

CONSTRAINTS ON THE GROWTH OF THE FISHING  
INDUSTRY IN WESTERN PROVINCE, 1924-1964

by

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DISSERTATION SUBMITTED TO THE UNIVERSITY  
OF ZAMBIA IN PARTIAL FULFILMENT OF THE  
REQUIREMENTS OF THE DEGREE OF MASTER OF  
ARTS (HISTORY)

THE UNIVERSITY OF ZAMBIA  
LUSAKA

1987

# DECLARATION

I, MABIA ERIC KASHIMANI, here by declare that this dissertation represents my own research work, and that it has not been previously submitted for a degree at this or any other University.

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### APPROVAL

This dissertation of MABIA ERIC KASHIMANI is approved  
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## ABSTRACT

This dissertation studies the constraints on the growth and development of the fishing industry in Western Province under colonial rule covering the period 1924 - 1964. The focus is the Central Zambezi Floodplain Fishery (CZFPPF). During the colonial period Western Province was transformed into a cheap labour reserve following the dislocation of the area's agriculture and the ban on the sale of cattle from the area as a result of the outbreak of Bovine Pluero-Pneumonia in 1915. Fishing was the only economic activity which would have provided income to the people and provide an alternative to labour migration. The CZFPPF though with the potential to develop a viable fishing industry could not do so because of the various constraints which militated against the efforts of fishermen in the area. As a result of these constraints people did not consider fishing as a viable rural economic activity capable of providing income and employment to lots of people. During the colonial period and despite the existence of a money economy, people continued to look at fishing only as a source of subsistence providing a small surplus for sale.

In studying the constraints on the growth of the industry, the dissertation examines the impact of the policies of the Colonial Government such as the imposition of tax and its consequence of labour migration on the growth of the industry. In the analysis the study has shown the roles played by the fishery's inaccessibility, low demand for fish within the area, transport problems to market-centres such as Livingstone and the Copperbelt and lack of government assistance to fishermen in retarding the growth of the

industry during the period of our study. Poor handling, marketing facilities and persistent low prices of fish forced many fishermen out of fishing to become labour migrants. The aristocracy which was the main authority over the fishery in the same vein posed a serious obstacle to the development of fishing in the area. Tenure in the fishery was a complicated affair. Productive fishing sites were privately owned and jealously guarded. This aspect presented a problem for the growth and development of fishing in the area, as most often, the productive sites were underutilized leading to underproductivity. The Northern Rhodesia Government lamentably failed to provide the necessary infrastructure to link the fishery to the markets on the Copperbelt and the towns on the line of rail to facilitate the transportation of fish from the fishery for sale.

## PREFACE

This study is an attempt to examine the various constraints which frustrated the growth and development of a viable fishing industry in Western Province between 1924 - 1964 - the Colonial period. The main emphasis of the study is to establish how far the problems of fishing in the area were a result of both internal and external factors.

In an undertaking of this nature, the first problem one has to resolve is to establish a starting point which has got some logical significance for the body of the whole work. I chose to start from 1924 when colonial office took over responsibility of ruling Northern Rhodesia. It was also around this time when some fisheries in Northern Rhodesia such as Mweru-Luapula started responding to the demands for fish from the mines of Katanga and later the Copper-belt of Zambia. From that time, fishing and fish trading became a source of income and provided an alternative to labour migration to lots of people who were involved in it. While this was happening to other fisheries in the country, fishing in Western Province continued to be carried out on subsistence level, providing only a very small surplus for sale because of some constraints which frustrated the efforts of fishermen. The aim of this study is to also examine the policies and attitudes of the Northern Rhodesia Government towards the fishing industry in the province.

The lack of statistical data on the amount of fish sold by Western Province fishermen during the period of our study is a very big limitation; it is virtually impossible to estimate the quantity of fish sold from the area. This, however, does not seriously affect the quality of this work.

In a work of this nature, it is virtually impossible to acknowledge all the help one gets from individuals and institutions. Specifically, I want to register my profound gratitude to Dr. M.C. Musambachime, Dean, School of Education, who supervised this study from inception to fruition and whose guidance I found invaluable. I gained alot from his firm grasp of the fishing industry in Zambia and his very penetrating critique of the material. His constant interest in my work in the midst of hectic academic and administrative responsibilities gave me unfailing support and encouragement to persevere and complete the work. I am also indebted to many people who gave me advice and valuable assistance during the preparation of this work and above all to my informants in Kalabo, Mongu and Senanga during the tiresome period of field-work. These did not only give me the valuable information I sought but readily extended their warm hospitality to me.

My thanks are also owing to Ms Anne Sumaili for typing the work. Lastly, I want to thank my fiancee Jessica Mukololo who gave me all the practical and moral encouragement I needed so much despite the fact that she missed my company and my services during the time I was writing this work. To thank her is to thank myself and to her I would say ni itumezi shaa for your understanding, patience, penetrating simplicity and humility as well as transparent honesty.

It is necessary to conclude the round of acknowledgements by stating that, while the foregoing have shared my burden in one way or another, they have no responsibility for the various opinions expressed in this study or any shortcomings it may bear; I, alone, am responsible.

"If you give a man a fish,  
he will have s single meal.  
If you teach him how to fish,  
he will eat fish the whole of his life".

[Lozi Proverb]



For my father, Mutete Kashimani and my late  
mother, Namatama Mulima Simbozi, who gave so  
much of themselves for my education and asked  
so little from me as their first born

## ABBREVIATIONS

|         |   |
|---------|---|
| AJTHF:  | African Journal of Tropical Hydrobiology and Fisheries.   |
| AR:     | Annual Report.  |
| BNG:    | Barotse Native Government.                                |
| BNS:    | Barotse National School.                                  |
| BNT:    | Barotse Native Treasury.                                  |
| BSAC:   | British South Africa Company.                             |
| BTF:    | Barotse Trust Fund.                                       |
| CZFPPF: | Central Zambezi Floodplain Fishery.                       |
| FAO:    | Food and Agricultural Organization of the United Nations. |
| GTCD:   | Game and Tsetse Control Department.                       |
| Km:     | Kilometre.  |
| Mn:     | Milimetre.  |
| NAZ:    | National Archives of Zambia.                              |
| NRG:    | Northern Rhodesia Government.                             |
| NRJ:    | Northern Rhodesia Journal.                                |
| RLJ:    | Rhodes-Livingstone Journal.                               |
| RNLB:   | Rhodesia Native Labour Bureau                             |
| SZFPPF: | Southern Zambezi Floodplain Fishery.                      |
| WNLA:   | Witwatersrand Native Labour Association.                  |

# CHANGED NAMES

| <u>Old</u>                         | <u>New</u>                            |
|------------------------------------|---------------------------------------|
| Balovale                           | Zambezi                               |
| Barotse Province                   | Western Province                      |
| Congo                              | Zaire                                 |
| Central Barotse Floodplain Fishery | Central Zambezi Floodplain<br>Fishery |
| Mankoya                            | Kaoma                                 |
| Northern Rhodesia                  | Zambia                                |
| Southern Rhodesia                  | Zimbabwe                              |

# CHANGED CURRENCY

| <u>Old</u>                          | <u>New</u>              |
|-------------------------------------|-------------------------|
| One Penny (1d)                      | One Ngwee (1n)          |
| Six Pence (6d)                      | Five Ngwee (5n)         |
| Twelve Pence (12d)                  | Ten Ngwee (10n)         |
| Two Shillings and Six Pence (2/-6d) | Twenty-Five Ngwee (25n) |
| Ten Shillings (10/-)                | One Kwacha (K1)         |
| One Pound (£1)                      | Two Kwacha (2)          |

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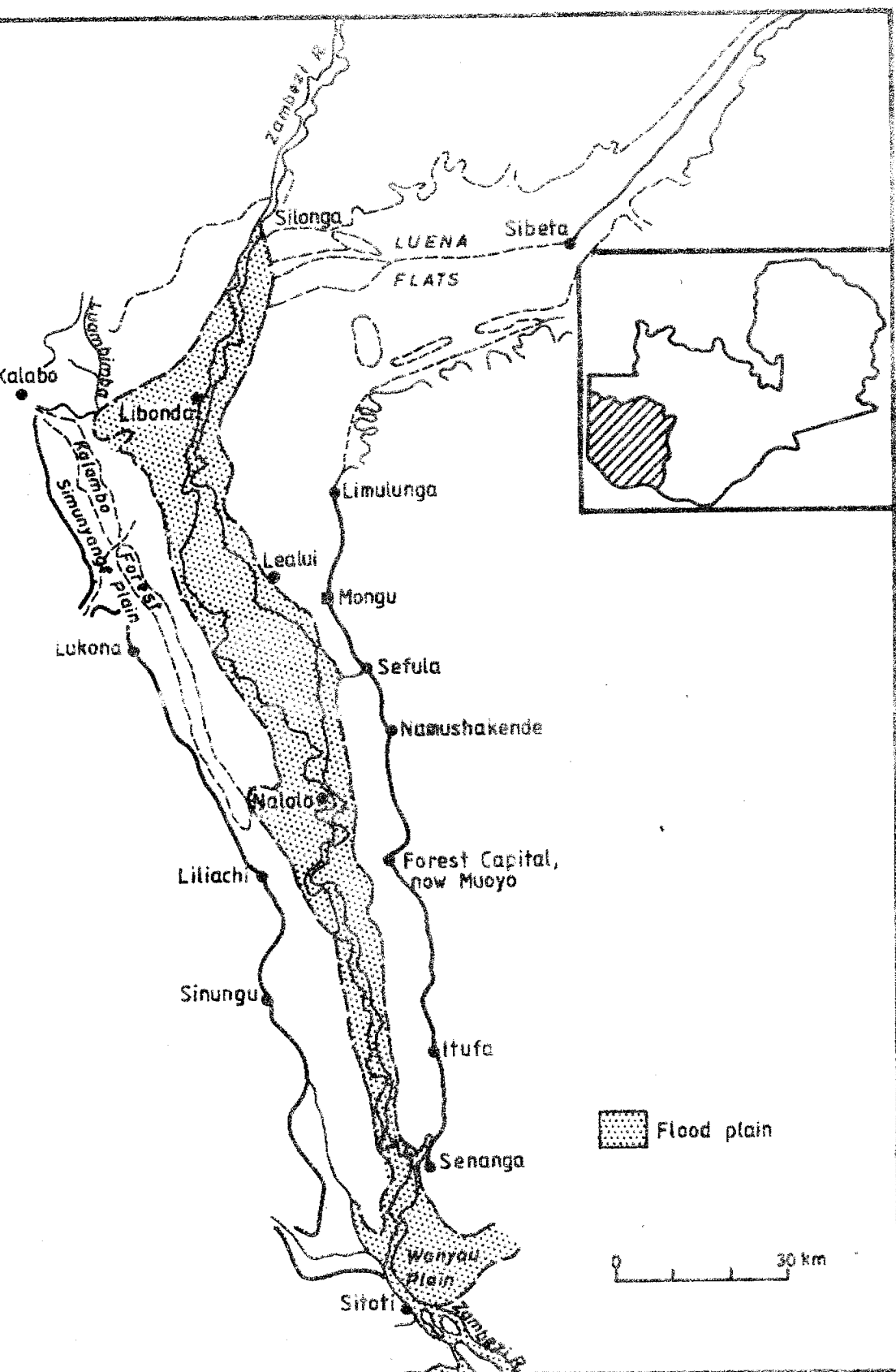
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## INTRODUCTION

Apart from Lake Bangweulu, other fisheries in Northern Rhodesia (now Zambia) have until recently received very little scholarly attention.<sup>1</sup> This neglect has been most noticeable in Western Province (formerly Barotseland) where scholars such as Max Gluckman, Eugen Leon Hermitte, Laurel Van Horn, J. Hellen and Gwyn Prins, who have written on the colonial economy of the province, have concerned themselves more with the deterioration of Lozi agriculture in their various works.<sup>2</sup> These scholars only mention in passing the problems which constrained the growth and development of the fishing industry. Such comments appear in Gluckman's work, though they are not detailed enough to give a reader a better understanding of both the magnitude of the problems and the role of fishing in the social and economic life of the area.<sup>3</sup> Moreover, Gluckman's discussions of fishing activities of the people serve only to confirm his anthropological studies of the Lozi as shown in his publications.<sup>4</sup>

The subject of this study is the constraints in the growth of the fishing industry in western province. The province has six administrative districts namely: Kalabo, Mongu, Kaoma (formerly Mankoya), Senanga, Sesheke and Lukulu which was established in 1969. Our analysis is confined to three districts of Kalabo, Mongu and Senanga which are situated on the upper Zambezi river system. In this river system there are two important fisheries: the Central Zambezi Flood Plain Fishery (CZFPP) stretching along the three districts of Kalabo, Mongu and Senanga. The other one is the Southern Zambezi Flood Plain Fishery (SZFPP) which is in Southern Province covering Nambova area, which is outside the study area

# MAP 1: CENTRAL ZAMBEZI FLOOD PLAIN FISHERY: THE STUDY AREA



Source: Mutumba Mainga, BULOZI UNDER THE LUYANA KINGS

This study has two major objectives. The first is to examine the organization of the industry during the colonial period and to assess the policies of the colonial government to see how they affected the growth and development of the industry. Secondly, to assess the impact of constraints such as low demand for fish, lack of dependable markets, transport difficulties, the problem of tenure in the fishery, labour migration, lack of government support and the predominance of the traditional, seasonal fishing methods, on the economic viability of the industry. By analyzing each of these factors we will be able to show how the industry was affected in the period of our study.

To the people of the fishery, fishing was a source of income. No statistics of the fish trade were kept by the colonial government because the fishery was a responsibility of the traditional government until 1969 when the Central Government took over.<sup>5</sup> Similarly, fishermen did not keep a record of their earnings from the sale of fish which varied from time to time as fishermen alternated between fishing, cultivation of their land and pastoralism.

Discussing the factors determining the growth and development of a fishing industry R.S. Rack has isolated three important requirements. These were the availability of important fish stocks in a fishery; a settled fishing population with adequate fishing gear and expertise and accessibility to stable and dependable markets.<sup>6</sup> During the colonial period CZFPF only satisfied the first requirement. The industry was sustained by traditional gear of dug out canoes, fibre nets, non-return traps, weirs, baskets, fish spears and hooks. During the colonial period, innovations in the gear started in the 1960s with the introduction of new nylon gill nets. The new nets were



stronger and more durable, but because they were expensive very few people could afford them. The result was that most fishermen continued to use the traditional methods of fishing which were seasonal in most cases. At independence, in 1964, traditional methods of fishing were still predominant in the fishery. Fishing as an economic activity during the period of our study was carried out on subsistence basis with a small surplus for sale within the fishery and the area surrounding it.

The thesis which will be argued in this study is that the fishing industry in the area did not develop because of a number of constraints. Among these: the colonial policies such as the imposition of tax which gave rise to labour migration which in turn affected the development of the industry; the indifference of the Northern Rhodesia Government (NRG) towards the industry and the self-interest of the Lozi aristocracy which failed to sacrifice some of its share from the Barotse Native Treasury (BNT) in order to develop the industry by constructing access roads that would have linked the fishery to the markets on the line of rail to facilitate the transportation of fish.

#### HOW THE CONCEPT 'INDUSTRY' IS USED IN THIS STUDY

In this study the term Industry means an economic activity providing income and livelihood directly or indirectly to lots of people who are either direct producers, middlemen or retailers.

