

## II. CHARACTERISATION STUDY OF FISH PROCESSORS AS A FISHERIES SECTOR COMPONENT GROUP

### RESEARCH TEAM:

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### 1. BACKGROUND AND JUSTIFICATION:

Fish production from the Uganda water systems is estimated at 245,000 tonnes. Much of this catch undergoes processing of one type or other to preserve the fish for distant markets or to improve the form for various consumer preferences. Much of the processing is done on small scale using traditional methods by artisanal operators. Recently, however, industrial processing has been introduced, mainly for the export market.

It is believed that many areas of the country do not have access to fish supply as a result of unsatisfactory preservation methods. Similarly, post harvest losses in fisheries is still considered to be a major problem, as most of the product on the market has very short shelf life.

In view of the now declining catch from the waters of the country, it is believed that the strategy is sustaining and even increasing fish supply on the market lies in improved fish processing.

### 2. OBJECTIVE OF STUDY:

Much of the previous studies undertaken on the fish processing was concerned with the improvements on the processing technologies.

This study aims at characterising the group of people involved with fish processing, with a view to diagnosing its interests, strengths, weaknesses and interactions with other groups to assess the fish processors influence on total sector behaviour and performance. The study addresses the issues given in the general terms of reference for group characterization studies, with reference to fish processors.

The output of the study will be information for improved policies and decisions for public sector intervention and private sector planning in the fisheries.

### 3. REVIEW OF THE PREVIOUS STUDIES:

Previous studies indicate that the methods of fish handling and processing used by artisanal operators have undergone little transformation over years. Much of tilapia has continued to be cured by simple hot-smoking over open fires or by sun-drying and these two methods have remained principal means of processing fish at local landing centres to this day. (FORD 1955;

GRAHAM 1929, SEMAKULA 1967 TDRI 1983, SSALI et.al 1990) Other techniques which came later include salting and frying. Various attempts to improve efficiency of traditional smoking kilns have been made through projects under the Fisheries Department but basic processes have remained the same. (ROOGER 1970, SSEMAKULA 1967; SSALI 1990). Artisanal fish processing is found on all the water bodies especially where transport facilities are scarce.

Industrial processing in Uganda started as early as 1950s with the main pioneering industries in Western Uganda which included TUFMAC in the 1930s and later on in 1960s Pelican and Mermaid. These were dealing with frozen fish and fillets serving local and foreign markets. However, they ceased to operate due to the economic war in 1970s. (BOWSER 1990).

Other industrial fish processing plants got underway around Kampala (1973 -74) dealing with frozen fish and fillets. These included Frozen Foods Ltd and Afro Fish Ltd. They also collapsed during the period of economic crisis of the 1970s to early 80s (BOWSER 1990).

On Lake Victoria, Uganda sector, the system of chilling and shipping catches on commercial basis first existed in late 1960s with UFD installing a pilot-ice making plant at Masese near Jinja but it could not operate for more than a few days due to such factors as frequent mechanical break down; reluctance on the part of traders to use ice facilities and lack of suitable packing containers (FD 1971).

SSALI and SSEWANKAMBO, 1991 report of six fish processing plants worth about US \$ a million, one government and five private to be in full operation by the end of 1991 with intended processing capacity of 36,700 tonnes per year and with exception of oldest of the private processing plants that started in 1987 all others include operational ice plants that can produce from 3 to 10 tonnes of ice per 24 hour shift.

Currently, fish processing investment especially on Lake Victoria has increased with 11 factories in operation and these are mainly engaged in fish filleting, freezing, smoking, chilling, sun-drying and in fish meal production.

Clearly, therefore, much has been documented on the technology of fish processing in Uganda. However, major gaps still exist in the knowledge on the people who take part in the processing of fish, both artisanal and industrial. Little is known of their structure and organization, resources at their disposal, policies governing their behaviour and their influence on other groups and on the entire fisheries sector. This study will play an important role in bridging these gaps in the information on fish processing in Uganda.

