habitats in Nigeria have over the ages served as a major source of employment for the rural people, majority of whose living are specifically fisheries based as a substitute or addition to other rural activities such as crop and livestock agriculture. . Available records show that in Nigeria, fish contributes, on the average, 20 - 25% per caput animal intake and could be as high as 80% in coastal and riverine communities (FAO, 2000) The concern for modernizing Nigeria's fisheries through the concept of adopted village and out-reach centres has evolved, against the backdrop of increasing knowledge on poverty resulting in protein and calorie malnutrition as important health hazard, and the shortage of these important classes of food in ingested food, which resultantly impedes health, working efficiency and overall economic progress especially in rural communities. In a similar vein, experience in recent years have shown that increased knowledge and awareness of human requirements for healthy growth have focused increasing attention on the unique role of fisheries in the development of rural economies in Nigeria (Olayide *et al.*, 1981). The Nigerian fishery industry boosts its supplies through three main sources, which include capture (from the marine, brackish and freshwaters), culture (aquaculture) and imports. Over the past ten years, the status of fish supply in Nigeria is such that a good percentage of annual fish consumed comes from the rural areas (Amadi, 1989; Sanni, 2009), which implies that the peasant fisher folks who are involved in captured fishes, mostly supply the country with her fisheries needs. Culture and capture fisheries are known to maintain annual growth rates of 339.5 and 7555.53 metric tons per year respectively while imports account for 12,184.96 metric tons per year (Ugoala and Sanni, 2005). These data tend to underscore the dominant role and the importance of rural capture fisheries in Nigerian economy, whose estimated fish consumption per annum is 1.3million metric tons and the national fish production stagnating at some 450,000metric tons due to over fishing. The pattern of fisheries resource use in our water bodies is presently not sustainable as the primary beneficiaries tends to see the resource as common property and endowment from God with or without genuine efforts at renewing or

sustaining it. It is therefore imperative that AROCs and adopted village initiative be strengthened in order to encapsulate the vital information and knowledge required to boost availability of fisheries resource in Nigeria through cost-effective, efficient and sustainable methods, given Nigeria's natural, human and institutional resources. This will require sufficient synergy between research, extension and the rural people. In doing this, appropriate technologies on fish production and processing should be the stock in trade.

Methods and guidelines for Implementation of the Adopted Village/AROCs Concept

Since the take-off of the Agricultural Research Council of Nigeria (ARCN), the Council has requested the NARIs and Federal Colleges of Agriculture (FCAs) to revive the adopted villages in such a way that the villages are not merely seen as field laboratories but also as impact villages. The Council however is not oblivious of the fact that, the gains from research are not immediately self evident and that without clear and persuasive demonstration of research benefits, the NARIs and FCAs are unlikely to attract sustained funding required. The Council therefore, expects that even if the impact of research is not felt elsewhere in easily quantifiable terms, it must be felt in quantifiable terms in the adopted villages and AROCs. The Council expects the villages to be "showrooms" for convincing government and donors that investment in research and extension is worthwhile. The operationalization of the adopted village concept is aimed at realizing the following objectives:

To encourage large scale adoption of improved technologies

- Ø For economic empowerment of resource poor fish farmers and fisher folks
- Ø To create job opportunities for youths
- Ø To enhance and ensure food security

Against this background therefore, any methodology chosen should be in strict adherence to the procedures and guidelines stipulated by ARCN as follows:

- Ø Selected two nearby fishing communities/secondary schools which are within 20km radius from the Research Institute with no known evidence of any NGOs or other government agencies working with similar objectives in the selected communities. The extension staff and the scientists of the NARIs and FCAs should hold discussions with the community members and their representatives with the purpose of sensitizing them and ensuring their participation in Adopted Village/AROCs Concept.
- Ø A baseline survey of the socio-economic status of the adopted villages should be conducted which would serve as a yard stick for future impact assessment.
- Ø A rapid rural appraisal to determine the needs and problems of the adopted villages and out-reach centres should be conducted.
- Ø A village committee is to be established in each community comprising a cross section of the community where the analysis of the appraisal of the problems would be discussed thoroughly. The intention is to get the full participation of villagers in identifying their problems and proffering solutions to them.
- Ø With the full participation of the villagers, schools, researchers and the extension team, appropriate procedures for the transfer of the fish farming and fish processing technologies and their evaluation should be determined.
- Ø Procedure for conducting various activities in the village is to be discussed with the village committee, goals and objectives set and decision made on the means for achieving the objectives and goals set.

