THE RICE INDUSTRY, THE STATE AND FOOD SECURITY IN BAROTSELAND, 1945-1990

BY

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LUSAKA

DECLARATION

I, Monde Sililo declares that this dissertation:

(a) Represents my own work;

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APPROVAL

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ABSTRACT

The main purpose of this study was to investigate the reasons why despite Barotseland being one of the chief producers of rice in Zambia, it remained food insecure and one of the poorest provinces from 1945-1990. Therefore, the study reviewed the impact of the 1945 Ten Year Development Plan (TYDP), the First National Development Plan (NDP) (1966-1972), Second (1972-1976), Third (1979-1983) and the 1989 Fourth NDP in the rice industry *vis-à-vis* food security**.** The researcher hoped that the study will be a contribution to the body of knowledge of the economic history of Barotseland. Qualitative approach was used for data analysis. Information was collected from UNZA main library in Lusaka, the Archives of Zambia and Ministry of Agriculture in Mongu. Oral interviews were done in Mongu, Senanga and Kalabo in Western Province. Since colonial era, annual floods became a major constraint to food security due to insufficient male labour in the canal and drainage works. The colonial government wanted cheap labour to work in farms and mines for whites in South Africa, Southern Rhodesia and Belgium Congo. In the 1940s the problem of food security in Barotseland coincided with the Second World War (1939-1945) economic crisis that affected British territories. Britain wanted to revamp her economy and to help her territories to be economically self-sufficient. Thus she came up with deliberate agricultural policies that encouraged African Peasant Farmers (AFP) to engage in cash crop production. The plan was enshrined in the 1945 TYDP and rice was selected for Barotseland due to the prevalence of many water bodies where rice grew favourably. It was also hoped that by engaging in rice business ventures, the local people would increase their income thus, improve their food security. The state worked in collaboration with donor countries, Barotseland Royal Establishment (BRE) and the private sector in providing Peasant Farmer Support Services (PFSS) to some local rice peasant farmers. Some of the PFSS provided were: construction of canals and drainages, storage, packaging and marketing facilities. In the period between 1950 and 1990, Barotseland recorded a steady increase in rice production. However, the expected improved livelihood was not attained. This was due to various challenges that faced the rice industry. These were: agricultural policies that were contrary to the ecology and terrain of Barotseland. In addition, policy implementation and monitoring processes were inconsistent due to economic crises. Complex Lozi land tenure policy and negative response towards rice state projects by some local people also hindered the growth of the industry. The study concluded that the rice industry was not a profitable business thus the cash proceeds could not carter for the needed food stuffs.

DEDICATION

To my beloved father Mr. Richard Muyunda Sililo and my mother Mrs. Easter Nalinanga who have been my great inspiration and consolation in life.

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MAP

ACRONYMS

ADP	Animal Draft Power
ADPP	Animal Draft Power Projects
APFS	African Peasant Farming Schemes
AVS	Agriculture Verification Studies
BNG	Barotse Native Government
BNT	Barotse Native Treasury
BRE	Barotse Royal Establishment
CBPP	Contagious Bovine Pleural Pneumonia
CUSA	Credit Union Savings Association
CSO	Central Statistical Office
DMCC	Mongu Catholic Centre
FAO	Food Agriculture Organization
FNDP	First National Development Plan
FNDP	Fourth National Development Plan
FNDP	Fifth National Development Plan
FWP	Food for Work Programmes
GDP	Gross Domestic Product
IDZCs	Intensive Development Zone Centres
IMF	International Monetary Fund
INDP	Interim National Development Plan
IRDPs	Integrated Rural Development Programmes
IDZ	Intensive Development Zones
JICA	Japanese International Cooperation Agency
LCMS	Living Conditions Monitory Survey
LUMP	Land and Water Management
MACO	Ministry of Agriculture and Cooperatives
MMD	Movement for Multiparty Democracy
NADC	Namushakende Agriculture Development Centre
NAMBOARD	National Agriculture Marketing Board

N.A.Z	National Archives of Zambia
NERP	New Economic Recovery Programme
OFPP	Operation Food Production Programme
PPP	People's Participation Project
PCU	Primary Cooperative Union
PCU	Provincial Cooperative Union
RRCs	Rural Reconstruction Centers
SNDP	Second National Development Plan
SWAPO	South West Africa People's Organization
WPCU	Western Province Cooperative Union
WENELA	Witwatersrand Native Labour Association
YWCA	Young Women Christian Association

GLOSSARY OF LOZI TERMS

Aluyana	Lozi royal dynasty
Balimu	Ancestral spirits
Buhobe	Nshima
Busike	Organised slave labour used in canal, drainage and agricultural works in Barotseland
Bukwamanyinga	The bond friendship through blood drinking
Hopani	A monitor lizard favoured by many Lozi as relish
Ishee	Princess's husband
Limbwata	A shrine of the dead king
Likombombo	Soft porridge usually prepared from sweet sorghum mealie-meal
Lishanjo	Fertile low-lying wet land gardens at the edge of the Barotse foodplains
Litapa	Fertile lagoon gardens in the wetlands of Barotseland flood plains
Litunda or *Mikomena*	Gardens made by heaping soil on green grass
Litongo Saana	Type of garden characterized by sandy soils in the Barotse flood Plains
Litoma	Spiritual home for the dead
Luselo	Traditional flat basket used for separating the outer layers of grains
Mabisi	Animal milk
Mafisa	A mutual institution in Barotseland that facilitates cattle keeping by the kinsmen or friends on behalf of cattle owners
Maketiso	Free labor chosen by the royal dynasty for agricultural projects

Makonga	Red sorghum
Makuko	Traditional fishing baskets
Matema	Forest gardens where shifting cultivation was practiced
Mayobo	A Lozi traditional political succession ceremony
Mazulu	Mounds or anthills, highly prized fertile gardens and settlement areas in Barotse flood plains
Mikomena	Well drained fertile plain gardens made by heaping soil on green grass
Mulena Mukwae	Princess
Mumonsomonso	Sweet brown wild fruits found in the forest region during rain season
Munanana	Sweet sorghum
Mungongo	A deciduous tree whose nut powder was used interchangeably with groundnuts powder for cooking relish especially vegetables
Nomboti	Custodian of the shrine of the Lozi dead king
Saana	Gardens spread throughout the Barotse flood plains and primarily shaped by mass movement of water from the scarps and also bordering the Barotse flood plains
Saandi	A reed fenced structure normally placed in flood waters in meant to trap the annual flooded areas of the Barotse flood plains
Siyemboka	A Lozi ceremony for a girls coming out of age
Situli	Traditional grain storage structure made out of mud soil and roof thatched

CHAPTER ONE

INTRODUCTION

INTRODUCTION AND HISTORICAL BACKGROUND

This chapter provided the introduction and background of the impact of the National Development Plans (NDPs) in the agricultural sector *vis-à-vis* the rice industry and food security in Barotseland, 1945-1990. Globally, rice is a major staple food crop that enhances food security of a large segment of mankind. It is also a strategic commodity for poverty reduction among the rural population in areas of production and processing plants. Dependent much upon rice as the base of their economy are the Asian countries. In Latin America and Africa, rice as a cash and food crop is important in improving the livelihood of the rural population.[1]Analysing the rice value chain in Zambia, Felix Chizhuka stated that rice had a great potential to provide a base of increasing food security levels as well as to offer higher net income in rice growing areas of Zambia. Some of the chief producers of the commodity in Zambia are Northern, Barotseland, Luapula and Eastern Provinces. Chizhuka added that Zambia has competitive advantage in rice production because it accounted for about 40 percent of surface water resources in the Southern African Development Community (SADC).[2]

Defining the term *food security*, Food and Agriculture Organization (F.A.O.) sub-committee contended that, a household is food secure when it has regular access to healthy food that is adequate in terms of quantity, quality, variety and culturally acceptable.[3] Mandivamba Rukuni and C.K. Eicher defined food security as a situation where a household has enough food at all times involving both availability and accessibility in terms of supply and demand.[4] R. Nair stated that the majority of the sub-Saharan countries have challenges of crop failure that consequently cause famine and hunger among households. He also explained that the magnitude of food insecurity may differ in various areas depending on the constraints to food security. Food insecurity can be influenced by various factors. These were such as climate, high poverty levels, inconsistent access to food supplies and lack of appropriate coping strategies against constraints to food production. On the other hand, the attainment of food security in any given area is dependent on government policies, the native authority and the response of the local people towards the goals set.[5]

Pre-colonial Barotseland communities sustained their food security by engaging in various economic activities such as crop farming, cattle rearing, fishing, hunting, digging of roots and collecting of wild fruits.[6] The main staple food crops for the pre-colonial Bulozi societies were maize, sorghum, millet and cassava. Other food crops grown in the area included groundnuts, beans, Irish and sweet potatoes, rice, fruits and vegetables. In addition, fish, meat and milk constituted a vital component of the diet.[7]Annual flood levels in the Barotse flood plains controlled the calendar of all economic activities in Barotseland. Thus, without regulating the annual flood levels through canal and drainage works, local communities would experience excess annual floods. Consequently, this resulted in famine and hunger. To control the annual floods, the paramount King of the Lozi, Lewanika Lubosi and Yeta III engaged slave and tribute labour to construct and clear canals and drainages. Since annual floods were well controlled, the pre-colonial Barotseland had viable economy hence, food secure. In the same vein, the clearing of the canals and drainages further facilitated easy transportation, human mobility and communication in the province.[8]

Pre-colonial communities in Barotseland were occasionally hit by constraints to food security. These were such as floods, droughts, infetile sandy soils, locust invasions, loss of animals due to some diseases. In some cases, hunger and famine were caused by inadequate distribution of the available resources between the Lozi royal dynasty and their subjects such as: the Tonga, Ila and Shukukumbwe tribes.[6] Since the colonial era, annual floods were the great constraint to food security in Barotseland. This was due to lack of sufficient male labour in the canal and drainage works to control the annual food levels. Consequently, annual floods inundated food crops and the Lozi experienced a drastic fall in food production levels.[7] Food insecurity problem was further increased by the fact that the forest region of Barotseland was covered with infertile sandy soil that was easily affected by drought.[8] Lack of sufficient male labour was attributed to colonial policies that encouraged wage labour migration. Such policies included taxation, abolition of slave labour in 1906 and tribute labour in 1925. The labour migration policies were meant to deliberately compel the able bodied men to seek jobs in mines and farms owned by the whites in South Africa, Southern Rhodesia (present day Zimbabwe) and Belgium Congo.[9]

Britain's high expenditure during the Second World War resulted in economic crisis which affected her colonies. Thus, the prevailing food insecurity conditions in Barotseland coincided

with the high levels of poverty caused by the war economic crisis. In 1945 the crown government came up with a Ten Year Development Plan (TYDP) through which the Africans were encouraged to engage in cash crop farming. By so doing, British would revamp her economy and her territories would not depend on the imported commodities but rather be economically self-sufficient.[10] Rice growing was identified by the colonial government as one of the cash crops that would grow well in the annually flooded areas of Barotseland. It was hoped that from the rice cash proceeds the local people engaged in the business ventures would be able to purchase the needed foodstuffs and material items. In 1948, the first rice scheme was launched in Mongu District at Namushakende Development Centre (NADC). Similar projects were also implemented in other parts of the province such as Mongu, Sefula, Limulunga, Senanga and Kalabo Districts.[11]After independence in 1964, rice growing continued to be considered a business venture with potential to significantly increase incomes and employment opportunities of the local people in the rice growing areas in Zambia. [12] Statistics on rice production in Barotseland indicated steady increase in rice production levels from 1950 to 1990.[13]

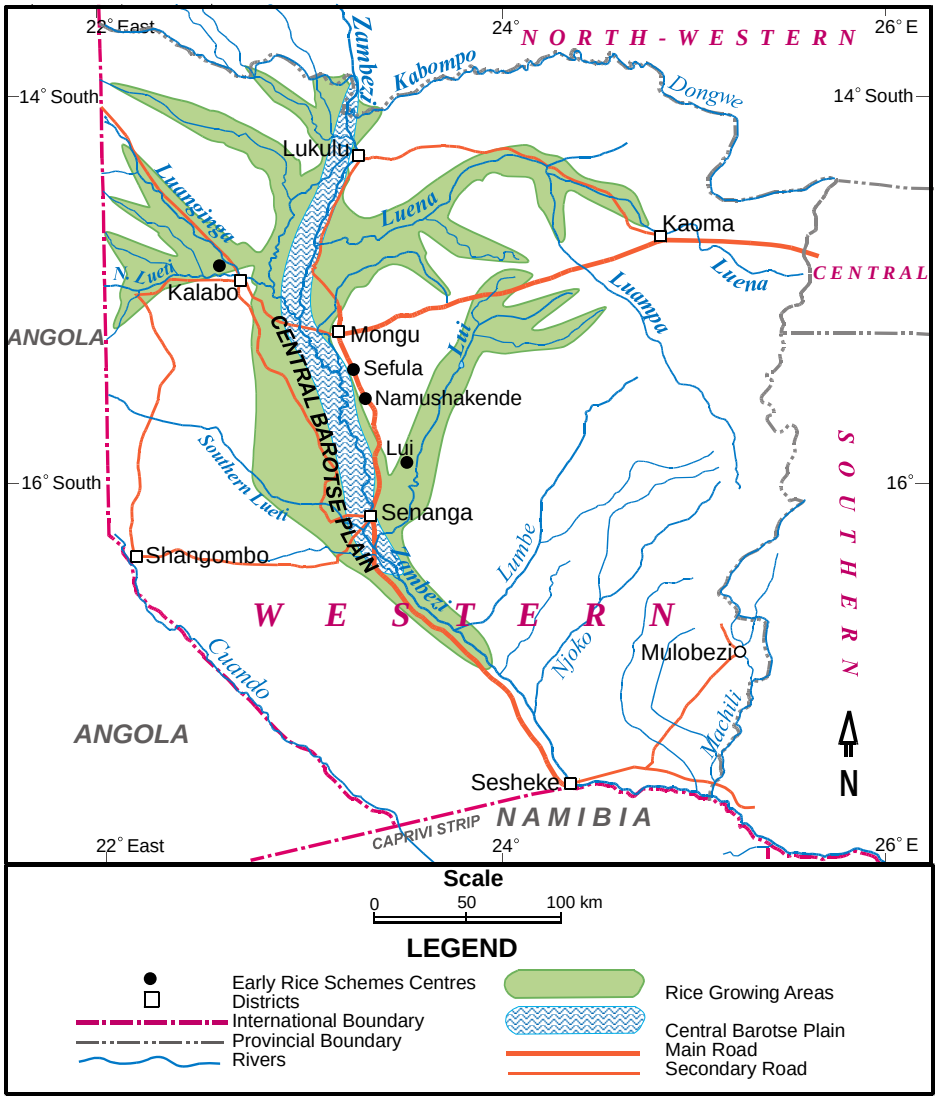
The Area of Study

Thus the area of our study comprises the following districts, Senanga, Sioma, Mitete, Shangombo, Mongu, Limulunga, Mooyo, Kalabo, Sikongo, Kaoma, Lukulu, Sesheke and Mwandi. Mongu is the headquarters of Barotseland (see map 1). The area was chosen because of its vulnerability to famine and high levels of poverty largely caused by annual floods, infertile sandy soils coupled with erratic rains. The state encouraged rice production by the local peasant farmers in the annually flooded Barotse flood plains, along the tributaries of the Zambezi River as well as in the plains and dambos of the forest region. See the map on page 4.

