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PRODUCTION AND MARKET INFORMATION STRATEGY
FOR FISHERFOLKS COOPERATIVES IN THE COASTAL
COMMUNITIES OF ONDO STATE

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PRODUCTION AND MARKET INFORMATION STRATEGY FOR FISHERFOLKS COOPERATIVES IN THE COASTAL COMMUNITIES OF ONDO STATE

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ABSTRACT

Information for agricultural and rural communities is a crucial tool in the fight against poverty in order to achieve food security. This paper presents the result of pilot fishnet initiative (FNI) of the Ilaje local government area of Ondo State. A model information network that provided data on fish production techniques and methodologies was established with the aim of networking all the fishers in the administrative area. Information on marketing and fish distribution were disseminated through traditional village meetings and modern communication devices such as TVs, leaflets, radio, posters etc under the roof of chairmen of fishermen cooperative groups. The level of effectiveness was measured for a period of 6 months. The results showed a high coverage and effectiveness. The FNI is recommended for the improvement of fisherfolk livelihoods in other regions.

Keywords: Fisherfolks, market information, cooperatives, Coastal communities

INTRODUCTION

Food security has continued to be a major concern for developing countries as global community strives to meet the Millennium Development Goals. The majority of sub-Saharan African countries rely heavily on the agricultural sectors as mainstream for economic growth, employment creation and foreign exchange generation (Kiplang'at 2003). In most African countries, the agricultural sector employs about 70% of the labour force, and accounts for 25% of their Gross Domestic Product (GDP) and 60% of their export earning (Economic Commission for Africa 1998, Aina (1998) and Adimorah (1995). While this sector is a major contributor to national food security, it is also a stimulant to the growth and expansion of other off-farm employment sectors. It has been internationally observed that food security at all levels (individual, household, national, regional and global) can only be achieved when all people at all times, have physical and economic access to sufficient safe and nutritious food. More importantly is the provision of suitable technologies for use in information and communication management among and within the production sectors. It was probably based on this fact that the CTA's ICT Observatory was created in 1998 to study and monitor suitable technologies needed for extension services in agricultural and rural development in ACP countries. The need to reduce information gaps between rural farming communities and policy-makers, researchers and development agents is still very vital, most especially the fishing communities in sub-Saharan Africa (fishermen and fish farmers).

Fisheries extension services and systems

The fisheries sector plays a major role in the freshwater and marine water ecosystems of the developing countries, where artisanal fisheries supply the bulk of the fish consumed by both inland and onshore dwellers. Artisanal fisheries include some of the poorest and most neglected communities within the society for, without land, such communities often find themselves outside mainstream economic and political life. Over 5 million fishermen are employed either full or part-time, in small-scale or artisanal fisheries across the coastal length of Nigeria (Akegbejo-Samsons 1995). In many poor developing coastal states, fishing is the occupation of last resort. Investigations have shown that when farmers on the coasts of southwest Nigeria find that they can no longer make a living off the land, they turn to the sea, often with disastrous results for they have no experience and there is little inclination for established fishermen to pass on good advice to a competitor.

In 2002, Africa produced 7.31 million t of fish. Of this, 4.81 million t was from marine and 2.5 million t from inland environments. The three top producers were Egypt, alone accounting for 85.6% of total, Nigeria with 6.5 % and Madagascar, at 1.8%. It has been estimated that unmanaged natural systems could provide food for 600 million people, one tenth of the current world population (Muir *et al*, 2005). Thus, about 90 percent of the present world population could not be sustained without agriculture. Yet, while few people live from only fishing, gathering and hunting, these unmanaged, or only loosely managed, natural food systems provide a strategically important contribution to the nutrition of indigenous people as well as to the existence and survival of many displaced, poor and marginal people. Except for marine fisheries, which are monitored, the diffuse reality of food resources directly obtained from natural ecosystems escapes most data collection and is usually not reflected in agricultural and economic statistics. Fish exports from developing countries have been growing rapidly and now far exceed earnings from commodities such as coffee, cocoa, bananas or rubber.

In Nigeria, outside the Agricultural Development Programmes enclave (ADPs), there are no other formalized extension services to the rural fishermen and fish farmers in Nigeria. The low level of fish production through aquaculture is attributed to a number of constraints, the major one being inadequate provision of information to would-be farmers and the paucity of guides to existing ones. With little or no knowledge of the status of the freshwater fauna, the average fisherman is ill-equipped for successful and sustainable production.