#### 4. METHODOLOGY:

##### i. Review of previous studies:

The researchers on the study team would visit the relevant libraries at the Fisheries Department, Fisheries Training Institute, UFFRO, Kawanda Research Station, Namulonge Research Station etc. as well as to expert scientists

within Uganda to identify and review literature relevant to the subject of fish processing in Uganda.

ii. Identifying categories within the fish processing group:

The team will make preliminary visits for the purpose of identifying and categorising operators taking part in fish processing. The visits will cover industrial as well as artisanal units on all the main water bodies of the country. Preliminary information on the operators will be used in defining categories within which the processors will then be placed.

iii. Design of a sample survey to obtain data on group:

a) Types of Data:

The data planned to be collected from artisanal and industrial processors will relate to:

Group structure - Age, sex, marital status, size of family, education labourers, ownership and types of processing and species processed.

Resources - Capital and source, raw materials

Motivation - Why the group prefers to do what it does and what motivates it to do so

Technology - Types of technologies available and applied and how they may be improved.

Group organisation- Whether the group is organised in co-operatives, association and benefits derived from these if any.

Group behaviour and policies - The policies and behaviour that guide the group in its operations, both official and group's.

Infrastructure available to group - What makes the group's operations and existence easy and acceptable to workers

Group performance- Income, employment, diet, environment, export.

Group relation to other groups: Whether the group draws inputs from or supply inputs to or have dealings with other groups of the fishery sector.

b) Data collection :

Data collection instruments will be two questionnaires, one for artisanal and the other for industrial processors. The questionnaires will first be tested at Bukungu landing - Lake Kyoga for artisanal processors' and at Uganda

Fisheries Enterprises Ltd. (UFEL) factory, Jinja for the industrial processor questionnaire to gauge their suitability. All members of the research team will take part in this exercise, estimated to last two days for artisanal and one day for industrial processor questionnaire.

Local community participation will be sought to supplement the use of the questionnaires in data collection.

Field trips will be undertaken for the purpose of filling out the questionnaire which at the end of each day will be thoroughly scrutinized by a group leader. Only two researchers, one supporting staff and a driver will go on each single trip except for L. Wamala where all members will participate.

c) Coverage:

Coverage will include all the industrial processors on L. Victoria shoreline and a sample of artisanal processors on the main Uganda lakes and sites where processing is being done. The artisanal sites will depend on the number of processors at the processing site. About 40% of the processors or more for proper statistical analysis will be appropriate at each artisanal processing site.

Five lakes will be visited namely; L. Victoria (8 days), L. Kyoga (5 days), L. George/Edward and Kazinga Channel (8 days), L. Albert (8 days), L. Wamala (2 days).

d) Sampling sites:

Artisanal processors

<u>Lake</u>	<u>Sites</u>	<u>No. of days</u>	<u>Comments</u>
Victoria	Buvuma and	3	One day
	or Ssese Islands	3	travelling
Kyoga	Bukungu	2	
	Iyingo/Muntu/	3	
	Rwampanga		
George/Edward/	Kashaka	2	
Kazinga channel	Katunguru/Kasese	1	Two days'
	Rwenshama	2	travelling
Albert	Wanseko	2	Two day's
	Ntoroko	3	travelling
Wamala		1	

--- *First Technical Report* ---

Industrial processors

<u>Lake</u>	<u>Industry site</u>	<u>No. of industries and Researcher attached</u>
Victoria	Entebbe/off Kisubi	2 (1 researcher)
	Jinja	2 (2 researchers)
	Kampala	3 (2 researchers)
	Kampala	3 (2 researchers)
	Katebo	1 (2 researchers)

d) Timeplan for activities:

Specific objectives:

	<u>Period (1993)</u>					
	<u>June</u>	<u>July</u>	<u>Aug.</u>	<u>Sep.</u>	<u>Oct.</u>	<u>Nov. Dec.</u>
i	xx					
ii	xx					
Preparation of Questionnaire	xx					
Testing of Questionnaire (Artisanal, Indu- strial)	xx					
iii (a - k)						
Artisanal		xx	xx			
Industrial				xx		
Field trip reports	xx	xx	xx	xx		
Data analysis				xx	xx	
Final report						xx

5. IMPLEMENTATION:

As indicated above, the survey design has been completed, the questionnaires prepared and tested and data collection has begun on both industrial and artisanal processors.

6. CONSTRAINTS:

There has been a delay to implement the study due to problem of getting the team together as some of the collaborators were still on other commitments.

7. EVALUATION:

The study has so far gone on satisfactorily and field data collection is expected to be complete over the next eight weeks.