The Geography and Ecology of the Barotseland

The main feature of the Barotseland was that it had two geographical units namely; the Barotse flood plains and the forest region. The province was bisected by the Zambezi River that runs through it from north to south, in a bed of rich alluvial flood plains traditionally known as Bulozi or *Ngulu*, the name commonly used during the pre-colonial era. Along the course of this river, were larger tracks of flat land which stretched for 40. 23 km on either side and became entirely flooded in the rain season**.**[14]

Map 1: Rice Growing Areas in the Wetlands of Barotseland



Source: Cartographic Unit, Department of Geography and Environmental Studies, The University of Zambia. Updated by the Researcher in August, 2016.

The Zambezi River is joined by many tributaries such as the Luena in the east, while the Luambimba, the Luanginga and the Northern Lueti drain their waters into the Zambezi from the west. The plain, nearly 180 kilometres long, stretches from the confluence of the Lungwebungu and the Kabompo Rivers with the Zambezi River in the north and the confluence of the Lui River (passing through the forest region), in the south in Senanga District. The flood plain varies in width from about 16. 1 kilometres to about 40.28 kilometers at its widest near Lealui. The

annual flooding helped to spread fixation of nitrogen and phosphorous from inundated green plants. Thus, the fertility of the plain soils were replenished annually and consequently, there was surplus food production that resulted in food security among the local people.[15]

The forest region is the highland that is dominated by infertile Kalahari sands and has some few spots of fertile wetlands which also experienced annual flooding. During colonial rule the forest and the Barotse flood plains were commonly known as the Barotseland. In the west, the Barotseland lies next to the Republic of Angola, and to the east and north, it shares borders with Southern, Central and North-western provinces of Zambia, while to the South, it adjoins the Caprivi Strip of Namibia. Since independence, Barotseland is commonly known as Western Province.[16]

Barotseland has four climatic seasons. In July, the province is dominated by high pressures, dry weather and cold nights. This continues through August to September. From October to December is a transitional period of dry and hot weather and daily temperatures reach 38.4^{o}c. The rain season starts in November and ends in March/April. The low pressure period is between December and March when much rain falls. The fourth season is from April to June when the province is covered by cool weather. The 30 year average rainfall in millimeters per year (mm/y) records showed that, the highest average rainfall from 1946 to1984 was recorded in Lukulu in the north and was 1021mm per year while the minimum average rainfall of 730mm was recorded in Sesheke from 1952 to 1986.[17]

Statement of the Problem

Much of the literature on the economic history of Barotseland has shown that since colonial rule Barotseland has been hit by famine, hunger and poverty. The problem was largely attributed to crop failure caused by annual floods that coincided with the Second World War economic crisis. However, less has been done by scholars to discuss why some of the government interventions such as rice growing as a cash crop failed to improve the livelihood of the communities of Barotseland. Thus, this study discussed the state of food security in pre-colonial Barotseland. It also analysed the impact of the 1945 Ten Year Dvelopment Plan (TYDP) on the agricultural sector and rice industry vis-à-vis food security. It further discussed the impact of the First

National Development Plan (FNDP) from 1966-1972, the Second NDP (1972-1976), the Third NDP (1979-1983) and the 1989 Fourth NDP on the rice industry *vis-a-vis* food security in Barotseland.

Objectives of the Study

The main objective of this study was to discuss why despite the increase in rice production as a cash crop, Barotseland continued to be food insecure and very poor. Thus, the study analysed the state of food security in the pre-colonial Barotseland. It also reviewed the impact of the implementation of the 1945 TYDP in the agricultural sector and the rice industry *vis-a-vis* food security. It further reviewed the impact of the National Development Plans (NDPs) between 1964 and 1990 in the rice industry *vis-à-vis* food security among the local people.

Rationale of the Study

This study was justified on the ground that there is no comprehensive literature that investigated why some of the government intervention measures such as rice growing as a cash crop failed to improve the livelihood of Barotseland. This study fills an exisiting gap in the economic history of Barotseland by analysing the rice industry in relation to food security. It is hoped that, the study will inspire other scholars to make further investigations on the phenomenon.

Literature Review

A survey of literature showed that considerable research has been done to investigate the problem of food insecurity while other scholars researched on the rice growing in Barotseland. Howerver, the rice industry in relation to food security has not been investigated. Studies on the state of food security and famine in pre-colonial Barotseland, in the late nineteenth century were vital to this study. Sammuel N. Chipungu discussed famine and food shortages in Bulozi from 1850-1900.[18] He attributed the famine and food shortages in the area to the occurrences of natural calamities. He also identified the Barotseland social formation, which promoted tribute labour to have been another major constraint to food security among the ordinary people. He further argued that the ordinary people significantly increased the food yields of the Litunga and the royal families, while they did less work in their own gardens. This study was helpful to our study because it provided a background of the causes of famine in Barotseland.

Francois Coillard also discussed food shortages in Bulozi. He pointed out that in 1886, food shortages were evident in Sefula, and people lived on dried fish and cassava. He added that in May 1887 and by April 1895, the threat of famine emanated from droughts. He also stated that Nalolo gardens were ravaged by the locusts which attacked the staple food crops such as maize and millet. He therefore observed that, natural calamities brought more misery in the land in the last 20 years of the nineteenth century.[19] This source was vital to this study because it discussed the constraints to food security in Bulozi.

Eugene L. Hermitte's study on the economic history of Barotseland between 1800 and 1940 explained the prevalence of several political crises during the second half of the nineteenth century.[20] The study argued that civil wars had a detrimental effect on food production among the subject tribes in Barotseland. The study also gave examples of the civil wars of 1884-1885 which hampered agricultural production and led to famine and hunger among the local households. This study was useful in analysing how internal conflicts weakened the local people's capacity in food production that consequently led to food insecurity in Barotseland.

Chewe M. Chabatama in his study "peasant farming, the state and food security in North-Western Province", discussed the impact of ecological constraints to food security.[21] He further explored factors such as male labour migration to the white mines and farms in South Africa, Southern Rhodesia and Belgium Congo well as finance capital on local food supply in North-Western Province. Chabatama explained that, the local people remained resilient and that they survived the constraints to food security by devising various famine and hunger survival strategies. Chabatama also argued that rice was grown by the people of North-Western Province in the pre-colonial period. He further pointed out that, though the government encouraged rice growing in the province, the local people never adopted it as a staple food, and that with a fragile market, it became an exercise in futility. This information was important to our study because it informed us on the impact of male labour migration on North-Western Province which, during colonial period, was part of Barotseland. In addition, the literature explained some of the challenges faced during the implementation of rice growing as a cash and a staple food crop.

Bennett S. Siamwiza analysed the resilience of the valley Tonga to ecological vulnerability that was often induced by droughts and floods.[22] He also discussed colonial intervention against famine such as famine relief and that social networks based on the moral economy were

important survival strategies among the local people. This information was in conformity with our study because it explained the state interventions against floods and consequences of droughts in an area with ecological vulnerability similar to that of Barotseland. The study provided further information about various famine and hunger coping strategies devised by the local people which were similar to the ones practiced by the Lozi communities.

Choolwe Beyani's study added value by analysing how the colonial labour migration policies such as the 1906 emancipation of slave labour and the 1925 abolition of tribute labour dislocated the agricultural sector in Barotseland.[23] He argued that, due to annual floods, Barotseland's agricultural economy failed to support the indigenous people even at subsistence level. This information was vital to this study because it indicated how colonial labour migration policies dislocated the Lozi economy and consequently led to food insecurity.

The study on Kalabo district by Kafuba Mboma explained the adoption of rice growing by both the government and the local peasant farmers. Mboma discussed the changing role of women in agriculture among the Lozi of Kalabo District from 1906 to 1986.[24] He also explained how the implementation of the 1945 Ten Year Development Plan (TYDP) by the colonial state facilitated rice growing as a cash crop in Barotseland. The work was significant to this study because it helped evaluate the role of women in rice growing and also in reviewing the implementation of the NDPs in relation to rice growing as a business venture in Barotseland.

Laura van Horn's study on the economic history of Barotseland discussed factors that led to the decline of the once viable economy of Barotseland. He argued that, the state of food insecurity caused by excessive floods forced the British government to provide some funds for the clearing of drainage canals in order to increase the levels of food production. He however observed that, less was achieved because canal works were only done in the last decade of colonial rule from 1954 to 1964. She attributed some of the major constraints to food security and poverty among the local households to cattle diseases such as Bovine Pleura-Pneumonia (BPP) that destroyed an important source of Lozi income. She added that, the usual long and destructive series of floods that began in the 1930s coupled with the slim margin of profitability from the agricultural produce slowed down the growth of the agricultural sector.[25] This study helped in analysing the achievements and challenges in the implementation of the 1945 National Development Plan in connection with commercial rice growing. It thus helped to understand why the problem of food

insecurity and poverty continued to cause vulnerability despite some Barotseland households engaging in rice growing as a cash crop.

John Helen's work was a national analysis of the economic resources in colonial Zambia.[26] He explained that the colonial government spent £20 000 on hired labour in 1958 on the construction and maintenance of canals. He added that the colonial government encouraged the Barotse Royal Establishment (BRE) to re-introduce compulsory communal labour for the maintenance of drainage networks. He also argued that rice production in the province was intensified in the 1950s. This literature helped to inform our study on the role of colonial government and of the local authorities, the BRE in the construction and the maintainance of the canals and drainage systems in the Barotse flood plains. The study helped us analyse the relationship between the colonial state and the Barotseland Native Authority (BNA) in their quest to improve the local people's livelihood through famine and poverty mitigation measures such as the rice enterprise.

Gear Kajoba's working paper on land tenure and food security was an attempt to discuss the social-ecological resilience of the people of rural Zambia.[27] It explained the post-colonial state intervention measures towards improving the agricultural sector in Zambia. The study further explained how policy supported the production of maize as a cash and staple food crop more than other crops. It also indicated that various cattle diseases that caused the death of many cattle in Barotseland and Southern provinces contributed to low levels of crop production in the said provinces in the post-colonial period. This information was important to this study because it helped in analysing the successes and challenges in the rice industry in relation to food security in Barotseland.

Felix Chizhuka's study appraised the rice value-chain in Zambia. He explained how the Zambian government helped the local small scale rice producers in Barotseland. This was through rice seed distribution; training the farmers in rice growing techniques and in rice marketing during the post-colonial era. He attributed the constraints to rice marketing processes to poor road network; poor rice quality and lack of local markets for rice.[28] Chizyhuka's work was beneficial in reviewing the NDPs in relation to rice growing practices and marketing processes. Therefore, the study helped to explain why hunger and poverty continued in the Province despite rice growing as a cash generating venture and as a food crop.

The Japan International Cooperation Agency (JICA) carried out a survey on how rice production and marketing in Western and Northern Provinces of Zambia could be enhanced.[29] The survey indicated that, rice was classified by the Zambian government as one of the major staple food crops for human consumption together with maize and cassava. It also pointed out the challenges in rice growing as a cash crop as well as a food crop in Barotseland. The report was significant to our study because it provided information on the various challenges faced by the rice entrepreneurs in their quest to attain self-sufficiency in food security.

The study by Dean Mulozi and M. Hichaambwa gave an account of the impact of free marketing reforms on small holder rice production in Western Province.[30] The study argued that the implementation of free market reforms dislocated the rice processing and marketing systems. The study also revealed that the main aim by the state during the First National Development Plan (FNDP) was to reduce social and economic gaps that existed between the rural and the urban dwellers at independence in 1964. This literature was vital to our study because it provided necessary information on the role of the Zambian government in the successes and failures towards achieving the goals of the NDPs in improving the livelihood of Barotseland households through rice growing

Conceptual Framework

The concept of *food security* adopted in this study was based on the definition given by Rukuni and Eicher as noted earlier in paragraph one that, a household is food secure when it is able to access enough needed foodstuffs at all times.[31] Since the majority of the Barotseland households were *food insecure* largely due to crop failure caused by annual floods and high levels of poverty, they needed a cash crop to help them raise their income in order to sustain their livelihood. It was therefore hoped that the local rice peasant farmers, traders, millers and field workers would obtain enough profits from rice sales. Thus, enable them purchase the required foodstuffs and other material items.[33] The benchmark for measuring the successes and failures in attaining food security through the rice industry in Barotseland was mainly based on whether rice growing was a profitable business venture or not.