At the beginning of the actualization of this lofty initiative by the federal government through its institution, a take-off fund was released, in order to provide the required infrastructure necessary to facilitate its operationalization. However, it is expected that these institutions thereafter continue to nurture the project as their baby to maturity and make their impact felt positively in their immediate communities and schools.

More specific programme of actions are expected to be planned which concerns, the organizational structure, designation of responsibilities, training, timing, and planning of specific activities being

undertaken with the active involvement of the villagers and the schools. It is also expected that Innovation Platforms comprising the men, youths, women and mixed groups be put in place, possibly along value chains and duly inaugurated, in order to facilitate stakeholders' participation in the scheme of things for better and more fruitful achievement of goals.

As time progresses, the results achieved would then be discussed with the village committees in all the selected communities and the results obtained would be evaluated and recommendations which can be demonstrated in the village developed. This will involve impact assessment study on the transferred technologies on the productivity and income of the fishing communities which would be demonstrated to the entire communities involved. So far, concerned institutions have been operating on the AV/AROCs concept guidelines, leading to the attainment of set objectives. These include group formation, group registration, institutional empowerment and capacity building and provision of facilities by the villages and schools to facilitate institutional intervention, Grass-root extension in the communities are also being carried out by these institutions, in addition to the promotion of participatory approaches in the target communities. Institutional linkages and partnerships are also essential to goal achievements in actualizing this concept. Information flow from the farmers through the extension staff of NARIs/FCAs to the researchers and vice-versa gives effective feedback mechanism in the system. Other operational guides include:

Ø Promotion of farmer to farmer information exchange;

Ø Participatory monitoring and evaluation;

Ø Promotion of value addition in the communities and schools.

Ø Cost-sharing between the communities/schools and the NARIs/FCAs

Keeping of up-to-date records of all activities by all parties involved and finally determination of economic impact, ie, improvement in the socio-economic well-being of the farmers/students, due to adoption of the fish production/processing technologies will be determined in clear terms after a reasonable time.

With time, as more funds are made available by the Federal Government in support of NARIs and FCAs, the planned expansion of the adopted villages and AROCs will be actualized with tremendous results.

CONCLUSION

The adopted village /AROCs concepts and the desire of government to implement them through NARIs and FCAs is a laudable effort capable of transforming Nigeria's fisheries sub sector of agriculture to greater heights. In a similar vein it is believed that the villages and schools selected to participate in the rural and agricultural development initiative will in no small measure help to modernise rural fisheries in Nigeria, reduce hunger and create employment among farm families there by ensuring food security and stable income. Experiences and knowledge gained by the benefactors and beneficiaries in being part of this programme are expected to have positive effects on the other villages and schools in the country, in terms of improved technology utilization for modernizing the fisheries sector of the economy.

RECOMMENDATIONS:

The following are suggested recommendations necessary for effective attainment of the set goals in adopted villages and AROCs.

1 Adequate funding of the programme by government and non-governmental organizations, in terms of the provision of infrastructure and extension to other villages and schools will ensure practical modernization of fisheries with attendant multiplier effects on rural and urban communities in Nigeria.

2. The culture of programme continuity in the face of changing national governments is very critical to the success of the adopted village/AROCs initiative

3. Effort should be put in place by government to organise fish farmers and fisher folk into cooperatives

for a functional and effective linkage with Microfinance and Bank of Agriculture. This will facilitate accessibility to credits and inputs.

4. Provision of rural infrastructure such as access roads, water, health care and more importantly rural electrification is vital to the continued success of the concept of Adopted Villages and AROCs as such amenities are powerful stimulators of economic progress in any society.

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