8. REFERENCES

- Ajena Peter James (1986): Fish preservation and quality control For Award of a Diploma in Fish Technology, from Fisheries Training Institute - Entebbe.
- Clucas I.J. (1981 - 85): Fish handling, preservation and processing in the tropics part 2. Tropical Development and Research Institute Grimsby College of Technology.
- Clucas I.J. (1982 - 85): Tropical Development and research Institute. Fish handling, preservation and processing in tropics parts 2. Tropical development and research Institute Grimsby college of Technology.
- Clucas I.J. and White Head W.D.J. (1986): Design and construction of fish boxes from locally available materials in developing countries (part one). Tropical Institute 56/62 Gray's Inn Road London WC1X 8 LU
- Dhatemwa C.M.: Fish processing and marketing in Uganda - Institutional Aspects. 5pp.
- FAO CIFA Subcommittee (1984): Report of the workshop on fish technology and quality control Mwanza, Tanzania 11th July - 19th August, 1983.
- Hector M. Lupin (1990): Fish Technology news (FAO) Vol. 10 no. 1. Training Project on fish Technology and Quality control.
- Isabirye Badru (1986): Fish processing and preservation. For Award of a Diploma in Fish Technology, from Fisheries Training Institute - Entebbe.
- Kamugisha P. (1992): The preservation of post harvest losses of hot smoked fish. For Award of a Diploma in Fish Technology, from Fisheries Training Institute - Entebbe.
- Kirema Mukasa C.T. and J.E. Reynolds (1989): Brief notes on fisheries Production marketing and Credit Facilities in Uganda. SEC. Field Report no.4FISHIN notes and records fisheries statistics and information system, FAO/UNDP.
- Kirema-Mukasa C.T. and J.E. Reynolds, (1990): Marketing and Distribution Aspects of Lake Victoria Fisheries in Uganda. SEC field report no 9.

--- *First Technical Report* ---

FISHIN notes and records. Fisheries statistics and information systems FAO/UNDP project SEC Field Reports.

- Kirema-Mukasa C.T. and Reynolds J.E. (1989): Marketing and Consumption of fish in Uganda. SEC. Field Report, no.....FISHIN notes and records fisheries statistics and information system, FAO/UNDP.
- Kudhongania A.W. and E.J. Coenen (1991): Trends in fisheries development, prospects and limitations for L. Victoria (Uganda) presented at the National Seminar on the management of the fisheries of Lake Victoria, 6th August, 1991, Jinja - Uganda. - 22pp.
- Luyombi, S.K., (1986): Sundrying of fish - BUTIABA. For Award of a Diploma in Fish Technology, from Fisheries Training Institute - Entebbe.
- Maraka J., (1992): Fresh fish landing and quality changes of fresh fish. For Award of a Diploma in Fish Technology, from Fisheries Training Institute - Entebbe.
- Mulambi R., (1992): Filleting in the fishing Industry of Uganda and its effects. For Award of a Diploma in Fish Technology, from Fisheries Training Institute - Entebbe.
- Nambohwe L.O., (1986): Handling and storage of fish products. For Award of a Diploma in Fish Technology, from Fisheries Training Institute - Entebbe.
- Ocen J., (1992): Effect of salt on preservation of Tilapia at the Islands of Lake Victoria. For Award of a Diploma in Fish Technology, from Fisheries Training Institute - Entebbe.
- Odongkara, O.K., 1986: Economic considerations in an expanded Nile perch production programme on Lake Victoria. UFFRO Seminar, 1986. 3 - 4 November, 1986. Jinja, Uganda.
- Odongkara, O.K., 1988: Economic Factors in the development of fish processing in Uganda. National Conference on the Status and Prospects for the Food Industry in Uganda. 19 - 21 September, 1988. Makerere University, Kampala.
- Odongkara, O.K., 1989a: Visit to Kasenyi Landing: 20th January, 1989. SEC Field Report No. 1, FISHIN Notes and Records. Fisheries Statistics and Information Systems, FAO/UNDP Project UGA/87/007. (May 1989).
- Odongkara, O.K., 1989b: Preliminary report on Kichwamba Region landings: 4th - 7th February, 1989. SEC Field Report No. 2, FISHIN Notes and Records. Fisheries Statistics and Information Systems, FAO/UNDP Project UGA/87/007. (May 1989).
- Odongkara, O.K., 1990: Socio-economic aspects of the Kome Island fisheries: Report of a trial frame survey; FAO/UNDP Fisheries Statistics and Information Systems: Socio-economic Field Report No. 12. Entebbe, Uganda.