#### NUTRITIVE AND ECONOMIC IMPORTANCE OF FISH TO THE RURAL POPULATION

In 1961, writing an introduction to his book the Fishes of Northern Rhodesia, P.N.B. Jackson, made the following observation:

At the present time the fishes of Northern Rhodesia are the country's valuable natural resources. The essential animal protein component of the diet of the people in the country is composed of fish and even apart from the big fisheries, every little stream and marsh near a rural population contributes its indispensable share to the food of the villagers. In terms of hard cash, also fish are the valuable resource, and it is true to say that the fisheries of our various lakes and larger rivers are the most important rural industries that have yet to come into being, and have annually been worth two or more million pounds to the people who participate in them ..... our fish have a great and growing contribution to make to the bringing of money in the country.<sup>7</sup>

Jackson, in his well selected words summarises the nutritive and economic importance of fish to the indigenous economies of the people and in the diets of the people. Fish are of major nutritional importance being an excellent source of proteins. Fish oils are a good source of vitamins A, D and B complex as well as calcium and phosphorous.<sup>8</sup> Proteins are essential for body growth and repair, and for the formation of anti-bodies (red and white corpuscles) which fight against diseases in the body.<sup>9</sup> If the consumption of fish could be increased, an improvement in the balance of the diet would occur and counteract the present effect of protein deficiency, particularly in infants, young children and breastfeeding mothers.

#### METHODOLOGY

Between July and October 1985, I read published and unpublished material on fishing in Western Province in the University of Zambia library, the Fisheries Library in Chilanga and the National Archives of Zambia (NAZ). Between October and December, 1985, I collected oral testimonies in form of informal interviews in

Kalabo, Mongu and Senanga districts. When I set out to do my field research, I had some obvious advantages. I knew the language of the area - Lozi. I also had a fair geographical knowledge of the study area and had background knowledge of the code of social conduct.

I found it best to collect the information I needed in an informal manner. I looked for and interviewed old men and women who were regarded as being knowledgeable about fishing. These were open-ended interviews, allowing the informants to volunteer any information they had with minimum interference from me. Sometimes I found it rewarding to ask my informants probing questions. This was necessary because certain kinds of information such as taboos regarding the eating of fish are only exchanged in conversations between intimate friends and are regarded as 'secret'.

A formal questionnaire was also prepared but proved to be unsuitable as a research instrument. Informants responded more positively to informal interviews and tended to distrust the use of formal instruments. Group interviews were also conducted at Libonda in Kalabo and Naliele in Mongu as a source of further information and public opinion. The methodological approach in this study has been to combine the written and oral material and to use them to supplement each other.

#### ORGANIZATION OF THE STUDY

To give the reader a better understanding of the issues discussed, the study is divided into three chapters. Chapter one discusses the geographical location of the fishery, fisheries ecology, fish species and the population in the fishery. Chapter two discusses the organization of fishing. It looks at the type of

gear and the methods used by fishermen to preserve fish. These chapters serve as a background to chapter three, which examines the constraints in the growth of the fishing industry in CZFPF between 1924 and 1964 in the Western Province of Zambia.

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## CHAPTER ONE

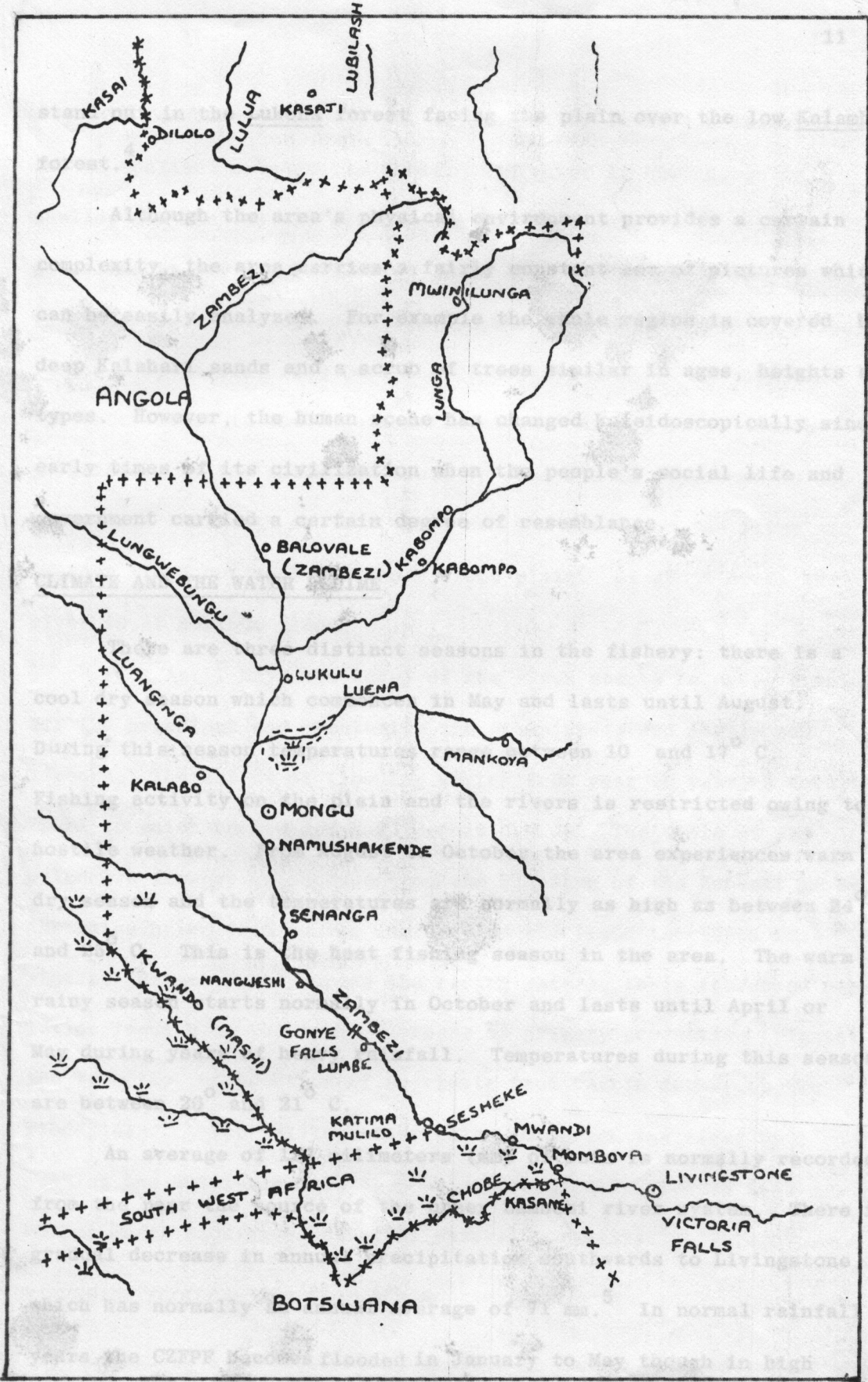
### GEOGRAPHICAL LOCATION OF THE FISHERY, FISH SPECIES, FISHERIES ECOLOGY AND POPULATION

Upper Zambezi river system is defined as that part of the Zambezi river and its tributaries from its source in the Mwinilunga district of Zambia ( $11^{\circ} 22'$ ,  $S24^{\circ} 18'E$ ) to the Victoria Falls ( $17^{\circ} 55'S$ ,  $25^{\circ} 49'E$ ). This river system is 1,440 km in length.<sup>1</sup>

#### CENTRAL ZAMBEZI FLOOD PLAIN FISHERY

CZFPP stretches along the Zambezi river approximately between  $14\frac{1}{2}^{\circ}$  and  $16^{\circ}$  south latitude for about 160 km, and at its widest is some 30 km across.<sup>2</sup> Long straight valleys except for the broadly marshy Luena flats mark the course of the Zambezi's tributaries. The presence of impermeable clays below the sands of the plain and its gentle gradient, cause the rain water falling at the headwaters of the rivers, chiefly on the Zambezi - Zaire divide, seasonally to flood the plain above the convergence of its margins near Senanga. The Zambezi river runs through the plain from North to South, in a bed of rich alluvial soils traditionally known as 'Ngulu' or 'Bulozi proper'. In this plain there are lakes, swamps, tributaries of the Zambezi, and together with the Zambezi these water bodies constitute the major fishery of the area.<sup>3</sup>

The plain is bounded on the east by the forest called Nyunyi with prominent hills such as Mongu, Mombo, Mutwiwambwa and Lianyi, overlooking the low-lying plain. On its western side is the Lukona forest, but parallel to it is the long low woodland belt of Kalamba interrupting the western edge of the plain. The hills of Sikundangombe,



stand out in the Lukona forest facing the plain over the low Kalamba forest.<sup>4</sup>

Although the area's physical environment provides a certain complexity, the area carries a fairly constant set of pictures which can be easily analyzed. For example the whole region is covered by deep Kalahari sands and a scrub of trees similar in ages, heights and types. However, the human scene has changed kaleidoscopically since early times of its civilization when the people's social life and government carried a certain degree of resemblance.

#### CLIMATE AND THE WATER REGIME

There are three distinct seasons in the fishery: there is a cool dry season which commences in May and lasts until August. During this season temperatures range between 10 and 17° C. Fishing activity on the plain and the rivers is restricted owing to hostile weather. From August to October the area experiences warm dry season and the temperatures are normally as high as between 24° and 25° C. This is the best fishing season in the area. The warm rainy season starts normally in October and lasts until April or May during years of heavy rainfall. Temperatures during this season are between 20° and 21° C.

An average of 137 millimeters (mm) of rain is normally recorded from the near the source of the upper Zambezi river system. There is gradual decrease in annual precipitation southwards to Livingstone which has normally an annual average of 71 mm.<sup>5</sup> In normal rainfall years the CZFPF becomes flooded in January to May though in high floods as was the case in 1948 and 1958,<sup>6</sup> the floods took very long to subside and this had an adverse effect on fishing as prolonged flooding may cause a decrease in the fishing effort.<sup>7</sup>



In November-December, the Zambezi river is at its lowest levels and is confined between its banks. The water in the lagoon is shallow and much of the swamp areas are just wet, boggy patches. The grassland is dry and baked hard, with much of the grass burnt. As the rain starts in November-December, so the river rises, fed by tributaries and by general rain over the floodplain area.<sup>8</sup> At this time the water level in the lagoons also rises. As the rainy season progresses, so the river continues to rise and is supplemented by the water from the North so that there comes a time when the river and lagoons flood out over the whole flood plain. By about April the river is at maximum flood.

From April-May, the level of the river starts to drop, draining off the grassland and eventually the swamp areas and lastly the lagoons. The extent of flooding varies from year to year as does the level to which the swamps and lagoons dry up. The whole of the extensive fishery is dependent on the flooding of the Zambezi river. The rains bring fish to the surface and the flood increases fish stocks. Breams breed during the rising waters, their increased population feeding on the rapid increase of primary production (plants) and from the introduction of nutrients from cattle manure on the floodplain.<sup>9</sup> The falling water helps to enrich the river by washing the nutrients into it but also drastically reduces fish environment, causing substantial natural mortality.

#### FISHERIES ECOLOGY: THE FOOD CHAIN

Compared with other river systems in Zambia, the waters of the upper Zambezi are relatively poor in nutrients.<sup>10</sup> As these nutrients comprise the foundation upon which the food chain is built, it is

not surprising that the upper Zambezi fisheries cannot support the biomass as the Kafue flood plain fishery. The production of both the flood plains, CZFPF and the Kafue in 1967 was: CZFPF 1,716 tonnes fresh weight equivalent and Kafue 2,895 tonnes.<sup>11</sup> These figures were only as a rough guide to the productive potential of the two flood-plain fisheries.

Because of low nutrient content of the water, phytoplankton, (small plant and animal life in water on which fish feed) is present throughout the year in extremely low densities in CZFPF and zooplankton is only available in significant quantities during the dry season, and then only in lagoons and backwaters. Zooplankton abundance is positively correlated with conductivity, but is apparently not greatly utilized by either juvenile or adult fishes.<sup>12</sup> Periphyton appears to be the basic food for the young of most of the commercially important fish species and is the major dietary component of four of the fifteen commercial species (Sarotherodon Macrochir, Tilapia Andersoni, Tilapia Sparrmanii and Mormyrus Lacerda).

#### THE FISH SPECIES

SCFPF Fishery had substantial different fish species. According to the findings of one fish specialist which was published in 1974, it was discovered that the fishery supported a total of eighty-four different fish species.<sup>13</sup> Out of these, Tilapia Anderson, Sarotherodon macrochir, Tilapia sparrmanni and Hydrocyrus vittatus comprised the major four of fifteen commercial fish species.

The overriding controlling factor influencing total biomass of fish in the fishery appeared to be the timing, height and direction of the annual floods. Unfortunately, data on annual fish production in the fishery over a period of time is not available, but a positive correlation between fish production and normal flooding has been

observed in the fishery by a fish biologist.<sup>14</sup>

A poor rainfall season would have the following effects on fish population. The flood waters would recede from the plain and tributary rivers earlier than normal years and would - (i) subject the adult fishes to a prolonged period of fishing and predator pressure in an environment where, due to increasingly low water levels, little natural protection, in the form of shelter for fish populations would be available; (ii) juvenile fish would be forced out of a relatively safe floodplain environment earlier than normal and, consequently at a smaller size. They would then be a potential prey for a greater size range of predatory fish species and for a longer period. The lagoons and backwaters associated with the main river, in normal years are used as refuges for juvenile fishes, would either dry up or become so shallow as to preclude utilization by young fish; most of the commercially important species commence breeding in the main river at the end of the dry season in conditions not sympathetic to the survival of the young. A prolonged dry season would result in extremely high mortality rate of these juveniles due to predation. The availability and quantity of alternative habitats (lagoons and backwaters) depended and continues to depend very largely on water levels and was one of the major factors controlling the size of populations of juvenile commercially important species and hence recruitment of adults to the commercial fishery.