Empowering actors with information and analysis

In Africa, there has been an increase in socio-economic and poverty-related research on fisheries in recent years. This has helped to broaden our understanding of the nature of poverty in fishing communities, and to broaden (and in some ways re-define) the approaches which are used for fisheries development. African fisheries make vital contributions to food and nutrition security of 200 million people and provide income for over 10 million engaged in fish production, processing and trade. Fish has also become a leading export commodity, with an annual export value of US\$ 2.7bn. The role of fisheries and aquatic products in supporting livelihoods and economic output, and improving food supply in the region is critical (Muir *et al*, 2005).

It is clear that fisheries are capable of generating significant wealth on a sustainable basis when well-managed – however, the manner in which the fisheries are owned and controlled, and the way in which the wealth is generated and distributed will have a major impact on the socio-economic profile and poverty status of the associated communities and region. For inland fisheries, traditional community-based management systems, which were common-place, probably included a greater degree of wealth-sharing than more contemporary systems (which are often subject to elite capture and privatisation of the benefit streams). It is also recognised that poverty is a complex phenomena, and that it affects particular actors or groups when entitlement breakdown occurs (e.g. a failure to access food, commodities and services). Understanding poverty in fishing communities and the means to address it, therefore requires a good understanding of social structures, social relations and politics (all essential elements of governance), as well as patterns of change, with particular reference to entitlements (Neiland *et al*, 2005)

Fisheries management should protect the food security and livelihoods of dependent communities and try to ensure that benefits from the surplus production of wild stocks are brought into economies in ways that are appropriate to the political, social and development environments in which they occur. This can not happen effectively without the exchange of information. Governments and industries need reliable statistics in order to understand the economic relationships within the fisheries sector and its linkages to other sectors, e.g. finance, energy supply or vessel construction. Communities need catch and effort statistics if they are to achieve and ensure a fair and appropriate distribution of benefits. Policy-makers need such statistics so that fishing communities can be properly represented when sectoral policies are being developed.

Information is the key to power in addressing food and nutrition security. Information relevant to food and nutrition security needs to be accessible to civil society and the media, not only to government. Information must include analyses (and appropriately simplified communication of related results) on causes and effects of food and nutrition insecurity and likely outcomes of policy changes and public investments. Continuous education in food and nutrition security should be part of the empowerment process. As farmers' organizations are strengthened and empowered, due consideration should be given to those organizations that serve women farmers. According to Kiplang'at (2003), conventional communication channels such as radio, video and television have been used successfully in Africa to communicate agricultural information, but these have been monologue and have not allowed for much interaction with users. There are still problems and constraints on what can be done to bridge the information gaps between the fisherfolks and government agencies. Not much has been done to evaluate the effectiveness or impact of some of these operational information strategies. It was based on the fact and reality of this that a pilot fishnet initiative (FNI) was designed and operated among the fisherfolks communities of the Ilaje local government area of Ondo state, Nigeria. This study responds to the need for effective production and marketing information strategies in fisheries production among the fisherfolks of Ijaw fishermen in south-west coastal Nigeria.

METHODOLOGY

A model information network that provided data on fish production techniques and methodologies was established with the aim of networking all the fishers in the administrative area. Information on marketing and fish distribution were disseminated through network centers created at the houses of the chairmen (leader and spokesman) of the Fishermen Cooperative in 12 randomly selected settlements. The information needs of the various members of each cooperative were provided and presented through (a) the traditional audiovisual media which included TV sets with DVD/VCD players, TV scripts and video presentations developed on specific subject areas; and (b) the print media which involved the distribution of pamphlets, newsprints, posters, newspapers, books and magazines via the local dialects (Ikale, Ilaje and Egberi).

Description of the study area

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 mangrove is inundated by salt water from 2 to 10 months of the year. There are over 76 settlements along the coastal fringe of this study area, whose major occupation include artisanal fishing, farming and hunting. The entire area is poorly drained particularly during the rainy months when the creeks and rivers overflow their banks. This area produces over 90% of the locally consumed fish food in the state. The estimated amount of fish produced here is given as over 12.5 metric tones per year. The population of the active fisherfolks across the study area has been put at 450,000. Fish revenue amounted to about N945 million per year (Akegbejo-Samsons, 1995).

Study population, sampling procedure and sample size

The study area was divided into three strata for ease of identification and data collection. The first stratum consisted of settlements and fishing villages situated along the 18 kilometer coastline of the study area. The second stratum consisted of all fishing villages and settlements within and on the creeks and lagoons. The third stratum had fishermen settlements located within the forested swamps, floodplains, river canals and waterways. In each stratum, four settlements were selected randomly. Thus a total of twelve settlements (fishing villages) were used for the study. The register of membership of the different coop was used as the population size of the project (325 fisherfolks). Only 270 respondents were however used for analysis because 55 others did not complete all the sections of the questionnaire.