--- *First Technical Report* ---

- Odongkara, O.K., 1991: A review of selected socio-economic aspects of production in the fisheries of Lake Victoria, Uganda: Second workshop on the recent trends in the fisheries of Lake Victoria: 25-27 September 1991, Kisumu - Kenya.
- Odongkara, O.K., 1992: Analysis to improve the fish commodity system in Uganda. - Notes for the working session of UFFRO researchers. UFFRO/IDRC Fish Commodity Systems Economics (U) Project. October, 1992.
- Odongkara, O.K., and R. Naikoba, 1991: Trip to the Masaka region fisheries: 29th to 3rd November 1991. socio-economic and statistics field report No. 1. UFFRO - Jinja.
- Reynolds, J.E., (1991): Resource stewardship and multiple use interests for a fisheries influx. Observations on L. Victoria - Uganda. Marketing and Consumption of fish in Uganda. SEC. Field Report no.13. FISHIN notes and records fisheries statistics and information system, FAO/UNDP.
- Reynolds, J.E. & O.K. Odongkara, 1989a: Preliminary notes on Iganga District landings. SEC Field Report No. 5, FISHIN Notes and Records. Fisheries Statistics and Information Systems, FAO/UNDP Project UGA/87/007. (May 1989).
- Reynolds, J.E. & O.K. Odongkara 1989b: Fish marketing and distribution in Tororo and Mbale Regions: a brief survey. SEC Field Report No. 7, FISHIN Notes and Records. Fisheries Statistics and Information Systems, FAO/UNDP Project UGA/87/007. (May 1989).
- Reynolds J.E. and W.M. Ssali (1991): Lake Victoria Fisheries Industrialisation recent developments in Uganda. SEC field report no. 12. FISHIN notes and records. Fisheries statistics and information systems, FAO/UNDP project UGA/87/007 SEC field reports 13:1-43.
- Semakula S.N. (1967): Survey of the present status of fish handling, preservation and marketing in Uganda. Occasional paper no. 1, Fisheries Department, Entebbe, Government Printer: 16-24
- Ssali W.M., J.E. Reynolds and R. Ogutu-Ohwayo (1991): Industrial processing investment and development for the Fisheries of L. Victoria - Present and future concerns. National seminar on management of the fisheries of L. Victoria, 6-8 (August) 1991 at Jinja - Uganda. 20pp.
- Ssali W.M., J.E. Reynolds and A.R. Ward (1990): Fish and fuel, food and forests, perspectives in Uganda: Paper presented at the symposium on Post Harvest Fish Technology, CIFA, 8th session, Cairo, Egypt 21 - 25 October, 1990.



— *First Technical Report* —

Ssali, W. & F Ssewankambo (1991): An assessment of the present levels of investment in the fisheries sector in Uganda with a view to recommending of future developments (Mimeo).

Trim D.S. and Currand C.A. (1983): A comparative study of sola and sun drying of fish in Equator. Tropical Institute 56/62 Gray's Inn Road London WCIX 8LU.

### III. CHARACTERISATION STUDY OF THE FISH MARKETING GROUP AS A MAJOR FISHERIES SECTOR COMPONENT GROUP

#### RESEARCH TEAM:

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#### 1. BACKGROUND AND JUSTIFICATION:

The fisheries sub-sector plays an important role in contributing towards the national economy. There are about 500,000 people deriving their livelihood from the fishing industry either through catching, processing, distributing, boat building or manufacture of other fishing implements. It provides a cheap source of high quality animal protein which is relevant to the nutritional needs of the country. Export of fish during 1991 was 1164 tonnes valued at US \$ 5.4m. It has both forward and backward linkages with other sectors of the economy, notably the boat building industry and the animal feed processors.

The marketing component of the fisheries sector provides the most important link between the source and the final end-user of the fish and its products. There is currently a growing potential for fish and fish product exports in Uganda, but the potential is presently constrained by the underdeveloped marketing system which results in high marketing costs and significant post harvest fish losses. Because the studies which have so far been carried out in the fish marketing have been limited and by no means exhaustive, planning of appropriate interventions to improve fish marketing in the country has not been possible.