The adverse effect of the predator Hydrocyrus Vittatus (Tiger fish) on commercially important species cannot be strongly emphasized. It was not only responsible for decimating stocks of juveniles and young adults but inhibits the utilization of at least sixty per cent of available water space for a minimum of five months of the year -

the dry season July to November in normal rainfall years.<sup>15</sup>

#### SOME OF THE COMMERCIAL FISH SPECIES IN CZFPF

| <u>SCIENTIFIC NAME</u> | <u>ENGLISH NAME</u> | <u>LOZI NAME</u> |
|------------------------|---------------------|------------------|
| Hydrocyrus vittatus    | Tiger fish          | Ngweshi          |
| Clarias mossambicus    | Barbel fish         | Ndombe           |
| Sarotherodom macrochir | Bream               | Njinji           |
| Schilbe mystus         | Silver barbel       | Lubango          |
| Tilapia melonopleura   | Red-breasted bream  | Mbufu            |
| Tylochromis mylodom    | Hump backed bream   | Singongi         |
| Chrysichthys mabusi    | Armoured-cat fish   | Mulumesi         |
| Barbus stappersii      | Yellow fish         | Sibutu           |
| Eutropius nasalis      | Silver-cat fish     | Minga            |
| Labeo altivelis        | -                   | Ndikusi          |
| Gnathenemus monterii   | -                   | Nembele          |
| Tilapia rendalirendali | -                   | Nembwe           |

#### POPULATION AND OCCUPATIONS

The western province was sparsely populated and in 1962, the Annual Report of the Ministry of Native Affairs put the total population at about 363,500 people who were scattered on the plain and plain margin.<sup>16</sup> The area was made up of twenty-five main ethnic groupings who spoke similar languages. The main group was that of the Lozi who inhabited the plain from North to South. Kalabo area had the Makoma and Mwenyi who lived along the forest edges of the Luanginga river valley, the Nyengo of the Nyengo plain, the Imilangu and the Liuwa. These people had several unifying factors. They had cultural linkages such as that of languages, food, dress and religion as well as common historical experiences.<sup>17</sup>

In Mongu area, the eastern side of the plain was inhabited by the Kwangwa, a breakway group from the main Lozi of the plain under their leader Mange, the son of Mboo's sister Nolea. Mange led his groups from the plain and established himself in the forest of the eastern margin of the plain.<sup>18</sup> The southern region was inhabited by the Kwandi, a group which had gone south to Senanga under Mboo's younger brother Mwanambiny. The Mbunda came to Western Province during the long reign of Litunga Mulambwa and were settled in the area around Mongu and others in Kalabo and the west of Senanga. Now the Mbunda are scattered all over Western Province. Although these groups, though assimilated, retain their individual ethnic identities. There is considerable intermarriage between the Lozi and other group.<sup>19</sup>

The Lozi were farmers, cattle herders and fishermen; they hunted and gathered wild fruits when these were in season. They had a viable mixed economy. Fishing, cattle-keeping were the chief elements in the local economy, which if hardly a prosperous one in absolute terms, yet produced in the eighteenth and early nineteenth centuries a higher standard of living in the plain than in most other areas of Central Africa.<sup>20</sup> These elements in turn depended upon the control of the highly productive mounds (Liuba) which dotted the plain. The king was the "owner of the land" and he was responsible for allotting it to his subjects.

In all the three chief elements of the local economy, the flood played a vital role: Flooding of the valley to allow the fish to spawn, and when it receded, it left well watered areas which allowed cultivation of multiple crops and the grazing of cattle on the lush grass. Gardens were covered, uncovered and watered by it, fish moved with the waters, cattle retreated and returned as grazing sites were drowned and emerged. The flood compelled not only the Lozi but also living things, to move out of

the plain to higher ground. Fish migrated to spawn and to search for food depending on the movements of the flood.

### FISHING

The Lozi had been fishing from time immemorial. They were keen and skilled fishermen. Gluckman recorded that they had twenty-two ways of catching fish, according to the state of the flood and the prevailing weather condition, and again these methods of fishing were used at widely separated places at one season.<sup>21</sup> The major ways of catching fish have always been by netting, trapping, spearing and the use of long lines with hooks. Fish poisoning was another method of catching fish and was extremely used in the fishery but was prohibited in 1958 by the Litunga because of its destructive effect on the fish stocks. During my field research, my informants were agreed that five major ways of catching fish were now used as opposed to the twenty-two recorded by Gluckman in 1941.

Because of the political status applicable to the western province prior to Zambia's independence in 1964, the fisheries were the responsibility of the Barotse Native Government (BNG) and not the Central Government as was the case of all Zambian fisheries. The fisheries division of the Department of National Parks and Wildlife was not allowed to operate in the province except at the express permission of the Litunga. The fishing waters were divided into public and private. Lagoons, lakes and the most productive parts of the rivers and backwaters were privately owned by the aristocracy. Fishing in such areas was prohibited as it was reserved for the owners. Fishing in such areas could only be done with the consent of the owners.<sup>22</sup> Public waters were those deep parts of the rivers

which were unproductive. This was where the commoners were allowed to fish. The tenure in the fishery had an adverse effect on the fishing activity.

Fishing was a source of livelihood providing relish (busunso) eaten with (buhobe) a thick porridge made from millet, sorghum cassava or maize which formed the staple for the people. Fishing was a way of life in an established division of labour. Most of the fishing in the Zambezi and her tributaries was by men. Women fished for small species of fish in smaller streams, drying up pools and swamps.<sup>23</sup>

Fish, dry or fresh was either cooked or roasted. People who inhabited the forest margins of the plain mainly ate cooked fish because firewood was easily available. Those in the plain more often than not ate roasted fish due mainly to non-availability of firewood. Eating of fish was governed by certain rules which had to be observed. Where a big fish was cooked, the head (toho) was given to men and the tail end (muhata) was for women. But this rule was not always observed when smaller fish species were cooked. The eating of fish was regulated by prosaic taboos. People who were sick and were on medication observed a taboo of refraining from eating certain species in accordance with the instructions of the medicineman (Ng'anga). There was a belief among the people that if the patient defied the instructions of the medicinemen, that would prolong their illness or render the curative medicine useless.<sup>24</sup> Also before puberty, (mwalanjo), a girl was not allowed to eat fish gills for fear that they would make her labia become hard.<sup>25</sup> This taboo is still strictly observed even to day.

## AGRICULTURE

Agriculture provided the bulk of food. The Lozi used hoe and axe technology. They grew many kinds of cereals, root-crops, pulses and cucurbits in about a dozen different gardens. With fluctuations of the flood, it provided the opportunity to the Lozi to harvest more than once in a year.<sup>26</sup> However, this was the position in a good year, when the rains came in time and the flood was not early or too high; for in many years the people of the plain have been seriously short of food, since their gardens, dependent on flood conditions, were spoilt not only by high and low floods, but also if floods came earlier than usual.

## CATTLE KEEPING

Cattle keeping was done side by side with agriculture and fishing. Pasturage in the plain was free except for the Litunga's right of priority. Most of the cattle were owned by the Litunga and his family and the Indunas. Accumulation of large herds of cattle represented a more durable form of capital. Cattle were highly valued by the people for milk, meat occasionally, hides, trade and at times as a medium of exchange in the marriage transactions or in settling disputes occasioned by adultery, theft and homicide between villagers and kin groups. The presence of cattle on the flood plain resulted in a conversion of vegetable matter into forms most readily utilisable directly or indirectly by fish. The hippopotami also perform a useful service in converting vegetable matter to food and by depositing their faeces in the water during day light hours. By constantly disturbing the riverbed, nutrients essential to fish stock in the fishery are released.



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## CHAPTER TWO

### ORGANIZATION OF THE FISHING INDUSTRY

The aim of this chapter is to explain the organization of the fishing industry in the C Z F P F of western province. The chapter will focus on the different types of fishing devices and the methods used in catching fish; fishing craft; the different types of fishermen and the main methods used in the fishery to preserve the fish. Marketing of fish, since it was one of the contributing factors which retarded the industry in the area will be dealt with separately in the next chapter. This chapter, like the one preceding it, will help to serve as a background to the main discussion which will follow in the third chapter.

#### FISHING ACTIVITIES

Before fish became a "cash crop", villagers in the fishery managed to catch sufficient fish without venturing far afield. The fishing waters were said to have been more abundant and the population of the inhabitants of the fishery was smaller. Normally, fishermen would go out for a few hours in the morning and return with relish for a day. It was not therefore necessary for the fishermen to make an operational base away from home.<sup>1</sup>

During the time of plenty, fishing was essentially for household needs and some surplus for exchange. The fishermen used locally fabricated materials and their methods of fishing have been referred to by Jackson as "subsistence oriented and technologically backward".<sup>2</sup> Despite their backward nature, these methods of catching fish were practised by people throughout the colonial period. The methods were of great interest and demonstrated great

ingenuity on the part of the fishermen in the use of local material.

Besides fish poisoning, fishing consisted of variations on the five types of hooks, non-return traps with or without barriers or mazes to guide the fish into them and moving gear either scooped up or plunged down usually baskets. Traditional nets made of bark fibre were also universally used in the fishery. These gradually underwent modifications and innovations with successive improvements in the materials used. After 1960s nylon gill nets replaced earlier nets which were made of cotton. Nylon gill nets were more durable and less visible to the fish.<sup>3</sup>

Lozi fishing was closely associated with local ecological conditions provided by the rivers running in the broad floodplain and subject to seasonal inundations. There was a succession of conditions which might be traced from the beginning of the rains through the period to the dry season when the flood subsided leaving pools. Fishing was essentially an annual cycle of activities correlated with the environment with suitably adjusted techniques.<sup>4</sup> The main Lozi fishing season may be said to begin with the spawning of the fish. This normally occurred when the water level started to rise in the drainage depressions of the Zambezi river and her tributaries from November to the end of the year. Men and women used different methods to catch the fish.

Fishing was carried out on two levels: for consumption and for sale. The earlier subsistence methods were adversely limited by the yearly flooding cycle of the fishery. Fishing methods such as spearing in the shallow lagoons during the flood, weir-trap combinations at lagoon inlets and outlets during falling flood, small active nets in the same conditions, and other passive gear,

traps and reed fences along the vegetation fringe at high water, were all suited to subsistence production by low-density populations under increased flooded area and periodic local concentrations.<sup>5</sup> The hydrological regime and in turn the dispersion and semi-random movements of the fish particularly over the floodplain during the flood, thus placed constraints on the fishing activities in the fishery.

### FISHING SEASONS

It is simple to divide the year according to the method which was employed because many of the times use of particular methods overlapped. Generally speaking it was possible to catch fish all the year round. But during the time of high water from December to April the water area is vastly increased and fish are scattered over a greater area. Naturally they are not so easy to catch in nets, so, during this period a few fish may be caught for home consumption but the rains and clouds preclude any drying for sale.

During July and early August the winds over the lakes, lagoons and the rivers were cold as well as rough. The water was also choppy and here the fishermen could not cast their nets. Also the biting winds discouraged most fishermen to leave the warmth of their homes to venture in the colds of rivers and lakes. Therefore, in this season only a little fishing was done. The best fishing season was from August to December, the dry season. During this period, fish were confined to the permanent lagoons, swamps and river channels, there was intense fishing activity. Communal fish drives were common in the flood plain pools. Poisoning of pools was also common and generally such areas were fished out completely at some time during the period. Fishing in the river channel was pursued

with a wide variety of nets.<sup>6</sup> The effectiveness of the fishery in the dry season varied inversely with the amount of the water remaining in the system. In periods of extreme "draw down"<sup>7</sup> fish were concentrated and easier to capture. In this way fishing mortality as well as natural mortality increased with the decrease of water.

During the period of rising water, fishing activity was intense and was particularly aimed at the capture of fish migrating in the river channel. As the floods increased, the technical difficulties of fishing in the high currents and dispersion of the fish over the wide plain made yields low. During this period, the effectiveness of fishing depended largely on the intensity of the initial stages of the flooding. Rapid and high floods dispersed the fish more quickly and currents interfered with the efficient working of some kinds of gear used.

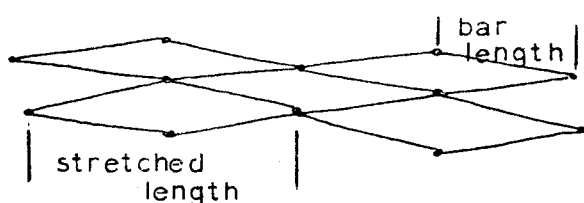
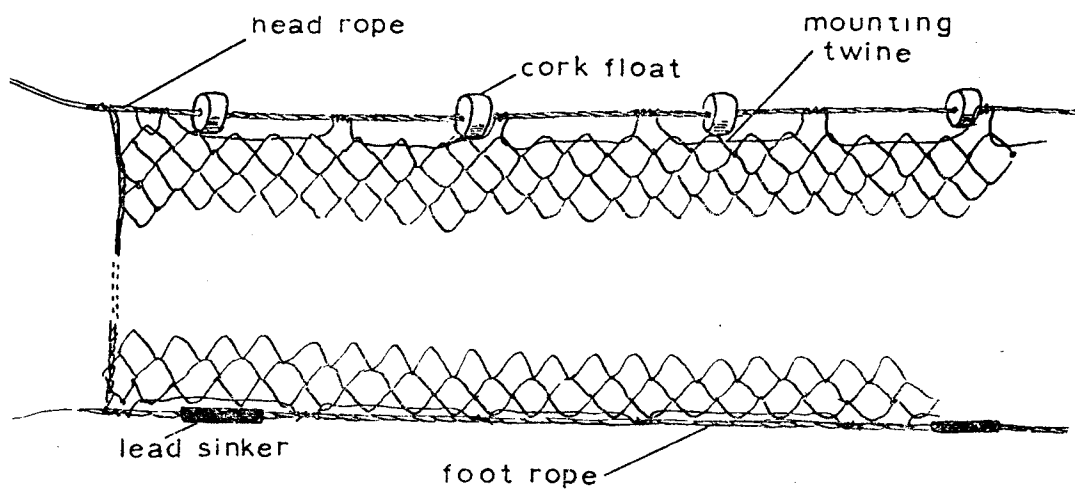
### TRADITIONAL FISHING GEAR

#### Nets

There were different kinds of nets which were used, these include gill nets, lift-draw nets (Lituwa) and a very large draw net (Sikundi) which was used during the reign of Lewanika.<sup>8</sup>

#### Gill Nets

Before 1960s, most of the gill nets were made from the bark fibre coming from roots of a tree known as Mutuya.<sup>9</sup> The fibres were first soaked in water for a number of days to make them soft. People who made the nets were those who inhabited the forest margins of the plain where such trees were found. In making the nets they began rolling the fibre on the thigh to produce a yarn of variable diameter and was then twisted into a two ply yarn (muhalala) of uniform thickness, the yarn was then used in the making of the nets. The head or



MEASUREMENT OF MESH SIZE

DIAGRAM 1: FISHING WITH GILL NETS

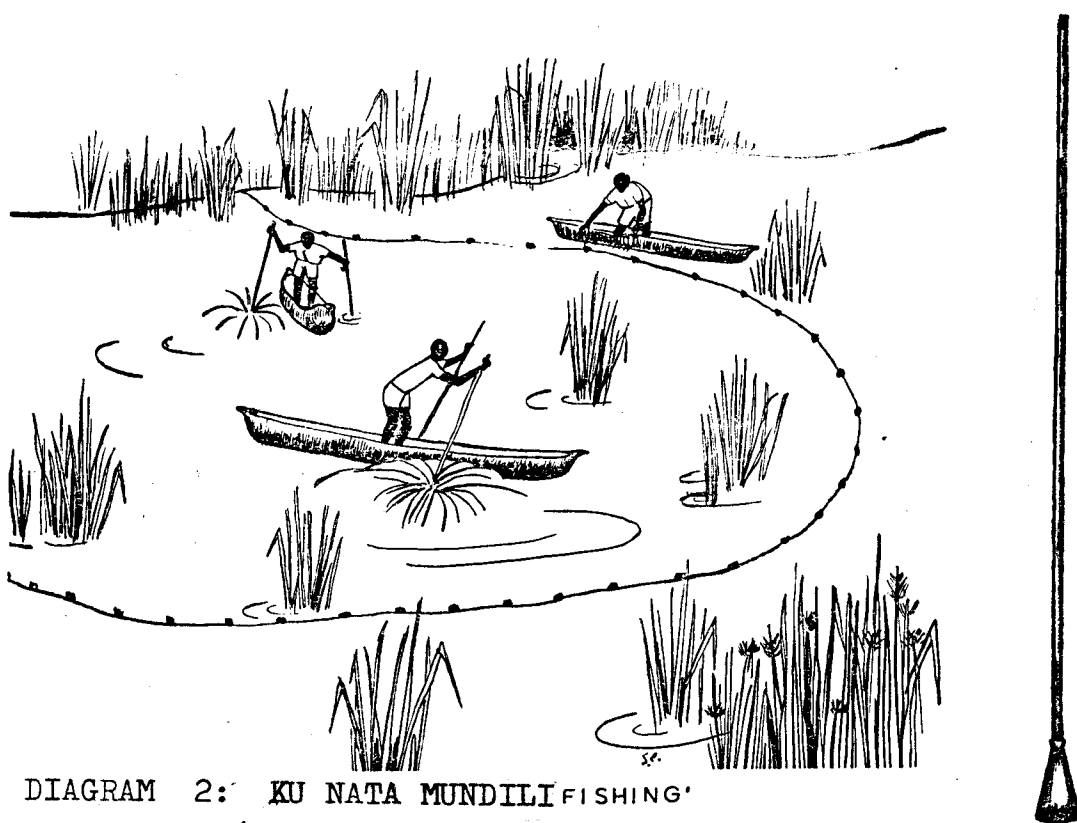


DIAGRAM 2: KU NATA MUNDILI FISHING'