Types of data collected

A network center was created at the house of the chairman (leader and spokesman) of the Fishermen Cooperative in each of the selected settlement. The information needs of the various members of each

cooperative were provided and presented through (a) the traditional audiovisual media which included TV sets with DVD/VCD players, TV scripts and video presentations developed on specific subject areas; and (b) the print media which involved the distribution of pamphlets, newsprints, posters, newspapers, books and magazines. Information for the benefits of stakeholders was centred on fish harvesting, fish processing and preservation, fish marketing, application of new or improved knowledge, market and marketing research were provided for all the twelve selected centers. Coop members were made to have access to this information every day of the week for the whole six months of the study. During each monthly meeting of the coop a structured questionnaire was distributed to every member. The questionnaire was designed in such a way as to investigate and reveal the effectiveness of the contents of the packages and the fisherfolks perception of the key variables of the contents. This was done for six months. All the questionnaires were collected, collated and analysed at the end of the study.

Data analysis

Primary data for the study were sourced through personal interview with the aid of a well questionnaire. The open and close-ended questions in the questionnaire allowed for free expression of opinions on issues contained in the information package delivered to the coop members. All the questionnaires were collected on a weekly basis in the twelve settlements after due responses were articulated by the stakeholders. These responses formed the data that were subjected to descriptive analysis. Adoption of new teachings, trainings and guidelines contained in the information package was measured as the proportion of each fisherfolk that adopts the new practices. Like-type scales were used to measure the attitude of fisherfolks to change from existing practice to the new ones as contained in the information package. The score of each respondent on the understanding, relevance and possible adoption of the information package was classified into descriptive categories as follows: less than 20% (very low), 20-40% (low), 40-60% (average), 60-70% (high), above 70% (very high).

Along with the questionnaire, the platform for debate, exchange of ideas from the information package and reactions to them were equally recorded.

RESULTS AND DISCUSSIONS

Social economic profile of the fisherfolks

Table 1 shows some of the socio-economic profile of the fisherfolks in the study area. The average age of the fishermen is 43.5 years, with 55.5% between 36 and 45 years age category, and 27.5% in 16-35 years category. About 36.2% of the fisherfolks are male with average of about 6 years of formal education. Each of them owns at least 3 fishing locations of 2.4 km² and traditionally inherited water areas. Family sizes ranged between 1 and 12 persons with an average of 8 persons. Average annual income from fishing alone, standardized at 2005 value is about N256, 000, ranging from N45, 000 to N458, 000 per annum. Studies from other coastal artisanal activities found similar earning bracket (Akegbejo-Samsons 2002). Fisheries activities form the exclusive preserve of the people in their active age, thus they are fully aware of the interplay between the resources and the environment.

Communication and extension characteristics of fisherfolks

Table 2 shows the communication and extension characteristics of the fisherfolks in Ondo State coastal area. The study area is one of the enclaves of the state Agricultural Development Programme (ADP). However as a result of the riverine conditions of the area, the ADPs information support components have not been adequately and effectively provided. 20.1% of respondents had no contact with extension agents, while 25.1% of respondents have regular contact with extension agents. About 51% had access to only one extension media (radio). 36.2% had access to two (radio and print) while 12.8% had access to three (radio, print and TVs). All the respondents corroborate the fact that informal networks are very important sources of information dissemination among fisherfolks due to the problem of transportation within and across the creeks, estuaries and floodplains of the areas.

In addition, NGOs have not been directly involved in any fishery-enhancement programme with the fisherfolks. Other notable communication channels such as telephone use in extension delivery, radio broadcasts, TV programmes and the recent global system mobile units non-existing or seriously limited. Fisherfolks contact with extension communication packages had been as low as 12% since 1999 to date. Since the withdrawal of the World Bank from the funding of agricultural extension services in Nigeria, the level and application of agricultural information has fallen drastically (Adebayo et al 2002)