Research Methodology

This study used the qualitative research methodology. The first part of the research was done at the University of Zambia main library in the special collections where both primary and secondary sources were consulted. The published and unpublished primary sources yielded information concerning the theoretical understanding of the impact of government policies on agriculture in relation to rice growing and food security in Barotseland. The second part of the research was done at the National Archives of Zambia (NAZ) in Lusaka where departmental files on agriculture and rice growing, government publications, annual reports, district and provincial reports on rice production in the province were consulted. The sources informed us the succeses and challenges faced by local peasant farmers in rice growing, post-rice processes and their in marketing rice during colonial rule and Zambian government era. The last part of the research was done in Barotseland where oral interviews were conducted with government officials, rice growers, millers, traders and field workers.

Organisation of the Study

This dissertation was divided into five chapters. Chapter One provided the introduction and historical background of the study. It discussed the different literature by various scholars relevant to this study. Chapter Two examined the state of food security based on different economic activities engaged by the pre-colonial Barotseland societies. Chapter Three investigated the negative impact of colonial rule on food security in Barotseland. It also reviewed the implementation of the 1945 Ten Year National Development Plan (TYDP) in line with the agricultural sector with emphasis on rice growing and food security in Barotseland. Chapter Four discussed value of rice as a staple food among local people. The chapter further reviewed the implementation of the National Developmental Plans in the rice industry *vis-à-vis* food security in Barotseland, 1964-1990. Chapter Five was the conclusion of the whole study.

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CHAPTER TWO

THE STATE OF FOOD SECURITY IN PRE-COLONIAL BAROTSELAND

This chapter discussed the state of food security before it was jeopardised by colonial rule. Therefore, the chapter explained the background of the Luyana (pre-colonial Lozi people) and their economic, social, and political advantage over other surrounding tribes. It discussed various socio-economic activities that enhanced food security at household level. These included crop production, pastoral works, fishing and hunting, tribute and redistribution of wealthy. It also analysed the Luyana food culture, land tenure policy, and land usage in relation to food security. The chapter further discussed the importance of male labour in controlling floods through canal and drainage works and how the annual flood levels determined the calendar of economic activities in Barotseland. It acknowledged the fact that, the province was occasionally hit by various natural calamities that threatened food security among the local households. Thus, various measures were devised by the pre-colonial societies to replenish the lost food and sometimes prevent the looming famine and hunger.

Background of Settlement of the Luyana in Barotseland

In the early seventeenth century, the Luyana arrived from Congo under the female leadership of Mbuywamwabwa and settled in the Barotse flood plains which flooded annually during the rain season.[1] The settlements of the Luyana were centered around valuable economic resources such as mounds or anthills locally called *mazulu*, grazing and fishing sites. Their access to these basic means of production gave them both economic and political power to conquer the surrounding and external tribes. The Tonga, Ila and Kaonde people were some of the external tribes that were conquered by the Luyana people while the Kwangwa, Mbowe and Totela were some of the subject tribes around the Luyana.The socio-economic and political strength made it possible for the Luyana to be rulers who did not only apportion land but also received tribute from the people around.[2] Pre - colonial Lozi communities enhanced their food security by enganging in different economic activities. They established gardens, domesticated few herds of cattle and carried out fishing and hunting activities. The Lozi had more access to basic means of production compared to other tribes. Thus the majority of the Lozi households were food secure.[3]

Pre-Colonial Lozi Food Culture Dynamics

The earliest staple crop of the pre-colonial plain Lozi was millet, *munanana* (sweet sorghum) and a number of tubers.[4] The food crops were skilfully selected according to the nature of the wet lowland ecology of the Barotse flood plains. *Munanana* grew well in the flood plains.[5] The *munanana* crop provided local people with nutritional supplements thus enabling them to withstand hunger and famine that could occur due to annual floods. By adopting *munanana* as their staple food crop, the Lozi demonstrated resilience and ingenuity to survive hunger and famine caused by annual floods.[6]

In the 1800s, the Lozi communities developed trade contacts with the Ovimbundu, Mambali, Portuguese and Arab caravan traders from Angola.[7] The traders introduced exotic crops such as mint maize, sweet potatoes, beans, red sorghum, pumpkins, water melon, cassava, yams, Livingstone potatoes, sugarcane and rice. Therefore, rice was not a new crop in Barotseland and in many other provinces of Zambia. It was adopted, eaten and traded at a small scale by the local communities as early as the eighteenth century.[8] Mubita Mubita stated that, after the Lozi adopted other staple food crops such as maize and cassava, they continued consuming *munanana*.[9]

The Lozi diet diversified at different phases. For instance, after the Kololo invasion of 1834, the Lozi people scattered to the edge of the plain and forest region for refuge.[10] In the forest region, Lozi people adopted *matema* gardens where cassava was cultivated.[11] The adoption of new food crops and new gardens by the indigenous people demonstrated how adaptive and industrious they were in their quest to be food secure prior to colonial rule. By 1853, David Livingstone affirmed the prevalence of a wide range of nutritious foodstuffs introduced by the Arab and Portuguese traders in the Lozi diet.[12]

Indigenous Food and Nutrition

In an interview, Kaywala Ilyamupu of Mongu District stated that milk, fish, meat, vegetables and fruits were part of Lozi diet that ensured many local households had food security.[13] To ensure a balanced diet, Indopu Njamba explained that Lozi communities consumed carbohydrates, fats, vitamins, proteins, iron and energy giving food.[14] He further attested that, during the pre-colonial era rice was grown by few individuals at subsistence level and only consumed as a

supplementary food crop or as a snack and not as a staple food meal. He added that *munanana* was cooked into thick porridge which was locally called *likombombo*. Indopu also explained that staple crops were pounded into meal powder and cooked into nshima (traditionally known as *buhobe*) accompanied by relish such as fish, game meat, cattle meat, milk and vegetables[16]

There was a distinction in the diet of the Lozi plain dwellers and forest indigenous communities. Most of the Lozi people who lived in the Barotse flood plains consumed fish and milk with nshima on a daily basis.[17] The Lozi also obtained proteins from animals such as lechwe, turtles, hippopotamus, crocodile, water back, monitor lizard locally (*hopani)*, tortoise and cranes. Although most of the Lozi of the plain domesticated cattle, its meat was occasionally eaten as relish only during special ceremonies. These were such as marriage, death, political succession (*mayobo*) and when a girl came of age (*siyemboka*) ceremony.[18]

Forest tribes had scarce fishing sites and a few cattle. Thus, fish and cattle products such as cattle meat, milk and cow dung were only accessed by exchanging them with game meat, fruits and other products found in the forest region. Animals such as elephants, buffalos, hares and impalas in the forest provided forest dwellers with proteins and fats. Domesticated birds such as chickens and ducks as well as wild birds were part of the animal protein accessed by the local people. In addition, mushrooms were widely consumed by the forest household communities while cassava leaves were their main vegetable dish. For cooking, they used milk cream, nut powder from groundnuts and mungongo tree to make their relish more nutritious and tasty.[19]

Lutangu Lutangu of Nambulu village explained that during the rainy season (from December to April), wild fruits were accessed by pre-colonial Lozi societies. He also observed that, the diet for the Lozi people during the pre-colonial period consisted of foodstuffs with nutritional value ranging from carbohydrates, proteins, vitamins, energy, mineral nutrients, fats, and oils. He also explained that many households were food secure because most of the food stuffs they needed were accessible all year round.[20]

Land Tenure and Food Security

Due to the complex nature of the land tenure system in Barotseland, the level of food security was dependent on how much arable land a family accessed. In Barotseland, land tenure matters were surrounded by controversial issues of inequality between the royal dynasty and their

subjects. Ultimately all means of production and the land products belonged to the nation through the King. Though this was the case, the subject tribes were entitled to and enjoyed the rights to arable land, to use as grazing and fishing sites in the commons.[21] Contrary to the above view, Clarence-Smith suggests that the land tenure system among the Lozi had evolved to resemble what could be characterised as semi-feudal property relations. He contended that the minority Lozi ruling families were privileged to access more arable land, cattle, valuable grazing and fishing sites. This was because the means of production privately belonged to the royal families and could even exclude their subjects from obtaining access to the valuable resources.[22]

The attachment of hereditary principle to valuable land by the Lozi dynasty was illustrated by the law of the 1880s, whereby after the Kololo reign in Barotseland, the Lozi dynasty were entitled to claim back their ancestral arable land which they had lost some decades earlier as a result of the Kololo invasions of the Barotse flood plains. Inequality in land acquisition between the royal dynasty and the subject peoples was one of the reasons why when hit by natural calamities such as excessive flood, droughts, tsetse fly invasion and diseases, the subject tribes would be more food insecure than the Lozi royal families.[23]

Land Usage and Food Security

The discussion on land usage in Barotseland is also vital in analysing the extent to which the pre-colonial Barotseland societies obtained their livelihold. The Lozi communities became innovative and dynamic by adopting and cultivating various food crops in different gardens such as *lizulu, litapa, lishanjo, litongo, mukomena, litema* and *saana*. Food crops from these gardens supplied the Barotseland households a variety, abundant, nutritious, and culturally favoured foodstuffs all year round.[24]

***Lizulu* Gardens**

In the Barotse flood plains, the most prized gardens were the *lizulu* and the *litapa*. The *lizulu* was an antihill garden in the Barotse flood plains. It was favoured for its comparative advantage to any other garden in the plain as it played a double role as a safe settlement as well as a way of protection against hunger and famine caused by floods.[25] This was due to the fact that it was an anti-hill which was relatively above the annual flood water levels.[26] The *lizulu* gardens were fertilised by cow dung. They were cultivated at the onset of the rains in November and the

planting of food crops was done between December and January. This was because of their nature of being very dry in the absence of rain water. The harvest was done between April and May.[27] In an interview, Mukelabai Wamundila indicated that, maize, millet and sorghum were the main staple food crops cultivated in the *lizulu.* In addition, yams, rice, vegetables, tobacco, sugarcane, pumpkins and groundnuts were also cultivated there.[28] She added that, totally depending on the *lizulu* for food security resulted in food insecurity among some local households whenever drought hit the land. Wamundila explained that these gardens were characterised by clay soils that hardened easily when faced with dry spells or if rains ended during the crop flowering stage.[29]

Litapa **Gardens**

These were the lagoon gardens situated in the depressions of the Barotse flood plains. The fertility of the *litapa* was replenished by annual floods that helped in the fixation of nitrogen and phosphorus. These elements supported crop growth. It should be noted that apart from the *lizulu,* all the Barotse flood plain gardens were fertilised by the alluvium of the annual floods.[30] The Lozi had a number of *litapa* than the rest of the surrounding tribes.[31] Therefore, they yielded more food crops from these gardens.[32]

Sapanoi Nalishuwa stated that early planting techniques were devised by the local communities in order to avoid crop failure caused by early ending of the rains. He also explained that, due to their high moisture content, the planting of crops in the *litapa* was done in August before the start of the rain season. Nalishuwa also explained that by December, food crops from these gardens were ready for consumption.[33] Produce from the *litapa* gardens included *munanana*, rice, beans, sugarcane, water melons, pumpkins, white and sweet potatoes as well as vegetables. Early harvesting of this wide range of foodstuffs from these gardens protected the local people from food insecurity caused by occasional droughts.[34]

Lishanjo **Gardens**

These gardens were one of the fertile low-lying wetland gardens situated at the edge of the Barotse flood plains.[35] Local people added more fertility to the gardens by burning the cleared grasses from the fields. However, the *lishanjo* were water logged, thus, they needed a lot of labour to drain the swampy environment into arable land through canal and deep drainage works.

Canal and drainage works consequently resulted into surplus food production during the reigns of Litunga Lewanika Lubosi (1878-1916) and Yeta III (1916-1945).[36] Therefore, surplus production was facilitated by the Lozi ruling group that organised labour called *busike* (slave labour) and *maketiso* (free labour from the chosen).[37]

Lishanjo and other plain gardens such as, *mikomena* and *litongo* supplied local communities with a double harvest per year. The first harvest was in December and January, while the second one was between April and May. Maize, sorghum, rice, sweet potatoes, cassava, vegetables, pumpkins, beans and sugarcane were all grown in the *lishanjo*.[38] Therefore, prior to colonial rule, households who had access to these plain gardens were food secure throughout the year.

Mikomena **Gardens**

The *Mikomena* were gardens in form of ridges made by heaping soil on green grasses. They were part of the plain gardens which were well drained and were fertile due to the use of the green manure technique. This kind of farming technique helped the food crops in these gardens survive early floods because ridges were raised above the usual ground level.[39] Food crops from these gardens were maize, cassava, sweet potatoes, vegetables and beans. These food stuffs added to the levels of food security among the Lozi societies.