(fish driven into nets by beating water with a pole)

SOURCE: Mortimer, Fish and Fisheries of Zambia. 39.

foot ropes when used were similarly woven. Floats, which were used were made of papyrus and were bent double. These only lasted a matter of a month before being replaced. Foot ropeweights when used were made from clay or were merely attached stones. This type of gill net was not efficient but could still be found in the fishery as late as 1966.<sup>10</sup>

Each net had a uniform mesh, measured in the number of fingers indicating the size of fish intended to be caught. A mesh of four fingers was used to catch bigger fish and a three finger mesh was for medium sized fish while two fingers was for the smaller species. The fishing nets were constantly dyed to suit the turbidity of the water in which they were going to be set.<sup>11</sup> Gill nets were used at high water, both in the open river and broad lagoons and flooded meadows of the plain. Two or one man in a canoe can handle a large gill net as the process requires much less labour. The main stumbling block when using this type of net was that, its life was very short because the fibres rotted quickly. With innovations in the making of nets, at the time of independence in 1964, half of the nets in the fishery were made of nylon and these became more popular after 1964 as the store owners in the area started to obtain them more easily from Nkwazi net manufacturers in Kafue.<sup>12</sup>

Gill nets were used in two different ways. The most popular one was the one where nets were set in all available still water habitats. They were often left in the water for periods of up to two weeks and only visited early in the morning to remove the catch. This method was called (kulaleka). The second one was joining together several nets in order to cover a big area. The joined net was spread out and was held down to its full width by small stones used as weights. The fishermen then moved off in their canoes to



form a wide, rough circle facing the net and perhaps two hundred meters away from it if reeds permitted. Then the line of fishermen moved slowly towards the net striking the water with puddles every few meters in order to frighten the fish into moving in front of them. When the net was reached it was pulled up from the canoes and the fish caught in the net were taken out. They were killed with a stick in order to stop them flopping out of the dug-out canoes. This method of using a gill net was also used in fisheries such as Mweru-Luapula and Bangweulu.<sup>13</sup>

This method was mostly used as a substitute whenever catches by other methods dropped below the subsistence or profitability line and as an easier way of gaining quick profit. It was proscribed in Zambia due to the opinion of the fisheries department that it was harmful to fish stocks. The third way of using a gill net was to set the net and let it drift down with current, catching fish as they swum up stream.

#### Lift-draw Net (Lituwa)

A combined lift draw net was used by the Lozi on the fishery. The device consisted of a square net of large mesh some (12.2) metres each side and made from bark fibre like the gill nets. Ropes were attached to two adjoining canoes and a single large stone to the foot rope between them. Along three-quarters of the three sides were big floats formed by folding large pieces of papyrus in half and tying the middle of the net. The net was piled into two canoes which proceeded together to suitable sites, deep backwaters or lagoons. Casting the net into deep waters in a loose heap, fishermen carried the ends of the two ropes to an adjacent bank or reed bed, to which

they held on. The ropes were hauled in so that the remainders of the net was extended under water and drawn a short way.<sup>14</sup> Then at a signal each canoe was beaten with paddles. The base of the net was then quickly lifted into the canoes so that the remainder of the net formed a complete bag. This, too, was drawn in, though at a more leisurely rate, together with the catch and was ready for the next setting. The lift draw net was seldom used and was proscribed in 1951 partly as a conservation measure.

### Traps and Weirs

There were two types of traps used by Lozi fishermen. The Litumba is cylindrical in shape, approximately one meter in diameter, up to two metres in height (depending on the depth of the water to be fished) and constructed of reeds or thin wooden poles. There were two opposing entrances with valved inlets. The device was usually unbaited and sited in vegetation near the river bank or on the flood plain. It was not an efficient device but did provide fish on subsistence level. The katamba consisted of a reed mat which was placed in shallow water. It was heart-shaped in cross-section with the two sides forming a valve-shaped entrance. The trap sometimes had a built in base so that the whole apparatus might be moved and any catch may literally be poured out of the opening at the top. The trap was baited with maize or cassava meal but like the Litumba, it was not an efficient fishing device. The catch might be as little as six fish a week with clarias species predominating.<sup>16</sup>

Fishing by means of fish weirs involved two important things. First, a kind of barrier (of earth or reed mats) was built across a stream to impede the movement of fish in which the stream flowed.

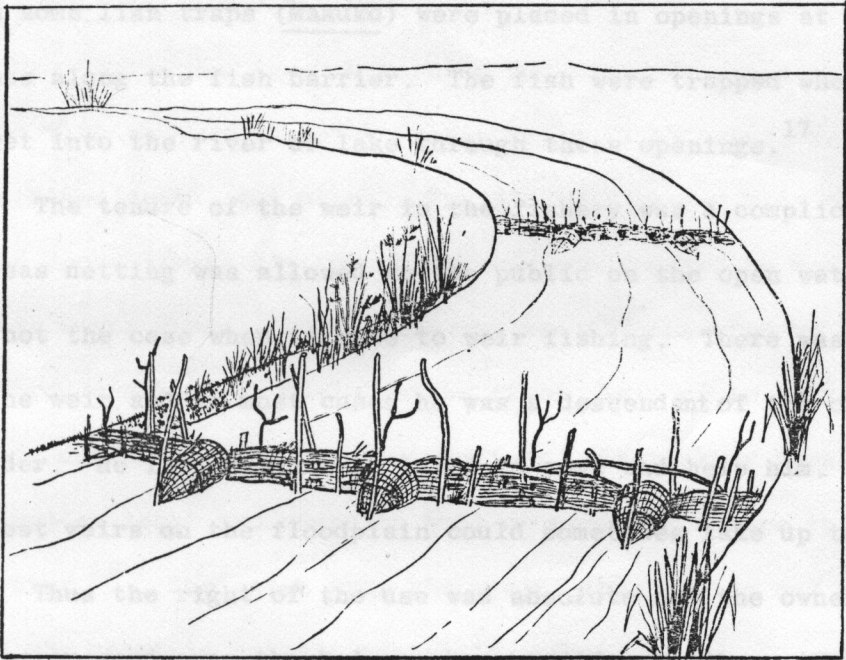
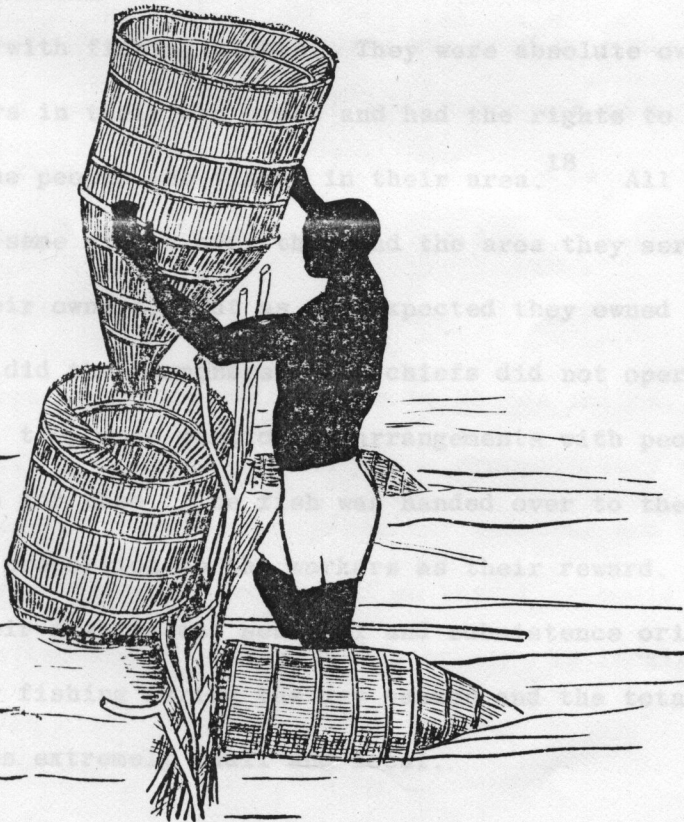


DIAGRAM 3: fish weirs built across a dambo stream



emptying the trap

Then some fish traps (Makuko) were placed in openings at various points along the fish barrier. The fish were trapped when trying to get into the river or lake through these openings.<sup>17</sup>

The tenure of the weir in the fishery was a complicated affair. Whereas netting was allowed to the public on the open water, this was not the case when it came to weir fishing. There was one owner of the weir and in most cases he was a descendant of the original builder. He invited those he liked to come and help him. The largest weirs on the floodplain could sometimes take up to ten men.

Thus the right of the use was absolute and the owner might refuse or send away the helper whom he did not like. An individual weir owner had right over his own weir and over the section of stream or area of water affecting that weir, and the section was guarded jealously.

The Litunga and his subordinates acted in dual capacity in connection with fishing rights. They were absolute owners of one or two weirs in their own areas and had the rights to demand tribute from all the people who fished in their area.<sup>18</sup> All chiefs owned weirs with same rights over them and the area they served as had commoner weir owners. But as was expected they owned far more weirs than did the commoners. The chiefs did not operate the weirs themselves, they made particular arrangements with people who worked them for them. The fish was handed over to the chiefs who returned a proportion to the workers as their reward. Like the Litumba, weir fishing was seasonal and subsistence oriented. There was no weir fishing during the dry season and the total area fished by weirs was extremely small and local.

### Drag Basket (Lishing'o)

The device was used throughout the floodplain and small rivers. Shaped like an oval shopping basket up to (2.5) metres in length with a width and depth of a metre. The open was braced with one or two wooden cross-struts and the basket was constructed by men from closely woven reeds. The device was usually operated by women wading through drying up pools in the flood plain or in tributary streams during seasonal fish migrations. The larger baskets often required at least two women to pull or push the device through the water.<sup>19</sup> The catch from the use of this device was not sold as it was meant to satisfy household needs.

Another type of basket used to catch fish was called Lingunde. Basically a cone of reeds or sticks, up to a metre in height, with an aperture at the apex, through which the catch was removed. The basket was thrust through the water on to the bottom at pre-selected sites. Like drag baskets the device was used by women working together as a team in areas which were suspected to harbour concentrations of fish such as drying up pools. The catch from the use of such a device was for the pot and not for the market.

### Fish Spearing

Fish spears were normally made by Mbunda smiths. The spears were made with either one, two or three prongs. They were usually 30.48 centimetres long about one-quarter diameter and had the square edges serrated and roughened so that fish could not wriggle off. The hafts, sometimes two metres or more in length, were of straight tough river reeds or wooden poles.



DIAGRAM 5: LINE FISHING

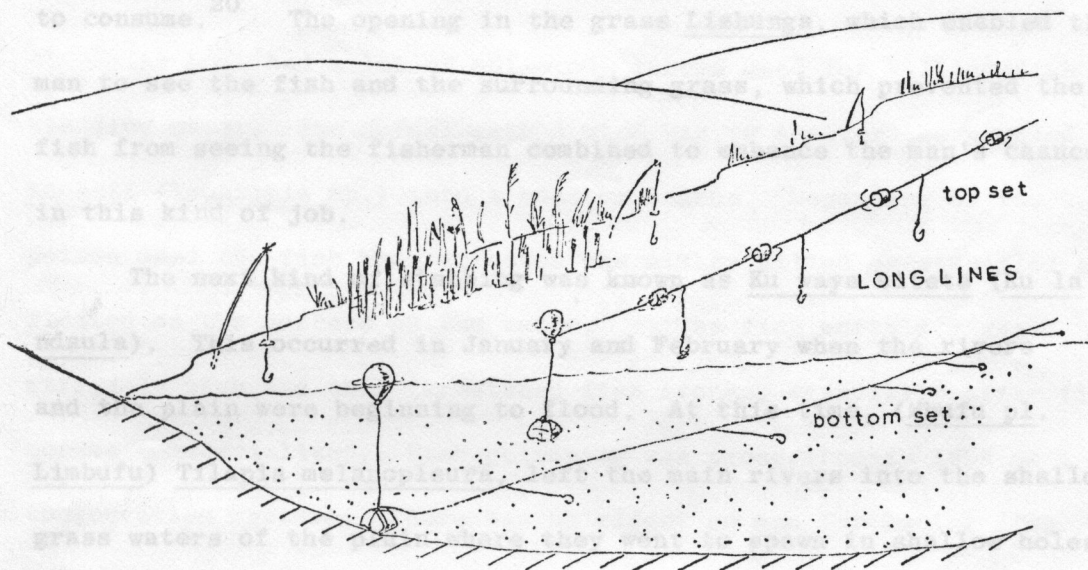


DIAGRAM 6: FISHING WITH SPEARS



Fish spearing was often carried out as an individual enterprise, where a man stabbed for fish alone for his family's needs, this system took three distinct forms. First, there was what was called Kushungamena. Using a very long-handled spear, a man would sit on the bank of the Zambezi or in a canoe looking patiently in an opening in the grass about him, to stab any fish that would pass through it. Depending on the fisherman's skill, the availability of fish at the time and place, as well as the weather condition, this kind of stabbing not infrequently provided enough fish for the man's family to consume.<sup>20</sup> The opening in the grass Lishunga, which enabled the man to see the fish and the surrounding grass, which prevented the fish from seeing the fisherman combined to enhance the man's chances in this kind of job.

The next kind of stabbing was known as Ku waya sitete (Ku la ndaula). This occurred in January and February when the rivers and the plain were beginning to flood. At this time, (Mbufu pl. Limbufu) Tilapia melanopleura, left the main rivers into the shallow grass waters of the plain where they went to spawn in shallow holes. During the time of rising water fishermen criss-crossed the flooded areas of the plain in their neighbourhood in their dug out canoes stabbing any Mbufu that failed to escape from its (nest) breeding place in time.

The third type of stabbing which is locally known as Ku waya, was unlike the first two, often undertaken in groups. Ku waya masa was stabbing for fish in fish pans when these became fairly dry, mainly in the months of August, September and October. The operation was conducted in groups for a number of reasons: one reason was security. Since most fish pans were found in the plain many kilo-

meters away from the villages, the Lozi must have deemed it necessary to do this kind of job in groups for mutual protection.<sup>21</sup> However, it appears that the need for efficiency also counted for the group activity. It was difficult for a lone man to make good catch in a fish pan, since fish would easily escape to safer areas in the pan. This handicap could be avoided by working as a group. Most of the catch by the use of this method was for the pot with very small surplus for sale.