Table 1: Some socio-economic profile of coastal fisherfolks in Ondo state

Characteristics	Percent, N=270	Mean/Mode	Standard deviation	Minimum	Maximum
Age (years)					
Less than 15	3.6				
16-35	27.5				
36-45	55.5	43.5 years	12.78	13	72
46-60	5.1				
Above 60	8.3				
Education (years)					
None	30.6				
Less than 6	25.8	5.7 years	4.66	0	24
7-12	36.2				
More than 12	7.4				
Fishing access (areas)					
1. One	42.1				
2. Two	35.8				
3. Three	17.5	2.4 sq km	1.67	1	5
4. Four	3.2				
5. More than four	1.4				
Family size (persons)					
Less than 2	8.3				
3-5	20.7	8 persons	7.3	1	15
6-9	34.4				
10-12	36.6				
Income per annum, 2005 (N)					
Less than N50,000	3.4				
N50,000- 100,000	10.6				
N100,000-150,000	20.5				
N150,000-200,000	27.8	N256,000 per annum	n.a	45,000	458,000
N200,000-250,000	28.2				
N250,000-350,000	4.9				
N350,000-500,000	3.8				

Table 2: Communication and extension characteristics of coastal fisherfolks in Ondo state

Characteristics	Percent, N=270	Mean/Mode	Standard deviation	Minimum	Maximum
Extension contact					
None	20.1				
Not regular	32.0	47.9	n.a	none	Very regular
Regular	25.1	Regular +			
Very regular	22.8	Very regular			
Access to information media					
1. One	51.0	1 medium	n.a	1	3
2. Two	36.2				
3. Three	12.8				
No of extension/ Information media used					
1. One	25.3				
2. Two	21.7	3 media	n.a	1	5
3. Three	36.5				
4. Four and more	16.5				

Fisherfolks perception of the information Initiative

The fisherfolks perception, usefulness and applicability or adoption of the contents of the information packages is presented in Table 3. As shown in the table, the 270 respondents interviewed after the six months of contact with new ideas, practices, production methodologies in fish production and management, market and marketing innovations through active and inactive communication system, were willing to discuss their perception about the initiative. Based on the 10 areas of focus of the initiative, viz. fish harvesting, fish preservation, fish smoking methods, fish marketing, marketing channels, sales improvement, coop management, access and control of mini credit, coastal aquaculture, brush park (Ike) management and wild collection of fish seeds, fisherfolks' perception were analysed and discussed.

Table 3: Fisherfolks perception of the contents of the information initiative

Information package	Percent (n=270)	Respondents' perception of key variables			
		Adoption score (%)	Knowledge score (%)	Attitude score (%)	Relevance score (%)
Fish harvesting	15.2	85	76	88	100
Fish preservation	20.3	78	94	90	100
Fish smoking	21.0	82	100	100	95
Fish marketing	15.3	100	87	85	86
Marketing channels	6.9	79	62	76	89
Sales improvement	3.7	55	54	61	67
Coop management	5.6	74	58	53	45
Mini credit management	7.2	65	45	88	74
Coastal aquaculture	2.1	25	32	45	51
Fish seed collection	1.2	32	47	65	42
Brush park management	1.5	25	12	34	18
Overall	100				

The initiative proved that listening groups, either through radio or via TV provided for active participation of all stakeholders. 100% of respondents declared the relevance of information provided on fish harvesting and preservation, 95% on fish smoking and 86% on fish marketing. The interest of fisherfolks in the four major fisheries activities is clearly shown, where over a total of 71.8% respondents have an adoption score higher than 80%. After each meeting, results of the attitudes of fisherfolks showed 100% for fish smoking, 90% for fish preservation and 88% for fish harvesting. While the relevance score of marketing channels was 89%, the adoption score was lower (79%), this may be probably due to the lack of knowledge (62%) on the channels proposed. This shows that failure or willingness to adopt an innovation is a complex function of many factors.

CONCLUSIONS AND RECOMMENDATIONS

Traditionally most network publications have been distributed exclusively in prints. In addition networking activities have been conducted through traditional methods such as workshops, training courses, study tours, conferences and printed publications. This has become a constraint to networking and sharing of information, especially in the developing countries. To date, it is the radio and TV that have been the major ICTs used in agricultural extension delivery in Nigeria. Despite the importance of these channels, they are principally owned and controlled by either state or federal governments. More so the information content of these channels was more provider-driven than user-driven and this has implication for extension delivery. The outcome of this study shows the effectiveness of subject-specific user-driven packages (fish production and marketing). The study also solved some of the major constraints to ICT use in extension delivery in Nigeria by involving people interacting and listening in groups, discussing and debating on fisheries issues at no cost; and at the same time breaking the sense of isolation often common in riverine areas due to the topography and hydrological terrains. It is suggested that this initiative can be enlarged to become Fisheries Information Resource Centres in the various headquarters of the settlements. Fisheries information packages including hands-on training brochures, posters, leaflets and recorded scripts can be produced and circulated round the centres at regular intervals.

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