Saana **Gardens**

The *saana* gardens were primarily shaped by mass movement of water from the scarps bordering the Barotse flood plains.[40] These gardens were spread throughout the Barotse flood plains. In an interview with Lutangu Lutangu, he distinctly described the *saana* gardens as not specifically being one type of garden but two, namely the dry *matongo* and wet *matongo* gardens. He further explained that the latter were relatively fertilised by the alluvium of the annual floods while the former were characterised by poor sandy soil. He added that the fertility of the dry *matongo* was improved by cattle kraaling, thus, the produce from these gardens improved the levels of food security of local people.[41]

Kwalela Kamayoyo of Senanga clarified that some parts of the *saana* were poor for crop farming but provided rich grazing sites for cattle in the plains. He added that in the *saana* gardens, apart from yielding a variety of food crops produced in other plain gardens, rice and fruit trees

favourably grew there. Thus, Kamayoyo asserted that by adapting to the usage of the *saana*, the Lozi people were assured of enriching their food security.[42]

Matema Gardens

The *matema* were forest gardens. Many Lozi households in the Barotse flood plains adopted the new techniques of shifting cultivation in the *matema* from the Mbunda of Angola, the Kwangwa and other forest tribes.[43] Kashweka Kalumbu, a Mbunda man of Senanga District explained that, cassava, millet and sorghum were widely cultivated by forest dwellers as staple food crops.[44] Cassava helped the Lozi people to survive food insecurity caused by floods and droughts. This was because it was tolerant to dry conditions of infertile sandy soil that covered the forest region. Cassava roots could not be easily attacked by locusts. Cassava could also be preserved in the soil until when it was needed for consumption. Its leaves were eaten as relish. To replenish the fertility of the *matema*, fallowing was practised for at least three to five years.[45]

To increase the levels of food security in pre-colonial era, family labour was used. The Lozi male and female shared agricultural activities. Men's duties were to cut trees, burn and brush virgin fields, build grain stores, open and maintain canals and drainage systems. Women together with the children engaged in cutting small bushes, planting crops and scaring birds away from gardens. Cultivation, planting of crops, weeding and harvesting was jointly done by both male and female folk. When they needed male labour at any stage of crop production up to harvesting, female headed households were helped by their male relatives. After food crops were stored in bans, mostly it was women who prepared and shared food among the household members. They were also at liberty to share the harvested food with other members of the community.[46]

Fishing was one of the most important economic activities practised by the Lozi communities both at household and community level. Fish was favoured and regularly consumed by both the Barotse flood plains and forest dwellers. In the Barotse flood plains, fish was widely caught from Zambezi River, its tributaries and lakes (see some of the rivers on the map on page 4). The forest dwellers also accessed fish from rivers, streams, dambos and shallow depressions sparsely found in the forest region. In some areas of the forest region where fish was scarce, local people accessed it through trade.[47]

Lozi communities engaged in more than two dozen ways of catching fish. They caught fish in non-return traps, in reed-fences called *saandi* which was done between December and February at a small scale due to the high water levels in the main water courses. Trapping methods were also used in fish dams and shallow streams between April and July at the recession of the floods.[48] Catching fish by the netting methods, using trawl and bark nets was done between July and August when the water levels were low. More than other months of the year, fish was constantly caught at a large scale by many individuals between the latter seasons. Between September and November and again between December and January when the plains were flooded, larger communal fishing groups were deliberately organised by the King through Indunas and village headmen to catch fish in the lakes. Such mass fish catch were only conducted twice in a year.The fishing calendar was controlled by the flood levels.[49]

Despite the differences in the quality and quantity of fish caught during different seasons, Mulonda Saeli, one of the headmen in the plains explained that, fishing activities continued throughout the year. He futher elaborated that, the Lozi people living in the plains mastered the levels of floods, and anxiously awaited the days of mass killing of fish at the rising of floods between November and December.[50] Explaining the importance of gender roles in fishing in Barotselnd, ma-Kapelwa Yeso narrated that both men and women participated in fishing. Men caught big fish in the rivers and streams through the use of spears, bark nets and a reed fence traditionally known as *saandi* and fishing basket traditionally called *makuko*. She also stated that, usually women used baskets to catch small fish in shallow waters, dambos and in streams throughout the year. Ma-Kapelwa further informed that both men and women played an important role in ensuring access to fish protein that enhanced food security throughout the year.[51]

Pastoralism and Food Security

According to Kwalombota Muyuwano, pastoralism was one of the most important economic activities that enhanced food security in Barotseland. She explained that cattle was the most important animal that was domesticated by the Lozi living in the plains than any other animal such as goats and chickens.[52] Like the rest of the economic activities in the Barotse flood plains, the calendar for pastoral work was scheduled by the flood levels and was a whole year economic activity. In the Barotse flood plains, rich grazing sources for cattle were available in two seasons.

The rich grazing season for animals was between May to July immediately after the recession of the annual flood levels and also before the high floods occurred from November to January.[53]

From January to May when the Barotse flood plains were inundated by the floods, cattle were affected by the high moisture content as well as lack of grazing sites. These uncomfortable conditions made the Lozi in the plain to devise a transhumance system. This was the time Lozi plain dwellers were compelled by the high levels of floods to migrate from the inundated plains to either the edge of the plain or to the forest regions where they temporarily camped with their cattle from February to May. This annual event came to be traditionally known as the *Kuomboka* Ceremony which meant, coming out of the water.[54] At the end of May, the Lozi happily returned to the Barotse flood plains. Their most favoured home where their cattle accessed rich green pastures. The delay in the recession of the flood waters consequently destabilised the cattle grazing calendar because the cattle would spend more months in few and poor grazing sites of the forest region. However, this gave the forest people an advantage of using cattle products such as milk and cow dung. Dung was used to fertilise the forest *matema* gardens.[55]

Lubasi Mufwekelwa explained the value of cattle possession among the Lozi communities as multi-purpose. He stated that, cattle were important for trade, and that it was a source of milk for the local people and provided them with dung for fertilising their gardens while dry dung was also used in place of fire wood. He added that, cattle hides were also important for trade as well as for making clothes and blankets. He considered cattle as a moving bank account that complemented wealth and food security to those who owned them and also to other people who accessed their products through battering.[56]

Cattle products from the plains were exchanged locally with the forest dwellers for labour, dugout canoes, axes, knives, hoes and food stuffs such as fruits, millet, sorghum, cassava and game meat. Cattle keeping provided jobs such as cattle herding for the subject tribes. It also maintained relations between kinsmen and friends due to the fact that during the period of floods and for other reasons, cattle needed to be kept by such relations through a mutual institution traditionally known as *mafisa*.[57]

Cattle possession by the Lozi societies enhanced food security and political security through external trade. The Lozi exchanged cattle, cattle skin, and ivory for honey, bee wax, cassava and

gunpowder from the Lunda of Zambezi District. The Mambari, Arabs, missionary traders as well as travellers traded guns, gunpowder, clothes and blankets for cattle with the Lozi in the nineteenth century.[58] Hence, the importance of cattle keeping in pre-colonial Lozi societies enhanced food security.

Trade, Bartering and Food Security

Mutumba Mainga explained how trade and bartering sustained food security in Barotseland. She further informed that the ecological differences between the Barotse flood plains and the forest regions created differences in the types of produce that came from the two main agricultural units. She added that each unit had peculiar products which could only be obtained outside through trade or any form of exchange. Hence, maintaining food security among the Barotse flood plains and forest communities. [59]

Mainga identified unique forest products that were absent in the plains. These were such as millet, sorghum, cassava, game meat, honey, bee wax, fruits, nuts, dugout canoes, paddle sticks, axes, hoes, knives, spears, baskets, barks of trees, wooden poles, and labour services. She pointed out unique plain items like fish, cattle, milk, dung, cattle hides, maize, sweet potatoes and reeds. She further explained the three main types of trade relationships in the pre-colonial Lozi land. These were trade relationships between kinsmen and friends, bartering with strangers and through tribute paid to the King and other political authorities and re-distribution. Mainga also explained that trade and battering of the forest and Barotse flood plains foodstuffs and material items played a big role in facilitating food security and other materials in both the plains and forest dwellers. She affirmed that famine that hit the Barotse food plains also affected the forest people.[60] Therefore, the aspect of food security or food insecurity between the plain and the forest region in Barotseland could not be dealt separately.

Rainfall, floods and topographical variations, led to differences between the forest and plain crop yields and levels of food security. Differential production levels in the two regions provided local communities with a wide range of food stuffs and commodities. This co-dependance promoted ruler-subject relationships with reciprocal economic rights in local people's quest to be food secure.[61]

Though cattle were one of the most important trading commodities in the pre-colonial period, the Lozi were careful enough not to destabilise their food security. Max Gluckman informed that, the Lozi traded many cattle with the Mambari traders but Lewanika ruled that only oxen were to be traded to those from outside the country and not heifers to bear calves elsewhere. This cattle trade policy was deliberately implemented by Lewanika to ensure continuity of food security in Barotseland.[62]

Hunting and Gathering

Hunting and gathering were usual economic activities that were important to maintain food security at household level in pre-colonial Barotseland societies. Nasilele Lubasi explained that during hunting expeditions, the male folk used the cow horn formation technique by surrounding *lizulu* where animals hide. He added that, dogs were also important in chasing and killing animals. Lubasi further explained that dogs could identify animals in hiding places by sniffing them and then gave signs of barking to help the hunters locate the animals.[63] Libi Libi stated that, hunting battues were also extended to hunting of birds when the floods receded during the breeding season between April and May.[64]

Walubita Ma-Mubiana of Kalabo disclosed that women supplemented their husbands' efforts in ensuring food security through small scale hunting and as gatherers and collectors of wild fruits. She further pointed out that women also prevented famine and hunger by preserving extra food by use of fire and sun drying methods. She narrated that hunting was a busy activity and was determined by the floods levels.[65]

Famine Survival Mechanisms against Natural Calamities

Many records show that since the late nineteenth century, Lozi societies have been ravaged by various socio-ecological constraints to food security. Francois Coillard, a missionary, who was based at Sefula Mission station in Mongu, explained that there were so many calamities in succession during the late nineteenth century.[66] He further pointed out that in the pre-colonial time, the threats of food crisis emanated from low floods, wars, pestilence, locust invasions and cattle diseases and the Lozi social formation. Like David Livingstone, Clarence-Smith affirmed that in the mid- nineteenth Century, the territory was food secure. He however referred to the late nineteenth century as bad years characterised by hunger and famine.[67] However, food insecurity

occurred occasionally and the pre-colonial Lozi communities gained resilience and replenished the lost food or prevented famine and hunger through various survival strategies discussed in the chapters below.

Raiding, Tribute and Re-disribution

During the pre-colonial period, raiding, tribute and re-distribution of commodities were important famine and hunger survival mechanisms in Barotseland.[68] Raiding through wars was a necessity in increasing and restoring the lost food security. For instance, after the long moments of civil wars of 1884 to 1885 amongst the Lozi royal groups and their supporters, agricultural production was destabilised and the situation culminated into famine and hunger.[69]

To restore food security in the province, the Lozi people went on a long period of raiding expeditions for both labour and cattle against the Tonga, Ila and Toka in 1882 and 1888.[70] Similarly, when the state of food security was threatened by various natural calamities in the late nineteenth century, the Lozi raided the Luvale in 1892. In all these raiding expeditions, the Lozi seized cattle, women and children for reproduction purposes in order to increase the labour force in food production and tribute.[71]According to van Horn, the Lozi also brought back 20, 000 cattle in 1882. The booty together with the new supply of labour boosted the levels of food security for the Lozi communities in the late nineteenth century.[72]

Francois Coillard observed that during Lubosi Lewanika's reign, surplus food production as well as developmental works through canal and drainage systems was accomplished up to 1895. He further explained that, through canal and drainage works, slave and free tribute labour contributed to the surplus food production and easy communication in Barotseland up to colonial rule. Annual floods have always been there in Barotse flood plains, and yet were a blessing because the floods were drained through canal and drainage works. The local people had surplus food production throughout the year. All other economic activities such as cattle rearing, fishing, hunting as well as trade and battering made it possible for the majority of the people of Barotse flood plains to be food secure.[73]

While raiding increased labour supply which boosted the levels of food security in the province, the question remained as to what was the state of food security to the multitudes of the Lozi subjects who were suppliers of labour? Clarence-Smith explained the negative state of food

security among the *busike* and the *maketiso*, the slave labourers and the free labourers, respectively in leap years. He further postulated that slaves were faced with a hard and precarious material and food condition. He also pointed out that subject tribes cultivated their master's fields, tended his flock, fish for him, fetched wood and water, prepared and cooked his meals, built huts and dugout canoes and acted as paddlers and potters.[74] Clarence-Smith also explained that, subject tribes sent grain, milk, wild honey, fish and game as tribute to the King and the royal families.[75] He however commended raiding as an important measure for supplying tribute labour in canal and drainage works in Barotse flood plains. These were, cardinal in preventing food insecurity caused by annual floods.

In pre-colonial Barotseland, re-distribution of resources was an important strategy to avoid vulnerability among the subject people caused by inequitable sharing of land resources. Subjects made discretionary offers through tribute and labour to reciprocate for the land and the resources offered to them by their Lozi masters.[76] Re-distribution of resources to subjects was considered as generosity which was said to be one of the attributes of the Lozi King. For instance, King Lewanika, who after raiding Ila cattle, made them his subjects and sent thousands of large Lozi cattle to be herded by the former through the *mafisa* institution.[77] The King's barges for transport were lent to commoners by the councillors in charge of them without the King's knowledge. Therefore, raiding, tribute and re-distribution were important famine survival mechanisms among the pre-colonial Lozi communities. The lost food for the subject people was replenished by the re-distribution of the King's surplus stocks from his store houses.[78]

Ancestral Spirit Worship

The Lozi believed in a myth that their first female queen Mbuywamwambwa led them from Congo to the Barotse flood plains where they settled. Mbuywamwambwa was said to be the wife of a God called Nyambe. Her children were believed to be daughters and sons of God. Due to this mythological understanding of their religious background, the Lozi believed that when one died, he or she joined Nyambe in a spiritual home (*litoma*) where their dead relatives lived in peace. They understood that the dead became *balimu*; the ancestral spirits. Through the ancestral spirits, Lozi obtained supernatural powers to protect and to provide for them in times of calamities.[79]

In an interview, Ilukena Mushenywa, a resident of Imatongo village in Senanga narrated the importance of acentral worship when facing natural calamities. These were such as sickness, deaths, floods and droughts or rain spells which threatened hunger and famine. He told that the brother to Mboo Muyunda (the first male king of the Lozi) by the name of Mwanambinyi entered the earth mysteriously. He further explained that, since then, Mwanambinyi's spirit would be worshipped and appeased as a god by offering sacrifices in form of milk or beer at the *limbwata* (a shrine of a Lozi king). Mushenywa added that at the time of giving sacrifices, the custodian of the shrine known as the *nomboti* and other elders of the society gave praises and requests to the ancestral spirits.[80] Mubita Muyunda narrated that, after communal prayers and sacrifices were offered at the shrine, heavy rains were experienced.[81]

Predicting famine and Hunger

The pre-colonial Lozi studied nature and its meaning in connection with constraints to food security. Bennett Siamwiza explained that the Lozi were able to sniff hunger by studying the cobwebs prior to the rain season. He added that when the cobwebs appeared in bulk, it was an indication that the coming rain season was threatened by high floods.[82] On the other hand, the presence of less spider webs meant adequate rains and bumper harvest in the coming season.[83]Jeremia Lubasi revealed that excessive heat during summer was also a sign of a bumper harvest. To the contrarly, a very cold and prolonged winter was a sign of drought for that particular year.[84]An interview with Muyunda Sililo revealed that when hunger and famine was threatened by high floods, the Lozi communities concentrated on cultivating flood gardens such as the *lizulu*, and *litema*.[85] When drought was predicted, Lozi communities concentrated on cultivating the low wet land plain gardens such as *litapa*, *lishanjo***,** wet *litongo***,** *litunda* and *mikomena*.[86] Therefore, knowledge of predicting famine kept the local people alert to preserve enough food to void famine in the coming season.