### Fish Poisoning

The Lozi had a lot of poisonous tubers used for killing fish in standing water. The normal method used was to scatter the pounded Kambeti (Tephrosia Sp.) into a pool or lagoon. Depending on the poison used the fish when affected was either killed or stupified and floated on the surface of the water.<sup>22</sup> The fish mortality was extremely high and this threatened fish stocks, especially after fishing became commercialized. Fish poisoning was proscribed in 1958 as a conservation measure. There was no effect on man for eating fish killed by the poison.

### Hooks (Kushuta)

Hooks were used in two different ways. The first one was to tie a single hook to a long line and that hook was baited with worms, fish entrails or some piece of meat. The line was then immersed in a pool, stream or backwater. The bait attracted the fish which came to eat at the baited hook and caught in the process. The method was more or less like angling. The catch was small and could only be used to meet the household needs.



The second form of using hooks was where a fisherman tied a number of baited hooks on a line. The line was stretched across an open stretch of water, just under the surface, and the ends attached either to the reeds at the sides of a channel or to poles stuck deep into the mud of open lagoons. The line was set in the early morning and collected in the afternoon or put in overnight.<sup>23</sup> The type of fish caught by this method were Tiger fish and Barbel. These two species were in most cases too big to be held by ordinary angling method. It was practised between June and December when the water level was low because it was difficult to find a good attachment when the rivers were in high flood.

#### NEW GEAR

##### Nylon Gill Nets

The introduction of nylon has materially improved the efficiency of the gill net and is in general use at the present time. The gill net is responsible for over ninety per cent of the dry season catch. The new nylon nets which were introduced into the fishery in the 1960s also could be set by a lone man or a crew of two or three. Once set, the nets may be left in place for several days if catches were adequate. The fishermen visit them daily to remove the catch and move them when they wish.<sup>24</sup> Gill netting is effective in open or vegetated and shallow water. The use of gill nets requires highly selective fishing for those species predominantly occupying still water habitats such as the cichlids. The flexibility of the gill net is high but at times its returns can be low because of the insufficient attention given to repair. The poor maintenance of nets has a very serious adverse effect on the efficiency of the nets.<sup>25</sup> Moreover, gill net fishing has always been confined to the lagoons and backwaters that comprise

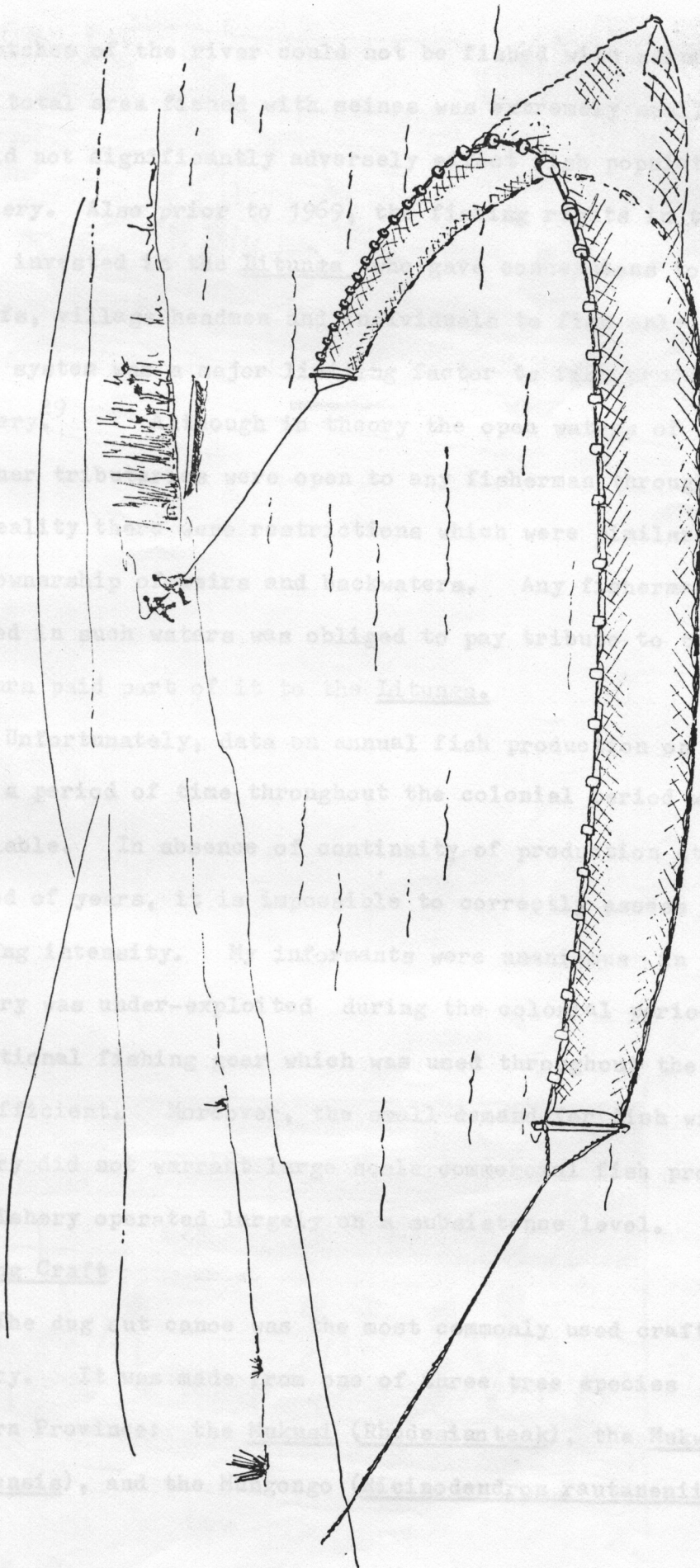
only a small percentage of the total surface area of the floodplain. As a result of this, those species of fish frequenting these habitats are regularly cropped, whilst populations of open water species such as Hydrocynus, Labeo and Barbus are relatively unexploited.<sup>26</sup>

#### Seine Net (Singoni)

Migrant fishermen from the Kafue floodplain introduced seine nets into the upper Zambezi river system in the 1960s. The first seine nets were made from bark fibre but evolved through cotton twines and nylon. The seines were predominantly of (7.7) centimetres stretched mesh and average some (91.5) metres in length. The seines are used at low water when open beaches emerge starting from July to December. They are relatively expensive and need a coordinated labour of four to eight man crew. Pulling a seine net is more labour intensive than setting a gill net. After setting a net into a circle, the crew draws it to the shore. This active method, generally more productive requires five to six hours a day of steady labour during which the net is shot five to six times at different locations. Seine netting is more capital intensive, since a usable net including drawing ropes are quite expensive and since the large crew and net usually calls for a larger boat. Payment of fishermen using seine net is either by allocating the proceeds of each day's fishing to each crewman known as (Muyambelo) or allowing each crewman in turn to collect the proceeds up to a set limit such as K80.00. In either case, the owner of the equipment collects fifty per cent of the day's catch with the crewman dividing the other fifty per cent.<sup>28</sup>

Because of the fast flowing nature of the Zambezi and her tributaries and the presence of obstructions on the river bed, extensive

SEINE NETTING : DIAGRAM 7



SOURCE : Mortimer, Fish and Fisheries of Zambia, 41

stretches of the river could not be fished with seines and gill net. The total area fished with seines was extremely small and local, and could not significantly adversely effect fish populations in the fishery. Also prior to 1969, the fishing rights in the fishery were invested in the Litunga who gave concessions to subordinate chiefs, village headmen and individuals to fish only prescribed areas. This system was a major limiting factor to fish production in the fishery.<sup>29</sup> Although in theory the open waters of the Zambezi and her tributaries were open to any fisherman throughout the year, in reality there were restrictions which were similar to those of the ownership of weirs and backwaters. Any fisherman who fished in such waters was obliged to pay tribute to the owner, who in turn paid part of it to the Litunga.

Unfortunately, data on annual fish production on the fishery over a period of time throughout the colonial period was not available. In absence of continuity of production statistics over period of years, it is impossible to correctly assess the effect of fishing intensity. My informants were unanimous in saying that the fishery was under-exploited during the colonial period because the traditional fishing gear which was used throughout the fishery was not efficient. Moreover, the small demand for fish within the fishery did not warrant large scale commercial fish production, and the fishery operated largely on a subsistence level.

#### Fishing Craft

The dug out canoe was the most commonly used craft on the fishery. It was made from one of three tree species found in Western Province: the Mukusi (Rhodesian teak), the Mukwa (Pterocarpus angolensis), and the Mungongo (Ricinodendron rautanenii). The canoe



DIAGRAM 8: dugout canoe

Other gear which existed in the fishery but not used by fishermen was the plank boat introduced in the middle of the 1980s. It was relatively expensive, and could only be afforded by few fishermen mostly the aristocracy. For the majority of fishermen fishing was a source of livelihood. However, their effectiveness was often handicapped by expensive gear which they could not afford in absence of loans.

#### FISHERMEN

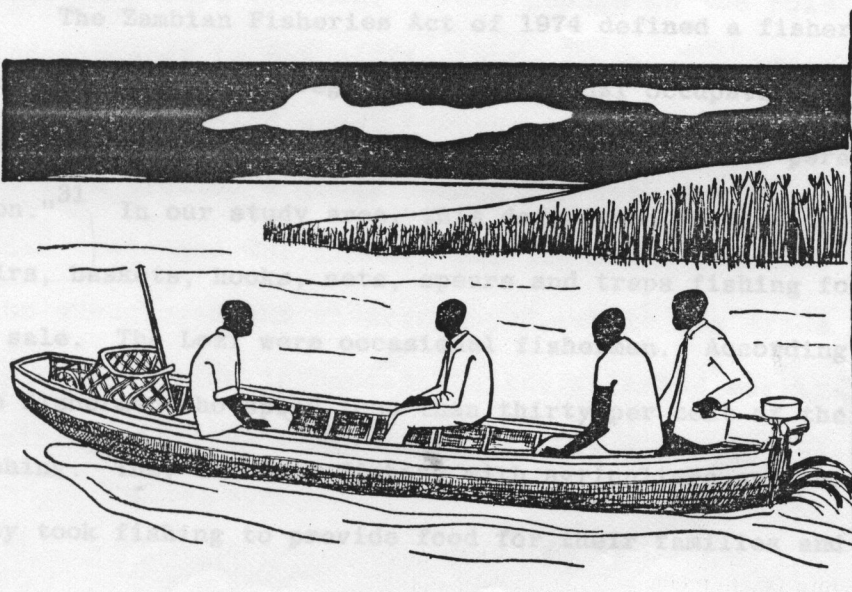


DIAGRAM 9: round bilge plank canoe with outboard motor

SOURCE: Mortimer, Fish and Fisheries of Zambia

were made by people living in the forest margins of the plain. The canoes are slender and pointed, round-bottomed and very fast and manoeuvrable when skillfully handled, but unstable.<sup>30</sup> Depending on its size the canoe can be used by a crew of two or more. Dug out canoes move easily through floating or emergent vegetation, pools and lagoons not in the fast flowing waters of the Zambezi river. In seine net fishing, two dug out canoes are normally used, one for gear and the other for the catch. The canoes are sturdy, and depending on what type of tree they are made from, can last for more than five years.

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### FISHERMEN

The Zambian Fisheries Act of 1974 defined a fisherman as "any person who as a regular or occasional occupation, undertakes fishing for the supply of fish to any market or for personal consumption."<sup>31</sup> In our study area, this definition includes persons using weirs, baskets, hooks, nets, spears and traps fishing for subsistence or sale. The Lozi were occasional fishermen. According to FAO, these are fishermen who spend less than thirty per cent of their time fishing. They combined fishing with agriculture and herding cows. They took fishing to provide food for their families and to supple-

ment their incomes and to find money to pay the tax. Because of existing tenure in the fishery, the majority of fishermen belonged to the Lozi ethnic group then next came the Mbunda who owned no fish sites and they utilized public waters which were unproductive. They made temporary camps on the banks of the rivers from which they carried fresh and dried fish to centres of populations such as Bomas, missionary stations and boarding schools.<sup>32</sup> The Litunga and certain important princes employed many net fishermen who fished for them.

### DIVISION OF LABOUR

Among the fishing communities there was a recognised division of labour between men and women. Men, with the help of boys, repaired nets, constructed weirs and traps and helped in smoking fish. Women who sometimes caught small fish had a duty to collect and take the fish to the villages or fishing camp. This was usually the case when the catch was big but in normal catches the task of disposing the fish was for men and boys. This was the state of affairs until after independence when women deviated from the norm and took to fish trading (Busulusi) a task which had been for men. This change in the role of women after independence is not difficult to explain. After 1964, the district centres attracted great numbers of people. The large population in turn created a great demand for both fresh and dried fish. The fish trade and the fishery for the first time became absorbers of the unemployed and underemployed, while the trade also provided supplementation to households and salaried workers. After 1964 joining the fish trade meant joining a viable enterprise.<sup>33</sup>

## FISH PRESERVATION

As soon as the fish was caught and died, deterioration and spoilage began. This was due to a series of chemical changes and bacterial action in the fish. If the fish was not cooked or roasted, it was preserved either by smoking or sun-drying. These methods of preserving fish were traditional. As a result traditionally dried fish were susceptible to infestation by blowfly maggots and dermestid beetle larvae, which rendered much of the fish dried or preserved in this manner unusable.<sup>34</sup> Traditional smoking operations differed substantially between different geographical areas and ethnic groups in a country as well as according to type of fish used, quantity processed and material available locally.<sup>35</sup>

### SMOKING (KUKUNYEKA)

This was the most widespread and cheapest method of preserving fish in the fishery. But the method was only undertaken after the rains had started from November. In the dry months fish were preserved by sun-drying them on the roofs of houses or on raised drying racks above the fireplace. However, if the fish was oily such as was the case with Barbel and Tiger fish it caused the roofs of houses to deteriorate a little faster. Fish which were sold in the area was either sun-dried or smoked.