#### 2. REVIEW OF PREVIOUS STUDIES:

As stated earlier, few studies have in the past been conducted on fish marketing in Uganda. CRUTCHFIELD 1958 is the first full-scale pioneer study of Uganda's fish trade during the late 1950s, only some aspects of the trade on Lake Victoria having been investigated earlier on. Since then other studies and reviews have been carried out (TDRI 1989 and the study by the team of Chinese experts in 1986.

These reviews were later up-dated by members of the Fisheries Statistics and Information Systems (FISHIN) project team who conducted a survey of markets during July -September 1990.(KIREMA-MUKASA & REYNOLDS 1991) The survey was, however, limited to Lakes Victoria, George and Edward.

#### 3. OBJECTIVE OF STUDY:

This is one of the studies under the project which is aimed at characterising the people involved in fish marketing as major sector activity.

It is intended to analyse the interests, strengths, weaknesses, and interaction of the fish marketing group with other groups of the fisheries sector and to assess its influence on total sector performance.

The output of the study will be comprehensive information of the fish marketing group, that can be used for policy and decision making.

The Specific objectives of the study will include:

- To identify categories of fish marketing group and areas where they operate.
- To identify resources and facilities available to the fish marketing group.
- To understand the institutional and organisation of the group.
- To assess the current status of the fish marketing sub-sector
- To investigate the constraints in the sub-sector.
- To formulate recommendations for policy interventions.

#### 4. METHODOLOGY:

##### 4.1 Survey design:

Data is being collected mainly using a questionnaire drafted and pre-tested as major instrument for the fish marketing investigation in the country. The questionnaire is divided into 3 parts.

- a) The first part seeks general information on each of the two types of markets, namely, an off-landing market and a landing market.
- b) The second part of the questionnaire seeks specific information on various types of fish traders who are categorised by mode of transport, viz as:
  - i) bicycle traders,
  - ii) pick-up/lorry/truck traders, canoe
  - iii) Stall sells
  - iv) Exporters

Secondly, data collection is done through interviews and discussions with some Fisheries Department staff and key informants e.g. Resistance Council members (RCs), businessmen and owners of markets in the study area. Information on the general functioning of fish markets is sought to supplement the primary data collected by questionnaire.

Secondary data sources for the study include libraries at such institutions as the Ministry of Agriculture, Animal Industry and Fisheries, Trade and Industry, Bank of Uganda, FAO etc. and are used to compare with the primary data of the study.

It is intended to conduct a nation-wide survey, covering a variety of areas of water masses and fish marketing activities of different intensities.

— First Technical Report —

The survey was planned to cover the following districts: Masaka, Kalangala, Kasese, Arua, Nebbi, Hoima, Masindi, Tororo, Pallisa, Jinja, Kamuli, Mpigi, Mukono, Kampala.

For each district one landing market and one off-landing market were planned to be visited and for each district about 50 questionnaires were to be administered. A total of 700 respondents were expected for the survey. A landing and an off-landing market were selected for the following reasons:

- i) To capture the different categories of fish traders, especially the fish exporters, who may not be found in any other market(s) other than the fish landings.
- ii) Landings were particularly selected to examine fresh fish traders who may not be available in distant off-landing markets where processed fish is predominant.
- iii) To get a deeper understanding of the constraints in the sector which may be specific to the off-landing markets.

A structured questionnaire was the main instrument used in data collection, supplemented by interviews/discussions with key respondents.

The secondary data was collected by reference to report/journals/pamphlets/publications/newspaper e.t.c.

## 5. IMPLEMENTATION:

### 5.1 What has been completed:

So far the following districts have been covered: Masaka, Kalangala, Kasese, Arua, Nebbi, Masindi and Hoima

### 5.2 What remains to be covered:

- i) The following districts are yet to be covered: Tororo, Pallisa, Jinja, Mukono, Kampala, Mpigi, and Kamuli.
- ii) Data processing and analysis.
- iii) Preparation and submissions of the final report.

## 6. PRELIMINARY OBSERVATIONS:

During this early stage of the study, the team has been able to make the following preliminary observations. These observations are subject to further confirmation during the course of the study.

### 6.1 Problem of distance and access roads:

Fishing areas (Landings) where most traders get their fish for sale are often far from major consumption centres. It is difficult to improve on the trade as even means of communication from landings to buying centres are

often very poor. Many roads are seasonal and during the rainy season when fish catches are greater, the roads are unpassable. A few traders such as bicycle men can ride up to these places, otherwise it requires heavy trucks to go through these rough roads.