Food Preservation and Storage

Preserving food was another important survival strategy. Grain was dried and then kept in small granaries built off the ground to prevent damage by mice and ants which could eat it. Meat, fish and fruits were all dried and kept for future use.[87] Nawa Singongo explained that food like meat

and fish were dried by fire, sun heat or salted and then kept in the house for bartering or for future consumption.[88]

Moral Economy

Moral economy was another important way of surviving hunger and famine in lean years. Mwitumwa Wamundila explained that begging from neighbours or sharing with friends who had more food were common famine survival measures in Barotseland.[89]*Bukwamanyinga*, which meant a bond of friendship through blood drinking, marrying from rich families and kinship relations were also part of the moral economy that sustained food security among the Lozi communities.[90] Through these social networks, families which were negatively affected by hunger and famine for a long period would sometimes shift to stay with their close relations who had surplus foodstuffs.[91]

Pre-colonial Labour Migration

Njamba Indopu noted that labour migration was one of the important temporal measures to enhance food security among the Lozi societies. He also stated that when men voluntarily went to work in South Africa and they came back after six months before the rain season with some cash that they would use to purchase foodstuffs needed.[92] Billy Sikwatiketo stated that the pre-colonial labour migration was also done to gain cash to purchase some material things.[93]Alfred Tembo explain that in Eastern Province, some men opted to go for wage labour for prestigious reasons because the local wages were too low to sustain their food security.[94] Therefore, in the pre-colonial era, labour migration among the Barotseland societies was only a temperal hunger and famine relief measure.

Scaling Down on Meals

Mubita Mubita argued that when food was inadequete and could not last up to the following harvest season, the indigenous people scaled down on the number of meals. He added that in years of good harvest, many Lozi communities had not less than two meals per day but in lean years, the meals were scaled down to either two or one main meal per day. However, Mubita further observed that, famine was experienced at different times and by different communities. Thus, such years were rarely experienced in Barotseland during the pre-colonial era.[95] When

locusts invaded a field of crops, they devastated all the crops. The indigenous communities tried to prevent excess loss of food crop by scaring the insects by use of fire, eating them and even sweeping them into water sources.[96]

Ma-Mubita Namusa explained that locust invasions led to crop loss despite measures used to prevent the phenomenon. She therefore told that, to avoid hunger and famine caused by locust invasions, the indigenous communities depended on cassava roots and sweet potatoes as staple foods. These food crops could not be easily destroyed by locusts.[97]

Conclusion

This chapter discussed the state of food security in pre-colonial Lozi communities. It has established that when the Luyana arrived in Barotseland in the early 1600s, they settled in Barotse central flood plains. They practised a mixed economy through crop production, pastoralism, fishing and hunting, trade and collection of wild roots and fruits. In the plains, the Lozi accessed and controlled the scarce and valuable means of production such as fertile gardens, grazing, fishing and special settlement sites. This economic advantage gave the Lozi political, economic and social dominance over other surrounding tribes. The chapter further established that, the Barotse flood plains were characterised by annual floods which needed to be regulated through canal and drainage works. These together with other agricultural works were labour intensive thus, required sufficient male labour to accomplish them. Through the indunas and village headmen, the paramount King of the Lozi, Litunga Lewanika and Yeta II organised tribute and slave labour to accomplish canal and drainage works. The chapter also illustrated that the annual flood levels controlled the whole year calendar for all economic activities in Barotseland. Thus, the failure in control of the annual floods led to food insecurity in many households in Barotseland.

The chapter also established that pre-colonial Lozi had two major agricultural land units; the Barotse flood plains and the forest region that provided peculiar food stuffs and material items. The deficit in foodstuffs in each agricultural unit could only be supplemented by batering and trade. Therefore, constraints to food security such as annual floods or drought in either unit affected the other. However, the study further showed that the local people gained resilience against natural calamities and human activities that threatened food security. The Lozi people

adapted to various famine coping strategies such as raiding weak tribes and utilised them in agricultural works. The raided booty was re-distributed by king Litunga to his subjects. The local people also practised annual transhumance, moral economy, worshiped ancestral spirits for protection and for blessings. In addition, they scaled down meals, preserved surplus food, traded and bartered in order to survive famine and hunger. The Lozi also adopted different gardens such as the *lizulu, lishanjo, litapa, litongo, litema and litunda* where they cultivated a variety of food crops in different seasons all year round. Therefore, from the investigations made, it appeared that due to practising a mixed economy and the use of different gardens in crop production, the majority of the pre-colonial Lozi communities were food secure.

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CHAPTER THREE

REVIEW OF THE 1945 TEN YEAR DEVELOPMENT PLAN (TYDP) IN THE RICE INDUSTRY *VIS-A-VIS* FOOD SECURITY IN BAROTSELAND

Introduction

This chapter discussed why despite Barotseland enganging in rice growing as one of the income generating activities in order to improve their livelihood, the province remained food insecure and one of the poorest province up the end of colonial rule in 1964? Therefore, the chapter first discussed the impact of colonial policies on the agricultural economy of Barotseland. It then reviewed the impact of the 1945 TYDP with focus on the agriculture sector in relation to rice growing *vis-à-vis* food security in Barotseland during colonial era. The chapter investigated the role of the government, the Barotse Royal Establishment (BRE) and the response of the local people in the achievements and challenges in the rice industry *vis-à-vis* food security.

The Impact of Colonial Rule on Barotseland Economy, 1890 to 1945

The political instability of the late 1880s within Bulozi, the perceived external threats of the Portuguese to the West and the Ndebele to the south compelled King Litunga Lubosi Lewanika to seek British protection.[1] By 1900, Lewanika was already aware of the advantages of European technology and skills that he perceived through the missionaries such as Francois Coillard and Fredrick Arnot.[2] Lewanika also saw the need for Britain to bring development in his territory. In 1890, Barotseland became a protectorate of the British South African Company (BSAC) as a result of a series of treaties which were signed by King Litunga Lubosi Lewanika and the BSAC. These were: The Ware Concession of 1889, the Lochner Concession of 1890, the Lawley Concession of 1898, and the Lewanika Concession of 1900.[3]

The terms of the Lochner Concession Treaty between Lewanika and the BSAC were that the King would allow the company to prospect minerals in North-Western Rhodesia. In return, the BSAC would bring development to the territory. Specifically, the company was expected establish and maintain institutions and infrastructure such as churches, schools, trading stations, communication and transport services. It was further agreed that the company would not interfere in the internal political affairs of Lewanika and his subjects. In addition, the company agreed to pay a yearly subsidy of £2,000. The company was also to recognise the liability to pay

four percent royalty for mineral rights until a settlement of the new resolutions could be reached with Lewanika.[4]

It did not take long before Lewanika realised that the agreement made between him and the company was a pure mockery. An agreement that the company would not interfere in Lewanika's internal authority over his subjects was violated by the company by removing tribute and slave labour in developmental projects.[5] Furthermore, for seven years, Lewanika's £2,000 annual returns for mineral rights was reduced to £850 per annum. The development promised by the company was not fulfilled.[6] While the royal dynasty was shortsighted, their subjects realised the danger of the treaties between the company and Lewanika.[7]

Barotseland was not conducive for alienation by Europeans due to annual floods that covered the Barotse floods plains during rain seasons and sometimes due to droughts coupled with infertile sandy soils that covered the forest region. The colonial government found it expensive to invest cash in developing the province, thus, it was less profitable for the state to invest resources in developing the territory. For this reason, Barotseland remained undeveloped up to the end of colonial rule in 1964. The interest of the company in the territory was to exploit cheap labour to be utilised in European farms, mining and other industries in South Africa, Southern Rhodesia, and Belgium Congo.[8] Since the success of agriculture was dependent on the presence of sufficient male labour in canal and drainage works to regulate the annual flood levels, male labour migration worked against the agricultural economy of Barotseland.[9]

Taxation was one of the most important measures taken by the company to increase the need for wage labour among Africans. Tax money brought back to the districts by labour migrants was the main source of revenue for both the state administration and the Barotse Royal Establishment (BRE).[10] In a bid to enhance revenue collection, the BSAC imposed hut tax in 1904 in Batoka. The company further extended it to the Central Barotse flood plains. However, up to 1917, the company was not satisfied with both the number of labour migrants and the amount of hut tax collection.[11]

Before the amalgamation of North-Western and North-Eastern Rhodesia in 1911, each area was obliged to pay different native taxes. For instance, apart from the hut tax, in North-Western Rhodesia, there was an additional annual poll tax of 10 shillings (s). This was paid by all adult

males with an additional 10s for another wife after the first one. King Lewanika and his successor Yeta III were to receive 10 percent from an annual poll tax of 10 Shillings in lieu of tribute. £1, 200 was payable to the indunas, while the remainder was to be placed in a development treasury.[12]

Taxes were to be paid in sterling only and not in kind.[11] This was burdensome to the people of Barotseland who were obliged to perform their duties for their Lozi aristocracy and at the same time engage in wage labour to pay taxes to the company. Pertaining to the question of labour and revenue, van Horn stated that, the Lozi were competing for the same male labour with the colonial government. The engagement in wage labour by the people of Barotseland resulted in the destruction of their economy because less male labour engaged in agriculutral work such as canal and drainage works.[13]

The BSAC was not satisfied by the number of Lozi labour migrants despite measures such as taxation that were implemented to reinforce wage labour.[14] In order to destroy the competition of sharing labour and revenue from the local people, the BSAC forced Lewanika to issue a proclamation to abolish slavery in 1906. Since then, Lewanika and his successor, Yeta III depended upon the remaining twelve days tribute labour for canal building and drainage systems. The British Crown government took over from the BSAC in 1924. The former also followed the BSAC policies by further removing the remaining tribute labour without considering an equal substitute in drainage and canal works.[15] The labour condition on the part of the Lozi rulers was made difficult, especially that the territory lost part of Balovale, to the Portuguese in 1905. Balovale was one of the Province's important sources of labour and source of a significant portion of tribute.[16] The money paid to Lewanika and his indunas as a substitute for tribute labour was not enough to pay for hired labour to do public and personal works. Therefore, loss of tribute labour further weakened the economy of Barotseland. [17]

The process of labour migration was further enhanced by institutionalised labour recruitment. For instance, from 1910 to 1932, the Rhodesia Native Labour Bureau (RNLB) recruited labour. In 1935, the Witwatersrand Native Labour Association (WENELA) took over the task of labour recruitment up to 1966 when the post-colonial government ended the exercise.[18] Other recruiting agents operating within Barotseland were the Zambezi Migration Transport Services for the

Labour Department of the Southern Rhodesian government and for Katanga. Mr. Yule and Robert Williams and company also recruited labour.[19]

Due to various policies implemented by the colonial government to enhance wage labour, after 1917, the BSAC was satisfied with both the large number of recruits and the hut tax from Barotseland. This was because even the Lozi royal families decided to engage in wage labour. For instance, between 1916 and 1917, the RNLB alone recruited 1, 500 recruits while between 1924 and 1925, 4, 719 were recruited on six months contracts. A number of Lozi men from various areas opted to go on voluntary wage labour. Consequently, mass male labour migration after 1924 led shortage of male labour in agricultural works such as the canal and drainage works[20]

Chewe Chabatama's analysis on African labour migration in Northern Rhodesia indicated that by August 1938, Barotse province recorded the second highest number of recruits after Northern Province.[21] The shortage of male labour in Lozi canal and drainage works consequently resulted in annual floods. The 1938 annual floods inundated food crops and also destabilised all other economic activities that depended on the annual flood calendar. To this effect, the Pim Report of 1938 observed that Barotseland which once had a viable economy, was in a shocking state because its agricultural sector had drastically dropped.[22]

It is important to clarify that despite policies implemented by the Chartered company, before 1917, a larger number of male labour migrants recruited by the labour recruitment agents in Barotseland was from the subject tribes not from the Lozi royal families.[23] In addition, Max Gluckman explained that when he visited Sefula in Barotse flood plains in 1940, some Lozi households were still food secure. However, levels of hunger and famine were not uniform in all areas. The intensity was dependant on how a particular area was affected by annual floods due to number of male who left for wage labour. Hence, in 1942 when Max Gluckman returned to the plains, he found that the local people of Sefula plains were faced with hunger and famine and that by 1947, the situation became severe. Apart from the annual flood consequences, he further attributed the problem to the price of food that had trebled. The high cost of living was caused by high demand for food following the fall in levels of crop production and the high demands of the Second World War. Labour migration did not immediately thwart the Lozi economy in all areas at the same time. The impact of food insecurity on a larger population was acutely felt after

1940. This was due to the annual flood consequences that coincided with the Second World War economic crises.[24]

Trade and barter among Barotseland people and through external trade were some of the income generating activities engaged by the local people to improve food security long before colonial rule. However, during colonial rule, Barotseland experienced growth in the market for food and labour which could be sold for cash or exchanged for goods such as cloth and beads.[25] For instance, by 1907, there were 57 Europeans around Mongu. By 1910, the Lozi aristocracy and their subjects had responded to the new markets by growing and selling food items.[28] Growth of market was facilitated by the increase in the number of settlers at the margin of the plains. The settlers included traders, missionaries and colonial administrators coupled with high demands for food and material items during and after the Second World War.[29]

However, the Lozi aristocracy benefited from new markets more than the subjects. The fact that the aristocracy owned many gardens and more cattle than their subjects enabled them to sell various agricultural produce for cash. The subjects also adapted to the growing markets by undertaking works for the Lozi aristocracy such as being carriers, paddlers, guides, fire wood collectors, cattle herders, builders, field workers and shopkeepers for the new comers.[30] Francois Coillard, a missionary who settled at Lealui and Sefula in Mongu District employed hundreds of women and children and 250 men each month that he paid 10 shilings to 13 shilings, food, calico and beads.[31]

Although the increase of cash as a medium of exchange did not at once radically alter the economy, it however, worried Lewanika who foresaw its dangers for corrupting the local people's social obligations at a later stage. The Lozi King compelled his subjects at Sioma Falls (Nyengo Falls) to carry the dugouts of travellers as a hospitable service. Due to the need for cash to pay taxes, buy food and other material items, the political and economic security of Lewanika and his indunas were threatened. When Coillard employed the local people for similar jobs and decided to pay them the King advised him to stop because the subjects would make it a precedent for the rest of the travellers.[32] Realising the dangers of a capitalist economy on the livelihood of the Lozi royal family and the rest of Barotseland, Gluckman lamented that:

> The coming of the external trade and of the white migrants re-valued not only

> these goods, but also labour. In a system in which services were exchanged largely in kinship, ruler-subject and the self-providing servant relationships, came the relationship of short time for money, with no other obligations and responsibilities.[33]

The people needed to find ways of increasing their income in order to pay hired labour for various works, to purchase the food stuffs and some material items they needed to sustain themselves.