Smoking of fish required an ample supply of firewood and these were scarce in the fishery. To smoke their fish, the fishermen depended on dry cow dung and dry reeds. The process of smoking was normally carried out in pits and during wet weather smoking was conducted inside the fisherman's hut.<sup>36</sup>



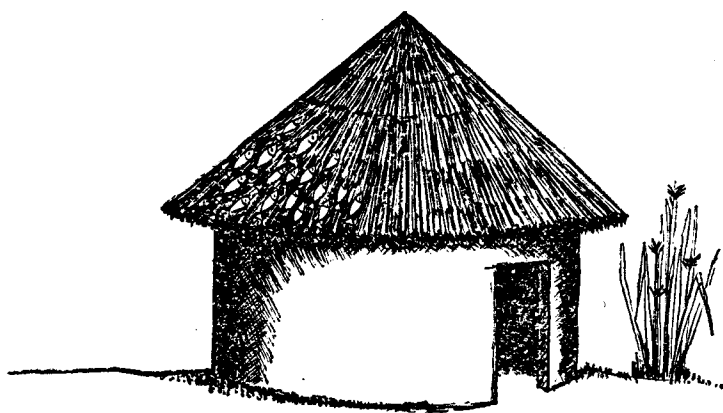


DIAGRAM 10: sun drying on the roof of a hut

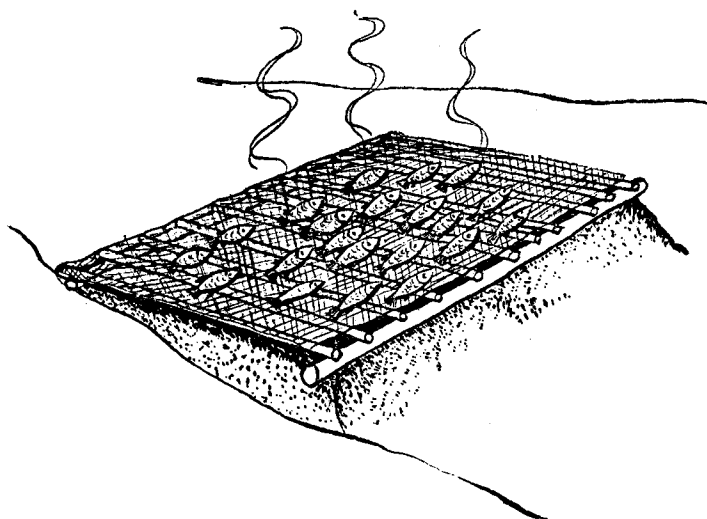


DIAGRAM 11: smoke drying over a pit fire

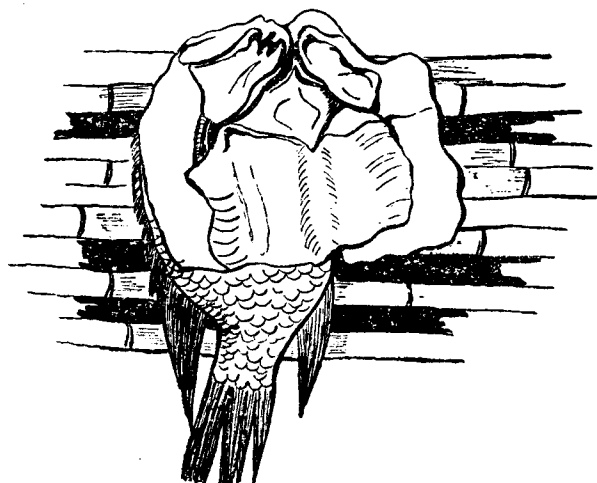


DIAGRAM 12: fish split open before drying

Before smoking was done, a fisherman and his family performed a number of functions. Firstly, they cleaned and sorted out the fish according to size and species. The large and medium sized fish were eviscerated taking care to remove the bile. They were either cut in two or three pieces or split open. The fish was then spread on a platform or roof and left in the sun for a number of hours to dehydrate.<sup>37</sup> Smoking started in the evening. Care was taken to ensure that the flames were controlled and the heat uniformly distributed. The result of this was that the final product was brittle and varying in quality.

For the small species, one or two treatments were enough. Medium and large sized species required several treatments over a period of five to ten days to achieve the acceptable dry texture. If this was not achieved especially during wet weather, the fish quickly attracted houseflies which laid eggs on the fish. When these hatched, they released maggots which fed on the soft flesh, hence destroying the fish. The properly dried fish were normally packed in bundles according to size and species and conveyed to markets.

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## CHAPTER 3

CONSTRAINTS ON THE GROWTH OF THE  
FISHING INDUSTRY, 1924-1964

My intention in this chapter is to examine the constraints which prevented the growth of the fishing industry in CZFPF during the colonial period. While such Zambian fisheries as Mweru-Luapula, Bangweulu and Kafue became money spinners for the rural population, the CZFPF operated on a subsistence level with only small surplus to sale. This situation was due to (a) the absence of demand for fish within the fishery, (b) absence of dependable markets, (c) transport difficulties and lack of government assistance. To have an in depth understanding of these factors, this chapter looks at the realities of the Lozi economy during the colonial period because it is in this context that the stagnation of the industry can be fully understood.

THE COMING OF THE BRITISH SOUTH AFRICA COMPANY TO THE  
FISHERY, 1890

Colonial administration came to the fishery on 27 June, 1890, following the treaty which was signed by Lewanika, and Lochner, a representative of the British South Africa Company (BSAC). By the terms of the treaty, the BSAC was given the "sole, absolute, exclusive and perpetual right and power to search for, dig, win and keep any and all minerals in Barotseland".<sup>1</sup> In return the company was to protect the Litunga from outside interference and to appoint a British resident. In 1898 the Lawley Concession gave the company ownership rights to farmlands in Toka and Ila country. In 1900 Lewanika signed another version of the same concession. In all the concessions, there was a clause requiring the company to help develop the area. The company also agreed to "assist in the education

and civilization of the native subjects of the king by the establishment, maintenance and endowment of schools and industrial establishments and by extension and equipment of telegraphs and regular services of postal and transport communication".<sup>2</sup>

The clause was a dead letter from the start as the company fulfilled none of the promises except of course for postal service. On the part of Lewanika he hoped to accommodate rather than resist European power in order to harness it to his own ends and to the benefit of his people. As was the case Lewanika received his protection but that protection proved to be an embittering parody of the partnership and progress he had envisioned. It should be noted that the establishment of colonial rule in Western Province happened fairly quickly, but the process had a serious impact on the economy of the area.<sup>3</sup> Because of the political status applicable to Western Province, where the Litunga and the BNG controlled the areas natural resources, the fisheries were the responsibility of BNG not NRG as were the case with all the other fisheries in NR which fell under the Department of Game and Tsetse control. The Fisheries Division of NRG was not allowed to operate in the Western Province except at the express consent of the Litunga.<sup>4</sup> The fishing activity was left in the hands of the indigenous people who fished on subsistence. The company and later the NRG which took over the administration of the area in 1924, ignored the need to develop a fishing industry in the area. This state of affairs can be explained by the fact that there was no demand for fish within the area and transport difficulties could not allow the fishermen to transport their fish to the line of rail where there was a ready market for

When the BSAC established its rule firmly in 1900, it found that the economy of the Lozi was based on farming, pastoralism and

fishing. Although rudimentary elements of a market economy existed in the area before colonization, larger sectors of the economy still depended on barter in one form or another, and there was hardly any wage labour in the area. The BSAC integrated the Lozi economy into the capitalist economy. This process was accomplished in various ways. With coming of colonial rule, came also capitalist mode of production where money was the medium of exchange.

In this exercise, the BSAC introduced a number of policies which were aimed at fulfilling the function of integrating the Lozi economy into a capitalist one. The company introduced the payment of tax in 1904. This was initially paid in kind, but from 1906 it was paid in money. The imposition of tax was the most despicable feature of company rule.<sup>5</sup> Because of low level of income among the people during company administration, tax could only be paid by cattle owners who sold some of their stock to traders. But for the majority of Lozi, there was only one alternative to earn cash to pay tax which was labour migration.

At the turn of the century one of Western Province's most important sources of income, and of acquiring European products, was cattle. There was very high demand for cattle from the mines of Katanga, Angola, Southern Rhodesia and from European farmers who wished to establish their herds in Northern Rhodesia and Southern Rhodesia.<sup>6</sup> One source estimates that about 3,600 herds of cattle were exported in 1901, another says that Lewanika alone had an income of £1,500 from sales in 1905. Estimates for 1911 and 1912 suggest that 8,000 and 10,000 herds were exported in those years.<sup>7</sup>

Beginning in 1915, this lucrative export trade received a series of shocks from a cattle disease which deprived the Lozi of



a steady and stable income. In that year the Bovine Pleuro-Pneumonia gained access from Angola through oxen used by the Angola Boundary Commission and quickly spread through Western Province to white settler herds along the line of rail to the east.<sup>9</sup> By the end of 1915 a combination of slaughter and inoculation campaign cleared the disease from most parts of North-Western Rhodesia except Western Province. From 1915 cattle exports from Western Province were banned.

The ban on cattle trade lasted from 1915 to 1948. It seriously affected the flow into and circulation of cash in Western Province and contributed to the rapid increase in labour migration organised by WNLA from 1936.<sup>10</sup> Even after the ban was lifted in 1948, labour migration continued to be the main source of income much of which was used by the Lozi to replenish their stocks. The prolonged absences of a large percentage (See Appendix ) of men did reduce the availability of fish forcing women to take part in fishing with baskets. Although the BSAC promised to set up industries under the terms of the treaty, they failed to do so and allowed Western Province to remain a labour reserve. Labour migration continued until 1966.

Max Gluckman and one government official have expressed concern about the effects of migratory labour on Lozi economy particularly agriculture because of the marked decline in output during the 1940s. Their explanations for the sharp decline have centred around a critical shortage of male labour.<sup>11</sup> Eugen Hermitte on the other hand repudiates their thesis on the grounds that in the period 1900 and 1940 there was expanded agricultural production. According to Hermitte the reason why agriculture did not suffer was that women

did most of the work in the absence of men from home.<sup>12</sup>

While Hermitte's argument may be true for agriculture, it cannot be equally true for fishing as an economic activity because fishing was carried out by men using different methods which varied from season to season. Women only fished in drying up pools with baskets for household needs. The fishing gear used such as fibre nets, non-return traps, baskets, fish spears and hooks were made by men. With men absent from home for a number of months or years, there was shortage of fishing gear which had a serious effect on fishing activity in the area. Another gear which was affected by the absence of male labour was the fishing weir. The construction of a weir required the co-operation of ten or more men. The absence of men for considerable length of time led many weirs to fall into disrepair.

The failure to develop other industries after the termination of cattle exports and the emergence of labour migration were evident in 1927 when the resident magistrate, Hall, conducted an investigation into the economic resources of Western Province. People complained bitterly to him that:

Since the crown government succeeded the chartered company, we have seen no improvement worth mentioning. We hear no one speak of a railway of Barotseland or of cheaper transport. We hear no work undertaken for the benefit of the country, or to help the people to earn money without going away from their homes. What is the use trying to improve or increase the produce of our gardens? Transport is so expensive that it does not pay to send anything to Livingstone for sale. Why shouldn't the government help to transport our produce to Livingstone?<sup>13</sup>

The above quotation sums up the problems which were faced by Lozi producers during the colonial period and Lozi fishermen were no exception. The problem was compounded by the activities of the

Witwatersrand Native Labour Association (WNLA) which started in 1936 recruiting thousands of men for the South African mines. Labour migration became as Browne's report noted in 1938, "the only sure way in which an ambitious Lozi man can better his position and secure opportunity".<sup>14</sup>

The NRG was aware of the problems which hindered economic development in Western Province but their approach did not differ from the preceeding BSAC period. The situation was made explicitly clear by a British official in the area when he noted that "under existing conditions and at this distance from the railway line it is difficult if not impossible to see what new industries could be developed".<sup>15</sup> This attitude extended even to the existing economic activities such as fishing and agriculture. For example, a Native Affairs report in 1940 stated that Bulozhi was too remote to export fish to the line of rail.<sup>16</sup>

The British were quite happy to see Western Province serving as a labour reserve for the mines. This was clearly demonstrated when the Lozi leaders asked the government to develop local industries such as fishing and handicrafts that would provide income to the people, they were told they must go to European areas.<sup>17</sup> But the main factor affecting government policy in the area was a bureaucratic desire to reduce costs.

The main goal of the NRG was to see that Western Province served European interests in Central and Southern Africa without creating a fiscal burden. Industrial development was permissible only to the extent that it did not create an imbalance in the budget of Northern Rhodesia. The Government and BNG jointly ran one 'development' scheme unique in Northern Rhodesia, the Barotse Trust Fund (BTF).

The fund was established in 1902. The objective of the fund was to finance development projects in the area. Most of the money from the fund was used to support the Barotse National School (BNS) opened in 1906. Another portion of the money was used to pay the stipends of the Litunga and the Indunas. In 1936 Barotse Native Authority Ordinance was passed leading to the replacement of the BTF by the institution of Native Treasury. All the assets and liabilities of the BTF were transferred to the Native Treasury. In other Native authorities the institution of Native Treasuries had relaxed government control by granting them marginal fiscal rights. In Barotseland the establishment of Native Treasury in 1936 had tightened government control on the area's finances, a phenomenon which was not there at the time of the BTF. The NRG had felt that lack of proper control and supervision of Western Province finances had allowed the continuance of the tradition of munificence almost tantamount to prodigality by the Litunga and the BNG. As the annual estimates for Western Province had to be specifically approved by NRG from 1936, the Barotse Native Authority Ordinance took away the last vestiges of its financial autonomy by establishing the Native Treasury much more under the Control of the provincial Commissioner than ever the BTF was under the governor.

With that state of affairs, by 1964 while the BNG was the richest of the Native Authorities, the economy of its people were no better than other people in the country. From 1900 to 1935, the BNG had some autonomy despite the encroachments of colonial administration and labour needs of colonial Northern Rhodesia had not yet become too demanding. The period 1936

to 1948 was the only period when the colonial state had maximum control over BNG and could have introduced development projects in the area had that suited its interests. From 1948 to 1964, the BNG regained some of its lost powers including a say over area's finances, but the BNG was under Litunga Mwanawina. He was left a free hand by NRG to develop his area. But Mwanawina and his Indunas failed to stimulate any form of economic development. Instead they used the money from the Native Treasury for their own material benefit.<sup>18</sup> The failure of the fishing industry to grow during this period should be understood in that context.

The absence of demand for fish within Western Province and the agreement that the fishery was the responsibility of BNG was a blessing in disguise to the NRG because it did not bother itself with the development of fishing in the area. This can be illustrated by the fact that the NRG starting in 1950 assisted in the development of fishing in other fisheries in the country. In the 1950s the NRG introduced a loan scheme in Mweru-Luapula fishery. The aim was to enable the fishermen buy better and efficient nylon nets and big plank boats.<sup>19</sup> In the same period gravel roads were constructed to enable fish traders to reach the fishery and the fishermen reach the market on the Copperbelt. The Government also initiated the formation of co-operatives in the fishery during the period 1950-1953 to handle the selling of fish to the fish traders. Also in all the fisheries except the fisheries in Western Province, a statistical system of collecting catch data relating to the fisheries was established and fisheries development co-operations to develop and

control fishing were established.<sup>20</sup> In all these initiatives aimed at developing the fishing industry in the country, the CZFPF was excluded. As a result there was lack of a statistical system for collecting catch data and in absence of continuity of production statistics it was impossible to assess the amount of fish caught and sold from the fishery during the colonial period.