#### 6.2 Organisation:

There appears to be no strong formal organisation among fish traders, a factor believed to be responsible for their failure to develop.

#### 6.3 Scattered markets:

Most traders offload their fish at markets which are scattered and distant from the sources. This reduces the frequency with which they can operate, and also requires them to deal mainly in processed fish.

#### 6.4 Accounting limitation:

Record keeping and accountability among traders is very poor. Many fail to make consistent estimates of their business requirements expenditures and on average. This mainly stems from the general lack of education and fisheries technical education. From the 3 Fisheries Regions visited, the majority are Primary five level and below. There are, however, some exceptional cases that have attained secondary school education level.

#### 6.5 Lack of Credit:

There seems to be no active Government or NGO assistance or direction in fish marketing. Activities are generally financed and managed by the private sector relying on its own financial resources.

#### 6.6 Pricing:

Most traders apart from long distance traders (i.e. those who sell across borders) buy and sell whatever type of fish they get. Not many traders have specialised in marketing specific types (species) of fish and as such the prices vary depending on how the trader got his fish, the fish catch at the lake, the distance he has covered in transporting and the taxes he has had to pay. Usually, however, stall operators tend to aim at making at least a 100/= - 200/= difference per head or piece of fish sold.

There is a general complaint about increases in taxes paid to various authorities before the trader can market his fish, reducing the profit margins.

#### 6.7 Other marketing facilities:

Fish products are still sold under poor conditions. At landings fish is just piled on the ground from where it is sold to traders. Most of the off-landing markets lack storage facilities especially as some markets operate on specific days of the week. But even in daily operated markets, storage facilities are lacking. Traders have to carry back home their left over fish products at the end of the day. Smoked fish is subject to rot usually after the 3rd day. Re-smoking is done at some off-landing markets (e.g. Nyendo in

Masaka and Kasese markets) but this just reduces the profit margins further. Traders are sometimes forced to buy just a few heads which they are sure will finish by the end of the day or two to avoid this problem.

7. EVALUATION:

Due to the sharing of certain project facilities with other research groups, particularly the vehicle, the study is running slightly behind schedule.

8. REFERENCE:

ADP (Agricultural Development Project), 1989: Fisheries Survey Report; Danish Rural Development Consultants (DARUDEC)

Bates, R.H. 1976: Rural Responses to Industrialization: A study of village Zambia. New Haven, Yale University press.

Doyle, C. 1982: Research on Agricultural Development in Sub-saharan Africa. A critical survey. MSU International Development paper No. 1 1982. Department of Agriculture Economics Michigan State University East Lansing Michigan.

Hoffman, A. and J.G. Disney; A. Pinegar; and J.D. Cameron 1974 "The Preservation of some East African Freshwater Fish" African J. Tropical Hydrobiology and Fisheries 3 (1):1-14

Kirema-Mukasa C.T. and Reynolds J.E. 1991(a): Marketing and consumption of fish in Uganda Occasional paper No. 4, FISHIN Notes and Records. Fisheries Statistics and Information System FAO/UNDP Project UGA/87/007 June 1991.

Kirema-Mukasa C.T. and Reynolds J.E. 1991(b): Market Survey 1990. Organisation, conduct and Preliminary results Social Economic Report No. 18 FISHIN Notes and Records, Fisheries Statistics and Information System FAO/UNDP Project UGA/87/007 (February 1991)

Ministry of Finance and Economic Planning (MFEP): Background to the Budget 1992 - 93: Economic Performance 1991 - 92 and Prospects for 1992 - 93., June 1992.

Odongkara, O.K., 1992b: The implications of the changing fishing pattern of Lake Victoria, Uganda for fish marketing development. Sixth Session of CIFA Sub-Committee for Development and Management of the Fisheries of Lake Victoria. February 1992. Jinja - Uganda.

Reynolds J.E. and Kirema-Mukasa 1991: Review of fish marketing in Uganda. Social Economic working paper No. 1 FISHIN Notes and Records. Fisheries Statistics and Information Systems, FAO/UNDP Project A/87/007 June 1991.

Staatz, J 1979: The Economics of cattle and meat marketing in the Ivory Coast. Ann Arbor, University of Michigan, CRED, Livestock Production and Marketing the Entente of West Africa Monograph 2.