Cattle Trade and Food Security

In respect to the subject of the agricultural sector and food security in Barotseland, cattle rearing were one of the most important economic activity that enhanced food security among the local households.[34] In crop farming, cattle was important for its dung that was used to fertilise gardens, provided oxen for ploughing and for transport purposes. Cattle also provided milk and beef to the local people. It was also exchanged for cash, cloth and foodstuffs such as cassava meal and honey from areas such as Balovale. Thus, it was a bank account for keeping cash that could be used to purchase needed food stuffs and other material things.[35]

Local people responded to the new available market for cattle by ranchers in Southern Rhodesia who lost their cattle due to the rinderpest epidemic of 1893-1895. Barotseland experienced an increase in the number of cattle due to the fact that it survived the epidemic. In 1896 sales of cattle, skins and ivory became important sources for generating cash for paying tax and to improve the livelihood of the local people.[36] The price for cattle was £1 to £8 for oxen, £2.10 to £4.10 for cows and £2 to £3 for heifers. The number of cattle sold in the Province between 1909 and 1912 reached 23, 398. In 1938, 2, 602 cattle were sold to Zambezi Saw Mills and 1, 385, 285 were sold to Sesheke traders. In the 1950s, cattle buying by the Cold Storage in Mongu District also increased the market for cattle for the indigenous pastoral farmers.[37]

However, cattle rearing faced some challenges that consequently lowered the living standards of the local people. This was because a number of cattle in Barotseland suffered from Pleura Pneumonia from Angola brought by oxen teams used by the Portuguese boundary commission. The cattle also suffered from Foot and Mouth disease from Southern Rhodesia in 1930. These diseases led to a loss of a number of cattle in the territory. Therefore, dependency on cattle for

agricultural purposes and for food security by the Lozi and their subjects decreased after 1915 following the ban on trade in cattle and cattle hide sales up to1947. Thus, dependency on cattle for survival reduced.[38]

The situation on cattle dependency for survival was further worsened by the fact that there were fewer cattle herders to tend the cattle because the number of male labour migrants had increased. Cattle spent many months in the forest region due to prolonged flooding seasons experienced by the Barotse Central flood plains dwellers. The few subjects remaining were not willing to tend the cattle in the forest land for many months. This was so because the forest region had insufficient and poor grazing sources. The longer the cattle were exposed to poor grazing and unhealthy conditions, the poor the quality of cattle. Thus, cattle could only be sold at a low price while a number of them died. Above all, the long distances to markets were a major constraint to the cattle trade for few cattle that survived the cattle diseases.[39]

Consequently, the subjects were adversely affected by the dwindling cattle trade and by the death of a number of cattle.[40] The subjects did not only lose their jobs as shepherds.Like their Lozi royal masters, they also lost all the benefits that went together with cattle raring. The critical economic hardships and the state of food insecurity in Barotseland led to the mass exodus by the indigenous people for wage labour in Southern Rhodesia, South Africa and Belgium Congo. The number of labour migrants increased from 38 percent in 1938 to 50 percent of the male population by 1948. By losing such a huge number of male labour in canal and drainage works, annual floods continued to be constraints to food security among Barotseland communities.[41]

Mambela Mulobela affirmed that the province experienced extreme pressures from both droughts and the high annual floods which reccurred every eighth year of each decade from 1900 to 1990.[42] Furthermore, the colonial reports of 1940, 1941, 1945, 1947, 1948 and 1949 gave evidence of the reoccurrences of high levels of annual floods in the Barotse floods plains.[43] Annual floods inundated staple food crops causing famine and hunger among local households.

Review of the Implementation of the 1945 TYDP *in* Rice Growing *Vis-à-vis* Food Security

The post Second World War era in Northern Rhodesia was characterised by a unique feature of working out agricultural policies and development plans that included the African welfare. The Second World War economic crisis forced the British government to review agriculture policies

in its colonies. Britain, which was highly indebted due to the Second Warld War expenditure decided to deliberately encourage cash crop production by the African Peasant Farmers (APF) in her colonies. By the APF enginging in cash crop production, Britain would not only revamp her economy but her territories would also no longer economically depend upon the restricted imported commoditities from Western countries. The intentions of the colonial government were enshrined in the TYDP finalised in 1945 and approved in 1947.[44] The operational framework of the plan of the agriculture sector worked out by dividing the territory into 11 ecological areas and each homogenously considered for its soil type and African habitants. These were called development areas and in each of them, a suitable administrative district was selected to be the District Development Centre (DDC).[45]

Barotseland, which at the time was hit by critical food shortages due to annual floods, was considered for the implementation of African Peasant Farming Schemes (APFS). Mongu District was designated as the DDC and Namushakende located within Mongu was earmarked as the development centre catering for the entire province. In 1948, the colonial government launched cash generating oriented pilot agricultural projects. These were such as rice, maize and wheat growing and also cattle ranching schemes in Namushakende. Rice growing progressed in the annually flooded wetlands of the Zambezi flood plains and its tributaries. Similar projects were also launched in the valleys and plains of the forest regions such as, Luandui plains and valleys in Mongu and Lui in Senanga Districts.[46]

The main objective of the colonial state in launching the rice growing schemes in Barotseland was to make it a profit making enterprise that would help the British government recover economically and also to hlp the colonies to be ecomically selfsufficient. It was hoped that by earning income from rice projects, the people of Barotseland would be able to purchase the required staple foodstuffs, supplement food and other items. The state further planned to increase food security in the latter by encouraging the use of *matema* gardens for cultivating staple food crops such as Kaffir corn, bulrush millet, sorghum and cassava.[47]

Successes in rice growing as a cash crop were to be achieved through various strategies. The state decided to conduct a survey on the feasibility of the canal and drainage works. They also wanted to make trials on various soil types for the different rice varieties that would be grown in each area. The government also encouraged African peasant farming groups to work on the basis

of permanent agriculture. The state encouraged African peasant farmers to increase their production by using simple implements such as ox-ploughs and hoes. It further intended to provide loans for farming implements and inputs to the local peasant farmers and also to subsidise prices for the locally produced rice.[48]

The colonial government also planned to increase agriculture extension officer's services by training and monitoring local farmers in rice growing techniques. In order to substitute shortage of male labour and increase production and productivity in crop farming, the state planned the use of machineries. These were such as dredgers to be used in canal and drainage works while tractors and ox-ploughs were to be used in cultivating fields. To improve the quality of the local rice varieties, processing machineries were to be used. These were such as the threshing mill, the rice sampling cone, hand trieur, rice classifier, grantex roller sheller, and the grinding mills. To access internal and external markets for their agricultural products, construction and maintenance of roads and water ways were considered in the TYDP.[49]

The first step taken by the colonial government to achieve the goals in rice production was to embark on the construction and clearing of canal and drainage systems. The work was only possible with the supervision of the Barotse Royal Establishment (BRE) and the positive response of the local people.[50] To substitute the slave and tribute labour, the colonial government suggested that the money from the Barotseland Native Treasury (BNT) be used for payment of hired labour. In 1947, the colonial state started canal and drainage works in the flood plains and valleys in three districts: Mongu, Kalabo and Senanga. An amount of £28, 000 was allocated for clearing 36.8km of the main canal in Kataba valley in Namushakende area. Sihole canal was also cleared and deepened at a cost of £1,000.[51]

During the excessive annual floods of 1958, J. R. Abolt who was a water engineer recommended that durable dredgers such as the one used in Lake Bangweulu be used in canal and drainage works in Barotseland.[52] The matter was considered by the Namushakende Agriculture Development Centre Team (NADC). In the same year, a dredger was procured at a cost of £ 2, 600. The colonial government spent £20, 000 on the construction and clearing of canals in some parts of the plains. Two thousand five hundrend local men were employed to re-open 93 kilometres of canals and to clear an additional 50 kilometres of canal where each man engaged in the works was paid an average amount of £8 at the completion of the work. The 1958

achievements in the constructing and clearing of canals in some parts of Barotseland were partly attributed to the use of a dredger.[53]

In order to earn some income, some local people sold their labour in various rice projects such as canal and drainage works.[54] However, Indopu Njamba explained that the 1950s rice projects in Barotseland did not involve a larger population. He noted that only a few who were employed in rice projects, canal works and also those who engaged in rice growing benefited from the enterprise. He added that, from the cash obtained from the rice sales, wages and profits, the local people catered for their social and economic needs. They purchased staple food stuffs, while others used the cash to buy blankets, clothes, pay for hired labour for agriculture works and even building houses. He went on to observe that since only a small population engaged in rice growing, the role of rice in improving the livelihood of Barotseland communities was very limited. Hence, despite rice growing being one of the cash crops grown in Barotseland, famine and hunger hit the province because only a small population in Barotseland engaged in the exercise.[55]

Mulonda Saeli, a village head man in the Central Barotse flood plains narrated that, during the colonial era rice was exchanged for foodstuffs such as fish, milk, meat and cattle. He further narrated that two 90kg bags of rice were exchanged for one bull or one cow. Saeli also explained that bartering of rice for cattle and the use of rice cash proceeds for purchasing cattle promoted the use of ox-plough in cultivating fields. He further argued that some local people consumed rice as a food supplement while a few adopted it as a staple food during critical hunger times.[56]

The colonial government was aware that the key to expand the acreages for rice growing as well as all other crops in the Barotse flood plains was largely dependent on how best the annual floods were controlled.[57] However, the state only managed to do subtataial work in constructing and clearing of canals and the drainage systems in 1958. During this period, the problem of annual floods had even affected a larger portion of Barotse flood plains. Hence, continued to hinder the further expansion of the acreages for rice growing up to the end of colonial rule in 1964. The problem was attributed to the fact that some of the targeted tasks in canal and drainage works were not implemented due to various challenges. For instance, Kataba valley in Namushakande an area where the first pilot rice growing project was started, only 25.6km of the

main canal was cleared out of the total of 36.8km of the targeted work.[58] One of the challenges was that the dredger had broken down because it was of poor quality. The dredger was not strong enough to be used for deepening, widening and clearing heap sands and dense vegetation in the canals.[59]

In addition, the ratio of sharing the resources between the Northern Rhodesia Government (NRG.) and the BRE was biased. The Native Treasury was allocated less funds despite the fact that the BRE had a huge responsibility to construct and clear the canal and drainage systems. For instance, in 1964 a meeting was convened at the Namushekande Agriculture Development Centre (NADC) Team to allocate funds for capital and recurrent expenditure for use in canal and drainage projects.[60] The NRG was allocated a sum of £56, 250 while the BRE was allocated £16, 000 for recurrent expenditure on the agricultural development projects. In addition, the NRG was given £14, 000 while the native government was offered only £3, 000 to accomplish the canal and drainage projects. Due to insufficient resources provided to the Barotse Native Treasury (BNT) by the colonial state, some canal and drainage works failed to be cleared. Thus, agricultural projects such as rice growing in Barotseland did not bring food self-sufficiency or reduce poverty among many Barotseland households. In addition, the feasibility survey done by the Department of Water Affairs and by the development team in fund allocation towards rice projects was not compatible with the actual amount of work.[61] It was in this view that van Horn argued that, the efforts of the colonial government were of little effect. He further suggested that:

> Had they considered the social and economic background to the difficulties confronting Lozi agriculture, the administrators would have realised that clearing the silted canals could not in itself alter issues which lay behind decline in production. Their blindness to the plights of the Lozi labourer was revealed in their unrealistic endorsement of the return to tribute labour.[62]

From the time when slave and tribute labour was ended in 1906 and 1925 respectively, the work of maintaining the feeder drainages was surrendered to the individual land owners who were supervised by the BRE. This was a challenge on the part of the BRE who had a shortage of male

labour due to mass wage labour migration. This resulted in the annual floods affecting even the areas already worked upon by a few present land owners.[63]

To solve the problem of the annual floods caused by absentee landlords, the BRE warned that, those who did not work on their feeder drainages for more than three consecutive years would lose their pieces of land to other interested local people. For instance, In 1960, *Mulena Mukwae* (the princess) re-allocated 20 acreages of *Sishanjo* piece of land that belonged to *Ishee* Kwandu (husband of a princess), which was given to a Mbunda immigrant, named Lilumbula Lilumbu. Similarly, six acreages of a *sishanjo* piece of land that belonged to another absent Lozi land owner, which was not used for some years was also given to another Mbunda man called Litumbu Kashweka. The loss of arable fertile plain land by the Lozi to the new land users brought fear in the rest of the land owners and led to a positive response by some local people. For instance in *Mulena Mukwae's* area, 3, 000 acreages of *lishanjo* gardens and also 1, 000 acreages of wet *litongo* gardens were brought to use not only for production of rice but also for other food crops.[64] Although the enforcement of land tenure policy led to an increase in acreage in rice production in some areas, some absentee landlords in certain areas counteracted the measure. They did not allow anyone to cultivate their gardens in fear of losing them. Consequently, annual floods negatively affected the Barotse flood plains where rice and other food crops were grown.[65] Thus, progress in rice production as an enterprise aimed at improving the livelihood of Barotseland communities was slow.