The Lozi aristocracy could not sacrifice its share of the money from BNT to develop fishing although it controlled the most productive fishing sites. Lozi citizens who wished to use these fishing sites had to share the products with the owners of the sites. This arrangement discouraged many people who would have liked to become fishermen.<sup>21</sup> Another explanation why the Lozi aristocracy failed to develop fishing was given in a report, "while Yeta's own ideas are all for advancement and improvement of his people through the development of indigenous industries, he is tremendously hampered by the conservative ideas held by some of the older Indunas and by the Ngambela".<sup>22</sup> The Ngambela and the conservative Indunas were very influential in convincing the Litunga that private fishing firms should not be allowed to operate in the fishery because they feared the firms would eventually take control of the fishery.<sup>23</sup> However, the desire of the Litunga as well as the Indunas for increased income also in a way, militated against the development of fishing. To cite an example, Yeta and the Barotse National Council (BNC) at a meeting with British officials in 1924 stressed their desire to impose duties on every fishermen who exported his fish from Western Province to far off places like Livingstone. This was discouraged by the British because they argued, it would discourage the few fishermen who were earning their income by fishing.<sup>24</sup>

Even if there was demand for fish in the area, the Lozi commoners would have done very little to develop fishing. This was because they lacked the capital to enable them buy modern and efficient gear to increase catch per effort. Their incomes were very low and could not enable them to buy good fishing gear to improve their fishing, because apart from being scarce the new gear was also expensive. Also the commoners were guided by their social relationships. Instead of investing their money in new fishing gear, they were obliged to invest their money in social relationships by sharing or investing in cattle which they considered of utmost importance in society.<sup>25</sup> These limited objectives were compounded by the social arrangements in the area whereby good fishing sites were privately owned by the aristocracy. Commoners were only allowed to fish in the open waters. Here the catch was lower than in swamps and backwaters because in open waters the currents were swift, harboured predators and had insufficient phytoplankton.<sup>26</sup> In the swamps and backwaters fish were caught more easily by the use of traditional methods than in the open waters where the Lozi commoners were allowed to fish. Here they needed new efficient gear capable of catching species not exploited by the use of local fabricated gear.<sup>27</sup> With the predominance of inefficient gear, most of the deep parts of the fishery were not exploited and connected to this was the prevalence of large numbers of Crocodiles and Hippopotami in the deep parts of the fishery which threatened the safety of the fishermen who ventured in those parts of the fishery. This aspect played a major role in retarding the development of fishing in the fishery and cropping of crocodiles had to be undertaken in the 1950s and 1960s.<sup>28</sup>

Other parts of the fishery could not be fished because they were inaccessible owing to aquatic vegetation such as papyrus and reeds. Because of this ecological problem most of the fishing occurred in the lagoons, backwater, swamps and plant filled waters in which it was difficult to improve on the traditional methods which were based on small family groups on scattered mounds in the plain.

On a purely economic level, there was no demand for fish and this problem was worsened by the absence of a streamlined marketing system. Fishing was purely haphazard and individualistic. The fishermen did not entertain the idea of forming a marketing co-operative or some sort of partnership because of fear that the people who would be charged with the responsibility of taking the fish to the market would not declare its true value on their return. This fear did not exist among the fishermen in Western Province alone, as Mulongo came across the same problem when he carried out his research among the fishermen in the Bangweulu fishery.<sup>29</sup> Instead of forming some sort of a co-operative that would have looked after the marketing aspect of their fishing, fishermen preferred taking their fish for sale individually in the hope of reaping high profits.

#### TRANSPORT CONSTRAINT

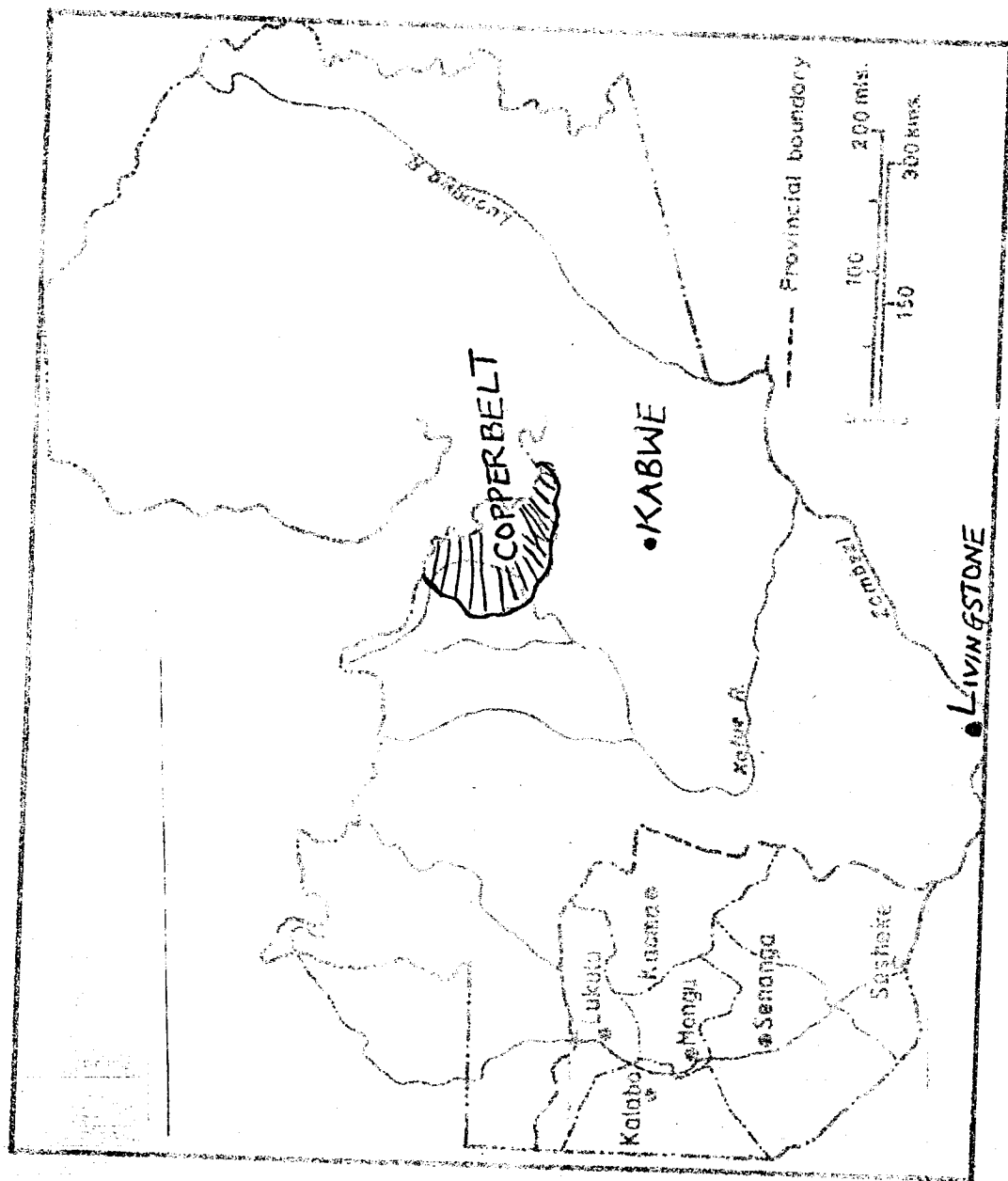
Western Province remained the most difficult province of access. Even administration of the area was seriously hampered by the ~~difficulty~~ of communication using the Zambezi valley water way. In the early days of colonialism the Zambezi river route was by paddles using a barge and the journey from Livingstone to Mongu, a distance of 528 kilometres, took over twenty days.<sup>30</sup> In the province, population density was very low and administrative Bomas were often one-man stations.<sup>31</sup> There were only two feasible routes, the



# MAP 3:

60

## WESTERN PROVINCE OF ZAMBIA SHOWING DISTRICTS AND FISH CONSUMING AREAS



Mongu-Lusaka and Balovale (Zambezi) to Copperbelt roads. Mongu-Lusaka road was opened in 1930 but was abandoned in 1944 after operating for a very short while on account of excessive costs of maintenance. In the Department of Native Affairs Annual report of 1938, the Secretary for Native Affairs reported that the road linking Mongu and Lusaka was rather of lesser importance. "It will be sometime before this road is capable of being a reasonable all weather link".<sup>32</sup> The distance between Mongu and the Copperbelt precluded the use of that route as the main link between Western Province and the Copperbelt where there was a ready market for fish. In the face of this transport problem, the only link which was feasible was the Zambezi river water way from Mongu to Livingstone because it was a bit shorter, but it also presented its own problems. The water way was of a local nature as there were no thorough-going water arteries. This may seem a strange situation given the Zambezi river which runs acrosss the area. The difficulty in using that route was that the Zambezi river is an 'upper river' which in effect means that it has rock bottoms and high current velocity.<sup>33</sup> These conditions made river navigation very difficult. South of Senanga the Zambezi has rapids which meant that the stretch of the river between Sioma and Sesheke could not be used by people who depended on dug out canoes as their mode of transport. And between Katombora and Livingstone, porters had to be engaged to carry goods between the two points because of cataracts which hindered the movement of canoes.

Throughout the colonial period the fishermen were using the bush-paths to take their fish for sale at centres of population such as Bomas, Missionary Stations and boarding schools in the region. Porterage was the main means of transportation between the fishery

and the mainland. For the fishermen who sold their fish within the fishery, they depended on muscle power (paddling) the dug out canoes during flood season and walking if it was during the dry season.

Transport problem was compounded by the nature of the fishery itself. It had a lot of aquatic vegetation such as papyrus and reeds which made it difficult to develop an efficient transport system. Because of the transport handicap, it was not possible for the fishermen to transport fish to the line of rail or copperbelt where there was a ready market for fish because of the long distances involved and added to this was also the absence of the motor-operated services.<sup>34</sup>

The official view of the NRG with respect to the problem of transport in the fishery was that the Kalahari sands made road construction difficult and expensive because the distance involved would be too costly. The administration was really justified in citing the transport problem as a stumbling block to the industrial development of the region but the NRG did very little in an attempt to overcome the problem. As a solution to the problem, the administration was supposed to have used its share of BNT to construct a road between Mongu and Livingstone via Mulobezi and introduce motor-operated services which would have been utilized by the fishermen to transport their fish to Livingstone and Mulobezi Sawmills where there was market for fish. The fact that the Litunga in the 1930s made attempts by using carts to transport fish to Mulobezi and Livingstone goes a long way to demonstrate that there was determination on the part of the people to develop fishing and thereby generate income but transport problem was hostile to their efforts. In the face of this transport problem which seemed insurmountable at the time,

the fishermen could not be expected to increase their fishing effort when their catch could not reach the consumers in time. The cost arising from this bottleneck to the fishing industry was very high.

#### MARKETING CONSTRAINT

I do not intend to belabour or carry out an explanation of the dependability of a good marketing system to bring about a substantial improvement in the growth of a fishing industry. I would simply stress that an efficiently organized and adequate system of marketing linked with an efficient transport system is necessary to the growth of a fishing industry. This vital economic aspect was absent in Western Province's CZFPF and was therefore a serious constraint to the development of the industry. To overcome bottlenecks in the supply of any commodity an incentive is needed: the incentive of a good and sure market for the product in question. A market consists of two essential components: first demand dependent of course on income and price, and second is the supply reaching the market at a profitable price.<sup>35</sup>

There had always been trade in fish within the fishery. The sale of fish business was exclusively done and run by the Lozi and was directed toward Livingstone.<sup>36</sup> However, most of the fish trade occurred within Western Province because of the insurmountable transport problem. Marketing with its associated functions of collection, handling and distribution were greatly neglected during the colonial period and have been an obstacle to the development of the industry and to the just distribution of whatever fish had been available.<sup>37</sup>

The collection of fresh fish over the huge area of the fishery, in a tropical climate was a formidable undertaking. It required the existence of permanent waterways, all weather roads and the provision of suitable refrigeration facilities. These essential facilities to the development of a fishing industry were absent.

The selling of fish was entirely conducted by the fishermen themselves and their families. Unlike in other fisheries in the territory such as Mweru-Luapula and Bangweulu where there were fish traders, in the CZFPF these middlemen were absent. The appearance of fish traders was a post-colonial phenomenon and the explanation for their emergence is the high cost of living and unemployment problems plus of course the growth of demand for fish after independence in 1964. The growth of population in the Bomas of Mongu, Kalabo, Lukulu, Kaoma, Senanga and Sesheke created unprecedented demand and market for fish. The largest consumers of fish were the people at missionary stations, administrative centres, Lukona Standard Boarding School, Barotse National School (BNS), Mabumbu, Kambule and Sefula Boarding Schools and Senanga Trades School. These institutions were supposed to have created a stable and dependable market for fish, but because of the erratic supply of fish resulting from transport difficulties, these institutions preferred meat to fish because it was easily available. Because of transport problems, very limited fresh fish reached the villages adjacent to the fishery and no wet fish ever reached the line of rail from Western Province.

The internal market for fish was very small and limited. This was due to low population density which was between 2 - 3 people per square kilometre.<sup>38</sup> Two important conditions for the development of local trading, namely, a high density of population and location of the fishery near good transport routes were not fulfilled

in Western Province as the roads which existed were poor and freight charges from the fishery to the line of rail were too high. This created a situation where fishermen undertook to satisfy the limited local demand for fish. This limited local demand could not absorb significant quantities of fish to set in motion a significant income - generation process. Fishermen could not increase their productivity due to limited demand. Efficient and cheap distribution to distant markets such as the Copperbelt, Livingstone and Mulobezi Sawmills could be carried out by bulk-handling. This was absent in the fishery because each fisherman was responsible for catching, processing and disposing of his fish.

We must not, however, forget the second component of markets: the possibility of meeting demand at a profitable price. This important aspect of marketing was a major problem faced by fishermen in Western Province and the explanation for it is simple. Western Province had very few people who would satisfy a large market for fish. There were therefore more fish supplies than the market would absorb due to small and limited demand for fish. The result of this was low fish prices. The prices of fish were set by looking at the size of the fish. There were no fish scales used and normally there were dual prices for each type of fish and size for the wet season, when supplies were low due to ecological factors and the demand low due to access problems, and for the dry season when the opposite was the case.<sup>39</sup> The price of fish within the fishery and the adjacent areas to it was 1d (1n) and when fish was transported to far off places like Mulobezi Sawmills or Kaoma the same fish was sold at 6d (5n).<sup>40</sup>

Because of the price war between the fishermen and the consumers, many fishermen occasionally tried to hold out for higher prices from consumers, but their desire for money was too great to permit this. Even though prices were low, the majority of fishermen felt that low prices for their fish were in the final analysis better than nothing at all.<sup>41</sup> The fishermen who were not satisfied with the low prices in the province used ox-drawn carts to transport their fish to Mulobezi Sawmills where they hoped to sell at profitable prices. But the distances involved in such ventures were too long and needed heavy investments. In the long run these ventures failed to bear fruit.<sup>42</sup> Many fishermen abandoned fishing and opted for labour migration where they were assured of regular wages. For there was no need of increasing production of fish if they could not be transported to the consumers quickly at reasonable prices.<sup>43</sup> The low fish prices during the colonial period as a result of low demand for the commodity diminished the fishermen's incentive to catch on a regular basis. With the foregoing, it can be argued that the growth of the fishing industry in Western Province during the colonial period was retarded by a market constraint arising from a badly developed system of transport and communication in a sparsely populated province.

#### THE CONSTRAINT ARISING FROM CONTINUED RELIANCE ON TRADITIONAL METHODS OF FISHING

Because of low demand for fish, there was no need on part of the fishermen to adopt modern fishing gear as a result they continued to rely on their time honoured traditional fishing methods which satisfied their subsistence needs and small surplus for sale. The major methods of fishing had always been by netting using traditional

fibre nets, trapping, spearing and basketing by women. All these methods were suited for subsistence because the durability of a fibre net was not long and had to be replaced twice or three times in a year. The other methods were not only subsistence but they were also seasonal in the sense that they could only be used only once in a year. Using these methods, fishermen could only raise their fishing effort for a short period only at the height of the fishing season and then revert to the cultivation of their land. Even when the modern nylon nets were introduced into the fishery in the 1960s, only a limited number of fishermen adopted them. The majority of fishermen could not afford them because they had no money with which to buy them because their prices were prohibitive as the shopowners stocking the items hiked the prices in order to meet the transport costs from Livingstone where they ordered their goods.<sup>44</sup> As a result of high prices of modern nets, fishermen had to fall back on their traditional methods. The continued reliance on these methods reduced the catch per effort.