The feasibility survey done by the colonial state on the rice projects and on how to handle annual floods in Barotseland was not accurate. The 1962, Mongu Tour Report stated that the Ministry of Lands and Natural Resources and the Water Affairs Department expressed ignorance on what was to be done to combat the annual floods. Barotseland did not have adequate past hydrological records on how to control annual floods through canal and drainage works. In addition, the state failed to allocate enough funds towards canal and drainage works on the grounds that the works were too costly.[66] Therefore, high levels of annual floods in the Barotse flood plains continued to hinder the expansion of rice growing as a famine and poverty mitigation strategy in Barotseland.

Up to the end of colonial rule in 1964, Barotse central flood plains continued to be negatively affected by annual foods in many areas. The water table in the plains and valleys went up and consequently, some of the fertile lowlands of the forest region were also affected by the annual floods. This was due to the fact that the main water courses in the Barotse flood plains were interconnected with some streams and tributaries in the forest region. These forest streams emptied their water down into the main water bodies of the Barotse flood plains. Thus, the annual floods that destabilised the agricultural economy of the Barotse flood plains eventually affected food crop production of some forest region. Consequently, expansion of acreage covered under rice production and other food crops in Barotseland was hindered by annual floods. Without the use of suitable modern techniques in annual flood control measures, no substantial increase in rice production could be attained.[67] Hence, despite some local people engaging in rice growing as a cash and food crop, food self-sufficiency and poverty reduction was not attained as projected in the TYDP.

In its quest to alleviate hunger and famine among some Barotseland households in the 1960s, the colonial state brought staple foodstuffs for sale from surplus crop producing areas. These were such as Mangango (current Kaoma District) and from Balovale. However, the challenge was that, the food was expensive and some local people failed to purchase required food. In addition, no substantial assistance was made or serious campaign made by the state to expand the use of the forest *matema* for indigenous food production.[68]

In Barotseland, land preparation preceded the draining of the annual flood water through the use of sufficient male labour in canal and drainage works. The first step was to clear the grass followed by cultivating and levelling of land. The exercise was done between October and early November. Common tools used were hoes and axes. In addition, ox-ploughs were accessed by a few households who also shared them with relatives and friends. Some local peasant farmers who did not have farm implements exchanged them for their labour. The use of ox-ploughs by the local people led to a notable increase in acreage of land covered under rice growing.[69]
In order to increase the use of oxen in ploughing fields and also to increase income among the Barotseland communities under rice production, the colonial state encouraged cattle keeping. The colonial state launched pilot cattle ranching projects in Mongu, Senanga and in Kalabo

District. For instance, Lumbo area in Mongu was one of the areas selected for mixed farming where rice and maize were grown and also cattle ranching were practised in the same area. In 1959 the area had 979 bulls and oxen while cows and heifers numbered 2, 646 bringing the total to 3, 625. In 1960, the bulls and oxen increased to 1, 085 while cows and heifers went up to 3, 043. The total number of cattle in Lumbo went up to 4, 128.[70]

The Agriculture and Veterinary officers sensitised the local people on the importance of rearing cattle and rice growing as viable income generating venture. For instance, in 1948, loans were made available for some farmers to purchase cattle, ploughs, seeds and fertiliser. Agricultural extension officers also campaigned over the importance of rice growing as a cash and food crop. Consequently, some areas such as Luyi in Senanga District, Lumbu and Kataba in Namushakende and in sefula in Mongu District increased their rice production levels. In years of maize deficit as staple food crop, some households in some of these rice growing areas adoption rice as a tempral realief staple food crop measure.[71]

Challenges

According to the 1964 Mongu Agricultural Tour Report, agricultural loans provided from the Native Treasury were not consistent and also not sufficient to accomplish the targeted tasks. Thus, only few local peasant farmers benefited from the pilot projects of the 1948. In addition, local cattle owners complained that it was not possible for them to sale their cattle and rice at the time they needed cash. This was because between December and February, the level of annual floods in the Zambezi River and its tributaries were high. Thus, it was difficult for cattle and local people to cross the flood plains and access outside markets.[72] In addition, the local people were not happy with the low prices for cattle sales offered by the Cold Storage buyers in Mongu District. The fact that the local peasant farmers could not sell their agricural products at harvest time, it became difficult for them to purchase the needed food stuffs. Thus, failure to attain the expected food self-sufficiency and poverty reduction by some Barotseland communities.[73]

The 1945 TYDP indicated the importance of supplying the local farmers with appropriate and quality subsidized rice seed varieties and other farm inputs and implements. More than eight rice seed varieties were distributed to local peasant farmers in 1948. The most common rice variety grown in the Barotseland was Angola crystal, Tanganyika and Malawi faya.[74] Distribution of rice

seeds at Namushakende Development Centre in Mongu by the agriculture extension officers covered over 1, 500 cultivators.[75]

Challenges

Although from 1948 – 1964, the colonial state distributed rice seeds in Barotseland, the majorty of the rural local rice peasant farmers were not reached. This was due to insufficient agriculture extension workers, insufficient resources, poor road and water ways network coupled with lack of transport to reach some farmers in remote places. In addition, some local farmers developed apathy against rice growing and the idea of receiving rice seeds from the government. For instance, in Kalabo District, some local farmers rejected the rice seeds because they did not understand the mode of the payments of rice seed loans. They feared that if they accepted the loans, the colonial government would take away all their rice produce after harvest.[76] This wrong perception was clarified by the agriculture extension officers. The officers explained to the local farmers that payments would be made either in cash or in kind after they harvested their rice. Some local farmers also did not accept the use of chemical fertiliser on account that it would permanently destroy the fertility of their land. Thus the refusal to use certified rice seeds and chemical fertiliser by the local farmers resulted in low rice yields.[77]

Similarly, apathy was observed in 1951 among the local peasant farmers of Lui valley in Senanga district where the colonial government decided to start a pilot rice seed growing project. Local peasant farmers refused to attend a demonstration seminar for the project.[78] By not complying to such state rice growing projects, less was done to improve the quality of local rice varieties. Consequently, less profit or no profit was gained from locally produced rice varieties.[79]

Other local peasant farmers did not attend seminars because there was a breakdown in communication between the BRE and the colonial government administrators on the arrangement of the date to conduct the rice growing techniques.[80] The problem was attributed to the red tape involved in Lozi communication customs. In addition, there was inadequate number of agriculture extension workers to sensitise the local peasant farmers on rice growing techniques and projects. Therefore, negative response by some local people was another challenge in achieving the intended goals through rice growing as a business enterprise.[81]

According to the strategic plans enshrined in the 1945 TYDP, the colonial state also encouraged early planting and the use of early maturing rice seed varieties in order to avoid annual flood consequences. Agriculture extension officers trained the local peasant farmers in some rice growing areas on the rice growing techniques such as early crop planting of the early maturing seed varieties. Some local peasant farmers adapted to the technique of early planting.[82] In addition, the local people were also encouraged to practice rice seedling transplanting method in place of seed broadcasting. However, the majority continued using broadcasting method because transplanting method was considered more labour intensive compared to the broadcasting method. In addition, the work of rice planting was done at the same time with all other crop farming works. The majority of the local peasant farmers also continued to use recycled rice seeds. These traditional methods practised by the local people led to seed wasting, low productivity and poor quality rice yields. Hence, the rice enterprise in Barotseland had less impact on improving the livelihood of the local people.[83]

Pest and disease control were vital in protecting the harvested rice from damage. At sealing and vegetative stages, the farmers were challenged by pests such as beetles, grasshoppers, cut worms, rats and birds at grain filling or reproductive stage. In Barotseland, rice pests and diseases were few. The common disease that affected rice in Barotseland was blast *Cpyricularia Ory Zae* and occasionally occurred when dry spells were experienced. Birds were also notorious in rice fields. However, the problem of birds was overcome by family labour that scared them by making some noise. Mostly, women and children spent much time in the rice fields to scare off the birds. For the rest of the pests and diseases, no remedies were provided to reduce damage. Lack of remedy for pest control contributed to low productivity and poor rice qualities.[84] Hence, pest and diseases that attacked rice hindered the attainainment of sustainable food security and poverty reduction through rice enterprise among Barotseland communities.

Rice was harvested when it reached maturity stage between April and June. For rice harvesting, local peasant farmers used simple tools such as sickles and knives. The optimum moisture content of rice grain recommended at harvest time is 21 to 24 percent. The local peasant farmers lacked improved technology on handling rice at harvesting time and drying period. Therefore, there was grain quality deterioration leading to rice breaking leading to low rice prices on the major markets in Lusaka and Livingstone. The result was that most rice peasant growers decided

to sale their rice produce to the government through the district commissioners and to companies such as the Susman. Susman Company dictated lower prices for the local rice varieties in order to cover for the high transport cost.[85] Consequently, the many local rice growers and traders did not find rice enterprise profitable enough to enable them carter for their social and economic needs. Hence, rice growing in Barotseland did not eradicate famine, hunger and poverty in many households.

Much of the local rice was processed using traditional methods such as the use of sticks for threshing. Rice polishing was done by pounding it in a mortar using a wooded pestle. Thereafter, dishes or a traditional vessel called *luselo* were used to remove the outer layer of rice. This traditional method of cleaning rice led to breaking of the produce. Despite the colonial government's plan to improve the quality of rice produced in Barotseland, little was done to implemplement. Thus, the efforts of rice growing by the local people were frustrated by lack of value addition to the locally produced rice varieties.[86] Indopu Njamba explained that many local rice peasant farmers stored their rice in a clay barn traditionally called *situli.* He further narrated that packing bags were not available and that the colonial government did not establish rice storage shades in some rice growing areas. He also informed that sack bags for packing rice were not easily accessed and that packaging of rice was left in the hands of the buyers. Therefore, lack of rice storage facilities led to post harvest loss while poor packing and grading facilities were some of the determinant factor for the low price for the locally produced rice varieties in Barotseland.[87]

Labour procurement methods by many local rice peasant farmers were by the use of family labour. Where family labour was not sufficient, farm owners procured labour. Cash as well as payment in kind were used to pay hired labour. Beer, staple foods such as maize, sorghum, cassava or millet, would be paid in exchange for labour. Due to the male labour shortage, much of the work was mostly done by women and children.[88] Thus, shortage of labour and the use of manual labour in rice growing, was another challenge in achieving expected goals in rice growing according to the aims of the TYDP.

To improve the agricultural sector in Barotseland, the colonial state included the plan to improve infrastructure such as road network and water ways in the TYDP. The projects would help to connect the rice growing areas and agricultural products to markets.[89] However, up to the end of

colonial rule in 1964; no substantial works were done in the construction or maintenance of road networks and water ways in Barotseland. For instance, a gravel road that was aimed at connecting Mongu to Lusaka in 1935 only reached Kaoma District. This road was abandoned in less than ten years of operation in 1944.[90] Up to the end of colonial rule in 1964, the road just reached Mumbwa District. The colonial government explained that it was expensive to construct and maintain roads and water routes in the Barotseland. The problem was attiributed to the sandy terrain and the prevalence of annual floods in the province. Due to poor roads and waterway networks, the journey from Mongu to Lusaka took travellers three days.[91]

Similarly, the journey from Mongu to Livingstone by road took travellers ten to twenty days because of not having a well organised appropriate mode of transport for agricultural products. The available transport systems were meant to ferry the labour migrants to and from specific stations. Transport for labour migrants had a specific timetable which would take weeks or months before moving from one station to another. Such a timetable did not favour the rice traders.[92] Travellers with merchandise had to wait for some lorries in Mongu to take them to Senanga District. From Senanga, the lorries crossed over the Zambezi River through Kalongola pontoon where the road connected to Katimamulilo in Sesheke District. From here the vehicles crossed the Zambezi River by using a pontoon to proceed to Seheke District. At Katimamulilo, traders would again wait for some weeks before finding another lorry to take them to Sesheke and then to Livingstone. Therefore, travellers on the journey from Mongu to Livingstone incurred high transport costs. Due to marketing and transportation challenges, rice varieties from Barotseland were sold at a higher price in order to make profit. Thus, the rice enterprise in Barotseland proved unprofitable, hence, did not improve the livelihood of many local households.[93] Due to the high transport costs, local peasant farmers opted to sell their rice produce to local buyers. Messrs F. Susman Limited Company was one of the prominent buyers of rice produced in the Barotseland. District Commissioners and other wage earners also bought rice from the local people.[94]

Another objective of the TYDP in relation to rice growing was to improve the quality of the rice produced in Barotseland. The plan was aimed at making rice from Barotseland compete favourably with the rice from other places. These were: Nyasaland, Tanganyika, Thailand, and

India. The 1948 to 1951 Barotseland Agriculture Reports indicated that Susman Limited Company complained about the poor rice quality from Barotseland. The company stated that it would only buy rice from the province if the selling price was raised to £5½ per bag or if the local order price reduced.[95] Such measures would help Susman to sell rice on the markert without suffering competition against imported rice varieties which were relayively cheaper and with a better quality. The colonial government's promise to subsidise prices for the locally produced crops such as rice was not fulfilled as planned in the TYDP.[96] Thus, some local people abandoned rice growing while some held on to their rice produce and waited for a better opportunity to sell it to some civil sevants or briefcase traders. Despite multiple challenges faced in the rice industry, some rice peasant farmers in Barotseland continued engaging in rice growing. The records from 1950 to 1960 indicated an upward increase in rice production.[97] See table 1 below.