In order to make an increase in his individual catch, the fisherman had either to double his fishing effort or increase the number of nets which meant that he had to buy new nets, an alternative which was impossible considering that the fishermen were under capitalized. Traditional fishing methods continued to give the fishermen diminishing returns thereby tying them to subsistence fishing. But if there was demand for fish as was the case after independence in 1964, fishermen would have adopted modern methods of fishing to raise the extent of their fishing effort to commercial levels to meet the demand for fish and thereby generate more income.



Lack of fisheries extension work during the colonial period to assist the fishermen to a certain extent hindered the development of fishing. The absence of trained manpower was perhaps one of the deterrents to development in fisheries not only in Western Province but everywhere. The existence of fisheries extension workers in a fishery is as important as the marketing system. Whereas fisheries extension work was carried out in other fisheries in the country, CZFPF was excluded. The Fisheries Department was only opened in Western Province in 1974, which should explain the lag in the growth of the industry in the area.<sup>45</sup> Another basic problem which faced the industry was something to do with biological research on the fish species in the fishery. While much research was conducted by the NRG into other fisheries in the country, CZFPF was omitted. As a result of this discrimination, the scientific knowledge on the movements of the various fish species remained concealed and much more work had to be done in this field before the industry in the province could compete favourably with other fisheries in the country.<sup>46</sup> The other factor for the industry's failure to develop involved neither the NRG's negative attitude toward the industry nor the selfish acquisitive tendency of the Lozi aristocracy, but rather the environment of the fishery. As a result of the fragile environment of the floodplain, the Lozi lived always close to subsistence. The area was fairly endowed for subsistence production by a limited population and its inhabitants utilized its fish resources with great skill in terms of their fishing techniques, but the fishery lacked the geographical location that would have helped it to function as a supplier of fish to the markets on the Copperbelt and other towns on the line of rail.

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## CONCLUSION

My argument in this study has been that to fully understand the constraints on the growth of the fishing industry in the CZFPF of Western Province, we must first understand and take stock of the history of production of the industry. From time immemorial, fishing as an economic activity was predominantly subsistence oriented. Even after colonialism had been imposed on the area and the introduction of a money economy, subsistence fishing did not change because the demand for fish within Western Province remained low.

The years of the colonial period were marked by the struggle between the fishermen who represented the subsistence sector on one hand and the capitalist sector mining and settler agriculture on the other who were intent on turning the subsistence fishermen into wage workers. The process of labour migration which came into being as a result of the imposition of tax proved a major deterrent to increased fish production. The whole problem was compounded by transport difficulties from the fishery to urban centres such as the Copperbelt and Livingstone where there was large market for fish. To be sure, the population of fishermen was low, but the development of capitalism during the colonial period was in a way responsible for the frustration of the fishing industry in the province because even the few practising fishermen left and swelled the ranks of labour migrants.

The imposition of tax, the decline of agriculture and the ban on the export of cattle from Western Province in 1915 following the outbreak of Bovine Pleuro-Pneumonia meant that people's incomes were very low. The only economic activity which could give them income was fishing but the absence of markets for fish in the area frustrated

the efforts of fishermen. Tax requirements turned the subsistence fishermen away from home to the Copperbelt and South Africa and in the process the development of fishing as a viable industry was a non-starter, and continued to be carried out on subsistence basis during the colonial period.

The NRG lamentably failed to take steps aimed at developing the industry in a way of solving the transport problems so that fishermen could transport their fish for sale on the Copperbelt or Livingstone. The reason for this negative attitude towards the industry on the part of the NRG was that the issues pertaining to fishing was a responsibility of the BNG. The argument of the NRG was that the industrial development in Western Province had to be financed from BNT. The BNG rejected the argument on two grounds: first, control of the BNT continued to lie in the hands of whites; second, they considered that the fund was the enhancement of the physical dignity of the state, a lofty euphemism for their own material benefit, as development of the area was the legitimate responsibility of the NRG in accordance with the 1900 concession. Both the NRG and BNG failed to construct roads that would link the fishery to the urban centres and thereby facilitate the transportation of fish. No type of assistance was given to the fishermen in order to improve their fishing.

Thus, rural fishermen who were experiencing low demand for fish and transport difficulties could not get the necessary support from the NRG to increase their productivity to the necessary level. The result was that the contribution of the Western Province fishermen to the national economy, their incomes and living standards remained low. The interests of rural fishermen were

subordinated to those of capital and undercut their productivity during the colonial period.

Independence witnessed an increased attention to fisheries including those in Western Province by the Zambian government. There was a shift from subsistence fishing which characterized the colonial period to commercial as this can be confirmed by the appendix which shows the fish production statistics for the period 1966 to 1980. The Zambian government closed WNLA in 1966. Because of the psychological satisfaction it had created to the labour migrants, its closure was a blow to them but was a blessing in disguise to the growth and development of fishing in the province. The returning labour migrants mostly got employed by the Public Works Department in the district centres of Western Province. The growth of population in district centres as a result of rural-urban drift after independence created unprecedented demand for fish both fresh and dried and a dependable market for fish was created locally.

The resulting economic squeeze, and rising unemployment in the 1970s pushed many people into self-employment. In Western Province, most of those seeking self-employment turned to fishing or fish trading. The presence of a dependable market led to the adoption of modern and efficient nylon nets. The shift by fishermen to all year fishing resulted in increased fish production and led many fishermen to become full-time fishermen or fish traders.

Unlike the NRG, the Zambian government constructed roads which remedied the transport problem. In 1973, Mongu-Lusaka road was opened and Kaoma and Lukulu road was constructed shortly after

independence. Added to this network of roads was the construction of Mongu-Senanga road. These transport networks enabled fishermen who had no access to transport during the colonial period to transport their fish to Kaoma and Lukulu which became important markets for fish from CZFPF after independence. Privately owned barges between Mongu and Kalabo enabled many fishermen in Kalabo to transport their fish to Mongu and Kaoma. Multipurpose markets were created in all District Centres and these also catered for fish trade. For the first time, fish scales were introduced in these markets and the prices for fish both dried and fresh were controlled.

More important, however, was the lifting of influx controls on fishing in 1969 by the Zambian government when it tookover the fishing rights from BNG. The new government guaranteed freedom of movement. Many people celebrated this new freedom by migrating to the fishery and the fishing population apparently grew. The increase in the population of fishermen was supported by the increased use of modern nylon nets which increased catch per effort.

The new Zambian government like the NRG failed to provide credit facilities to the fishermen. There is no record of any credit facilities being extended to the fishermen. Thus, the growth and development of fishing as a viable industry in Western Province after 1964 was not solely because of the efforts of the new government but was to a large extent the initiative on the part of fishermen and the blessing of a dependable market for fish after 1964. The great demand for fish led to overfishing which threatened fish stocks more especially immature fish. This development led the Department of Fisheries in the area to strictly control



the mesh size to ensure that only nets with recommended mesh size were used in the fishery so that only mature fish were caught.

In this study, I have demonstrated that the absence of an increase in Lozi fishing during the colonial period was a product of a number of factors, some of them at work also in other fisheries but prominent among these was the persistent low demand for fish within Western Province and the lack of transport that would have enabled the fishermen to take their fish to urban markets or fish traders from urban centres reach the fishery as was the case in other fisheries in the country. Ecological limitations played their role also for the failure of the industry to develop. Had transport been less problematical during the colonial period or had the NRG funded its development as pledged in the 1900 Concession, the fishermen in the province could have increased their fishing effort. However, the BSA and the NRG were interested in the area only as a source of cheap labour, and as a result fishing which was supposed to have generated income to the fishermen and fish traders continued to be carried out on subsistence basis with only small surplus for sale.

The study has identified typical problems confronting an economic activity in a rural area within a colonial framework. The will of the fishermen to increase their productivity was always there but the absence of demand for fish and transport difficulties militated against their efforts. The framework under which the fishermen were operating with vested interests elsewhere imposed serious constraints. Fishing therefore remained a subsistence economic activity during the colonial period and was subordinated to the capitalist ventures such as mining and settler

agriculture. To some extent this subordination has remained part of the given structure of the post-colonial state of Zambia, since Zambia is an appendage of international capitalism. Consequently the fishermen's aspirations continue to be only partially fulfilled.

APPENDIX 1PERCENTAGES OF MALES FROM WESTERN PROVINCE ON  
LABOUR MIGRATION OUTSIDE THE AREA, 1941-1963

| YEAR | PERCENTAGE |
|------|------------|
| 1941 | 44         |
| 1944 | 48         |
| 1947 | 45         |
| 1950 | 41         |
| 1952 | 37         |
| 1954 | 40         |
| 1957 | 44         |
| 1961 | 46         |
| 1963 | 48         |

Quoted from: John A. Hellen, Rural Economic Development  
in Zambia, 1890-1964, p. 97

## APPENDIX

PRODUCTION IN SELECTED ZAMBIA FISHERIES INCLUDING  
CZFPPF, 1966-1980 (in metric tonnes)

| YEAR | KAFUE  | KARIBA | LUKANGA | CZFPPF | TOTAL  |
|------|--------|--------|---------|--------|--------|
| 1966 | 10,709 | 1,436  | 658     | 1,000  | 13,803 |
| 1967 | 3,441  | 980    | 955     | 1,000  | 6,376  |
| 1968 | 6,183  | 1,410  | 1,602   | 1,000  | 10,195 |
| 1969 | 9,938  | 1,345  | 1,336   | 1,000  | 13,619 |
| 1970 | 9,582  | 2,581  | 1,724   | 3,500  | 17,387 |
| 1971 | 8,247  | 2,311  | 1,900   | 3,500  | 15,958 |
| 1972 | 7,874  | 1,955  | 2,370   | 3,500  | 15,699 |
| 1973 | 6,289  | 3,098  | 1,802   | 3,500  | 14,689 |
| 1974 | 5,177  | 3,181  | 856     | 3,500  | 41,414 |
| 1975 | 7,266  | -      | 1,005   | 5,827  | 14,098 |
| 1976 | 9,307  | -      | 786     | 5,995  | 16,087 |
| 1977 | 9,830  | -      | 835     | 2,888  | 13,553 |
| 1978 | 8,634  | -      | 549     | 4,475  | 13,658 |
| 1979 | 10,851 | -      | 1,801   | 6,671  | 19,323 |
| 1980 | 7,741  | 407    | 1,707   | 6,572  | 16,427 |

Source: P.D. Ncube, (ed.) Agricultural Baseline Data for Planning, (Lusaka: National Commission for Development Planning, 1983), 172.

**Note:** The production statistics for the CZFPPF help to demonstrate that after 1966 people in the area realised the growing importance of fishing as a money spinner especially after the closure of WNLA in September, 1966.

Most of the returning labour migrants turned to fishing and fish trading. After independence, fishing was transformed from being a supplier of subsistence fish to the people, into a viable rural industry which provided income to men and women who participated in it either as fishermen or fish traders.

The drop in production in 1977 and 1978 was the result of the efforts of the Fisheries officials in the fishery to discourage over-fishing which threatened fish stocks in the fishery. In 1977, the Fisheries Department in conjunction with the Litunga started controlling people's fishing activities to ensure that there was no over-fishing. In 1978, fishermen were forbidden to build fishing camps on the river-banks and the Litunga issued an order to ban migrant fishing. The ban on migrant fishing incurred disfavour from the fishermen who saw the move as paving the way for the Litunga to dominate the fishing industry in the fishery as he owned more fishing nets and had many fishermen who fished for him than any other individual. The effort by the Fisheries Department and the Litunga to minimize over-fishing is not achieving desired results because of the serious shortage of manpower needed to patrol the fishery. As a result, there is over-fishing which threatens fish stocks.

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## PRIMARY SOURCES

F. ORAL SOURCES

The interviews with informants were conducted in an informal manner but they were not tape recorded. The following information is provided for each oral informant:

1. Name.
2. Place of interview.
3. Date of interview.
4. Occupation of interviewee.

| NAME                   | DATE     | PLACE                    | OCCUPATION                         |
|------------------------|----------|--------------------------|------------------------------------|
| 1. Akulu Nosiku        | 17-10-85 | Litongo                  | Fish Trader                        |
| 2. August Sikeba       | 10-10-85 | Senanga (Lianyi Village) | Fisherman                          |
| 3. Chobola Mabuku      | 16-10-85 | Litongo                  | Village Headman                    |
| 4. Daniel Likulundundu | 2-11-85  | Khama Village            | Fisherman                          |
| 5. Daniel Mayeya       | 5-10-85  | Mukusi Village           | Retired Teacher<br>now Fisherman   |
| 6. Imataa Mukumba      | 11-10-85 | Senanga                  | Fisherman                          |
| 7. Inubu Kapinda       | 5-10-85  | Mukusi Village           | Village Headman<br>and Fisherman   |
| 8. Ishewambuto Mulonda | 25-10-85 | Kahonono Village         | Local Court<br>Justice             |
| 9. Jameson Namata      | 2-10-85  | Kalabo Boma              | Council Worker                     |
| 10. Kasuka Mwauluka    | 7-3-86   | Lusaka                   | University of<br>Zambia, Principal |
| 11. Likando Silondiso  | 2-10-85  | Kalabo Boma              | Fish Trader                        |
| 12. Liomba Liandeko    | 16-10-85 | Likuyu                   | Fisherman                          |
| 13. Liswaniso Kalaluka | 1-10-85  | Kalabo Boma              | Fisherman                          |

| NAME                  | DATE     | PLACE          | OCCUPATION  |
|-----------------------|----------|----------------|---|
| 14. Liyungu Mutukwa   | 13-10-85 | Nambundu       | Fisherman   |
| 15. Machana Mayeya    | 5-10-85  | Mukusi Village | Fisherman   |
| 16. Maluti J.C.K.     | 20-10-85 | Mongu Boma     | Provincial Fisheries Officer                          |
| 17. Matome Imaiku     | 16-10-85 | Litongo        | Fisherman   |
| 18. Moses Kanjonja    | 5-10-85  | Lipolota       | Fisherman   |
| 19. Mufaya Mumbuna    | 25-10-85 | Mongu Boma     | Former Cabinet Minister and knowledgeable Lozi Induna |
| 20. Mukusi Muti       | 17-10-85 | Likwangu       | Fisherman   |
| 21. Mulambwa Muimui   | 25-10-85 | Mongu Boma     | A Lozi Induna   |
| 22. Munalula Lubinda  | 4-10-85  | Kalabo Boma    | Fisheries Official                                    |
| 23. Mundia Nalisiki   | 7-10-85  | Libonda        | Reverend  |
| 24. Mutete Kashimani  | 8-10-85  | Lukona         | Local Court Justice and Fisherman                     |
| 25. Mwiya Muhau       | 12-10-85 | Senanga Boma   | Fish Trader   |
| 26. Night Ifunga      | 1-11-85  | Khama Village  | Fisherman   |
| 27. Night Mundia      | 5-10-85  | Musisini       | Retired Senior Civil Servant                          |
| 28. Stanley Liswaniso | 8-10-85  | Likoba Village | Fisherman   |
| 29. Susiku Mutemwa    | 17-10-85 | Litongo        | Fisherman   |
| 30. Waluka Muliokela  | 1-11-85  | Naliele        | Village Headman                                       |
| 31. Wamufu Simbotwe   | 7-10-85  | Kalabo Boma    | District Executive Secretary(Kalabo)                  |