Table 1: Estimated Total Production and Sales of Paddy Rice in Barotseland, 1950-1963

NO	YEAR	BAGS OF PADDY BOUGHT (160 pound)	PRICE PER Ib/Pound	ESTIMATED TOTAL PRODUCTION IN BAGS (160 pounds=73kgs)
1	1950	546	£2	566
2	1951	1,085	£2	1,407
3	1952	1,743	£2	2,566
4	1953	727	£1 ½	N/A
5	1954	235	£2 .4	N/A
6	1955	795	£2 .4	1,851
7	1956	540	£2 .4	3,376
8	1957	199	£2 .4	4,265
9	1958	665	£2 .4	2,926
10	1959	434	£2 .4	3,337
11	1960	700	£2 .4	4,272
12	1961	920	£2 .4	N/A
13	1962	300	£2 .4	N/A
14	1963	398	£2 .4	N/A

Source: G.R.Z., H.A.M. Maclean, *An Agricultural Stocking of Barotseland* (Lusaka: Government Printer, 1965), p. 48, Appendix xvi.

Table 1 indicated steady increase in rice production levels in Barotseland but a sharp decline in the number of bags of paddy rice sold especially in the years 1962 and 1963. The decline in rice sales by local farmers explains the reaction by the local rice peasant farmers against the stagnant low rice prices from 1953 to 1963. Low sales by the local people resulted in low or totally no profits. Due to low sales, the local peasant farmers were not able to purchase the needed foodstuffs and other material items. van Horn informed that at independence in 1964, the level of famine and poverty in Barotseland were high because of annual floods that inundated food crops and also due to high levels of poverty among the local people. In trying to combat the famine and hunger problem, in 1964, the colonial government imported 80,000 bags of maize from Baluvale and other food secure areas of Barotseland such as Mankoya (now Kaoma District).[99]

Conclusion

The chapter discussed why despite rice growing being one of the cash and food crops in Barotseland, the province remained poor and food insecure between 1945 and 1964. This encompasses an explanation on how colonial policies coupled with the Second World War economic crisis negatively impacted on the economy of Barotseland. The chapter also reviewed the implementation of the 1945 TYDP in the agriculture sector *vis-à-vis* rice growing in Barotseland. The chapter established that at the eve of colonial rule in Barotseland, the BRE utilised tribute and slave labour in canal and drainage works hence, regulated the annual floods. The annual floods controlled the calendar for all economic activities in Barotseland. These were crop farming, cattle keeping, fishing, trade, hunting and fruit and root gathering. The colonial government introduced labour migration policies. These were such as institutionalised wage labour recruitment, the abolition of slave labour introduced by the British South African Company in 1906 and of twelve days tribute labour by the Crown government in 1925. The policies were deliberately implemented to enhance cheap labour for the white owned mines and farms in South Africa, Southern Rhodesia and Belgium Congo. Hence, the province was deprived of the male labour needed in the canal and drainage works. Consequently, annual floods in the plains and valleys of Barotseland inundated the staple food crops. Other major constraints to food security were erratic rains and infertile sandy soils in the forest region.

The chapter indicated that in order to help Britain recover from the Second World War economic crisis, the colonial government encouraged Africans in her territories to engage in cash crop. The

type of crops to be cultivated was selected according to the ecological conditions of each area. The agricultural projects were enshrined in the 1945 Ten Year Development Plan. It was hoped that by enganging in cash crop production, the local people would improve their livelihood. The colonial government recommended that rice be grown as one of the cash crops in the annually flooded Barotseland plains and valleys. This was because rice grew well in such ecological conditions but staple food crops such as maize, cassava, millet and sorghum could not. In 1948, the colonial state launched agricultural pilot projects such as cattle ranching, rice and wheat growing schemes at Namushekande Development Centre in Mongu District. Some local peasant farmers in some parts of the Barotse flood plains and also in some wetlands of the forest region responded positively to rice growing as a cash crop and as a food supplement. Others were rice traders, millers, machinery operators while some sold their labour for cash to rice growers. The local people hoped that from the rice proceeds, they would purchase the needed staple food and also carter for other social and economic needs. With the influence of the BRE the colonial government provided some technical, material and financial support to the local rice peasant farmers. Therefore, Barotseland recorded a steady increase in the levels of rice production between 1950 and 1960. Some local people engaged in the rice business ventures utilised their rice cash proceeds to purchase the needed food staffs, build houses and make payments for hired labour.

However, the chapter further established that up to the end of colonial rule in 1964, many households in Barotseland experienced critical food shortages. The failure to attain the expected food security and poverty reduction through rice growing as projected in the 1945 TYDP was attributed to various challenges that faced the rice industry. One of the challenges pointed out in the chapter was that the colonial state did not have political will to substitute the lost labour by paying labour or purchase appropriate machinery for canal works and also for rice growing. Consequently, annual floods slowed down the expansion of the acreage for rice growing. The state left the task of organising and paying labour in the hands of the BRE. Ths was despite the BRE did not have sufficient funds to carter for the projects. Thus, canal and drainage works, road were not accomplished. Additionally, the use of traditional methods and techniques in rice growing and post-harvesting handling processes led to poor yields and crop wastage. Negative response by some local people towards rice projects, complex Lozi land tenure policies and

fragile rice markets also hindered the growth of the rice industry. In addition, insufficient agriculture extension workers and the loss of cattle due to diseases such as Pleura Pneumonia and foot and mouth further slowed down the growth of the rice industry. Thus, the expected goals were not achieved as according to the 1945 TYDP.

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CHAPTER FOUR

REVIEW OF THE NATIONAL DEVELOPMENT PLANS IN THE RICE INDUSTRY *VIS-À-VIS* FOOD SECURITY, 1964-1990

Introduction

Agriculture was the major economic activity of larger population of Barotseland even after after Zambia attained its independence in 1964. However, due to ecological and terrain factors, the province continued to be food insecure. The Zambian government under United National Indepence Party (UNIP) considered rice growing as a business with potential to increase the income of the rural population. Thus, be able to carter for their needed staple food.[1] Rice was grown in many wetlands of Zambia. Among the chief producers of rice were Northern, Barotseland, Luapula and Eastern Province. By 1990, Barotseland was second to Northern Province.[2*] However, the analysis on poverty levels in Zambia by the *Civil Society for Poverty Reduction* indicated that by the end of 1990, the above mentioned provinces were the poorest. Western and Northern Provinces ranked second poorest with 84 percent poverty levels. [2] Thus, this chapter focused on reviewing the implementation of National Development Plans (NDPs) in the agricultural sector in relation to the rice industry and food security from the period 1964 and 1990. The chapter also investigated rice as a staple food among the people of Barotseland.

A report on rice development strategy in Zambia by the Ministry of Agriculture explained that rice was only included on the national food balance sheet as an important staple food crop after maize, cassava and wheat in Zambia in 1988.[3] Mboma Kafuba stated that between 1975 and 1984, Kalabo District in Barotseland contributed 34.7 percent of the total national rice production. However, Kafuba explained that, the local peasant farmers in Kalabo District increased their levels of rice production not because it was a popular staple food crop but because it was the most profitable cash generating activity.[4] Since, the commodity was not a popular staple food for the majority of the local households, its value to improve the livelihood of the people depended on how profitable the commodity was.

Musiyela Kalaluka, a village headman and peasant farmer in Senanga District attested to the fact that, the push factor for increased rice production by the indigenous peasant farmers in Barotseland was the continued annual floods that inundated their staple food crops. He added that many peasant farmers tried to divide their wetland gardens between rice and maize

production. This was despite the fact that maize did not grow well in the flood plains. Kalaluka further stated that this was done to bridge the gap created by the deficit of maize their preferable staple food crop. Meanwhile rice growing was as an income generating venture through which poverty could be reduced at household level.[5]

Analysing the Zambian government agricultural policy, Kajoba stated that the maize syndrome policy was a carryover from the colonial government. State policies were designed towards supporting maize growing at the expense of indigenous staple food such as cassava, millet and sorghum. He added that such policies influenced the food culture which was biased towards the adoption of maize as a staple food crop and a cash crop in all parts of Zambia. He further argued that despite increased levels of maize production in some parts of Zambia such as the Northern Province, many households remained food insecure in the period between 1964 and 1990. This was because they sold much of their maize produce in order to carter for their material needs. Kajoba further stated that such agricultural policies increased food insecurity levels and poverty especially in Barotseland where the ecological and weather conditions were not favourable to maize growing.[6]

State agricultural policies that promoted maize growing as staple food crop and also as a cash crop were a drawback in promoting rice growing as cash or food crop in Barotseland. The 1983/1984 Annual Report on Barotseland crop production indicated that, in Kaoma District, 63 per cent of the land was utilised for hybrid maize production and only the remaining 37 per cent was utilised for growing all other indigenous crops as well as rice.[7] Maibiba Lyaengwa, a rice peasant farmer in Sefula in Mongu District, explained the importance of rice as a cash crop and not a staple food in Barotseland. She further stated that after colonial rule, *Supa, Sindano, Sumbawanga, Kimbelo, Blue Bonnet, Burma* and *Zawa* rice varieties were adopted by Barotseland peasant rice farmers.[8] Lyaengwa added that among the rice varieties, local farmers preferred growing Supa rice than the rest. This was because Supa had a sweet aroma and good grain quality that gave it comparative advantage of fetching a high price on the market. She also explained that local peasant farmers grew Supa in large quantities in order to raise cash to carter for social and economic needs. She further stated that the majority of Barotseland households only consumed rice as a food supplement and also as staple food during critical food insecurity

conditions.[9] Hence, rice only provided temporal relief against famine and hunger for few local households.

Mubita Mulala, another rice peasant farmer in Mongu District, attested that rice cash proceeds catered for various social and economic needs according to individual or household needs. It enabled them purchase staple foodstuffs, household goods, farm inputs, paying for school fees and building houses. She however narrated that only few local people attained the expected food self-sufficiency levels or improved economically through the rice enterprise. This was because their rice cash proceeds were not sufficient to cater for all their needs. Therefore, Mulala arqued that poverty and food insecurity continued to hit some Barotseland households despite the prevalence of rice as a cash and food crop in province.[10]

Review of the Implementation of the First National Development Plan (FNDP), 1966-1972 *Vis-à-vis* Rice Growing and Food Security in Barotseland

At independence in 1964, Zambia inherited a dual economy characterised by a highly impoverished countryside and a relatively developed urban sector along the line of rail. During the colonial period, commercial agricultural ventures, other economic and social infrastructure developmental activities were carried out by European farmers along the line of rail. Barotseland, Northern, Luapula and North-Western Provinces were singled out as some of the neglected areas during the colonial era. In order to eliminate existing imbalances between rural and urban areas, the UNIP government emphasised the diversification of the country's economy by developing the agricultural sector and infrastructure of the country. The government wanted to avoid total dependency on copper as the core economic backbone of the country's economy.[11]

The goal was to be accomplished through formulated state policies which were contained in the First, Second, Third and Fourth NDPs. The development of the agricultural sector was intended to increase employment opportunities, consequently improving the livelihood of the rural people. Therefore, the NDPs included locating of new agricultural, industrial projects, providing agricultural training seminars, rural credit facilities and markets to rural peasant farmers. The NDPs further planned to improve communication and transport within and between districts. The First National Development Plan (FNDP) was from 1966 to 1970. In the agricultural sector, the FNDP was designed towards the attainment of rural self-sufficiency in food crops, and to raise

the capacity of the rural people to transform available resources into sustainable social and economic growth.[12]

Achievements in the Implementation of the FNDP

During the FNDP, Zambia achieved some important gains in her economic and social development in the agricultural sector but not in rice production. On the agricultural front, remarkable progress was mainly made along the line of rail. The policy of diversification of the agricultural sector was embarked upon. The agricultural sector was considered as a long-term industry in which structural changes in the production of Virginia tobacco, cotton, a large percentage of maize and beef production were to be largely operated by Zambians. During the plan, sugar refinery at Nakambala Sugar Estate in Mazabuka, Virginia tobacco and cotton production in the Eastern province saw a rapid expansion and development while a good base was laid down for dairy farming. The Zambian economy was to some extent diversified by establishing new units of local manufacturing of textiles, sugar, cement, chemical fertiliser and metal fabrication.[13]

Other developments achieved during the FNDP were an increase in a number of agricultural cooperatives in every province of Zambia. At independence, cooperative development did not make substantial progress outside Eastern province. But due to emphasis that was laid towards improving processing and marketing of agricultural products, 1,200 cooperatives were established in the country. Of these, 800 were agricultural produce related cooperatives spread in all provinces of Zambia. In addition, the achievements were also evidenced by increased control over utilisation of resources generated from the mining sector.[14] Generally, the FNDP provided a valuable background for better formulation of targets and strategies for the implementation of the Second National Development Plan (SNDP).[15]

Challenges in the Implementation of FNDP *Vis-à-vis* Rice Growing in Barotseland

Though some of the planned strategies towards the attainment of the FNDP goals were implemented more remained to be done in rural communities such as Barotseland. Up to the end of the FNDP, no major developments took place in the agriculture sector in the province.[16] Among the staple food crops and cash crops priotised at planning and implementation stage of the FNDP, none addressed the expansion of rice growing. In addition there was no deliberate

plan to address the problem of annual floods in the Barotse flood plains. Hence, no significant expansion in rice growing was achieved.[17] The use of *matema* gardens for growing indigenous staple food crops were not a priority at planning stage .[18] Thus, poverty and food insecurity continued to hit some local households.

Another obstacle in eliminating the social and economic imbalance between the rural and urban areas through agriculture was lack of knowledge on how to manage co-operatives. The development of the agricultural sector was also hindered by insufficient agriculture extension officers, inadequate and late delivery of essential inputs. Essential inputs included fertiliser, seeds, and pesticides. In addition, some peasant farmers lacked access to credit facilities, stock feed and appropriate machinery and modern farming techniques. The government considered infrastructure or capital development works such as construction and maintenance of roads and waterways expensive in Barotseland. The problem was attributed to annual floods in the Barotse flood plains and the sandy terrain in the forest region. Lack of adequate funding towards the improvement of the agricultural sector by the government adversely affected many developmental projects including rice growing that would have improved the livelihood of people in the province.[19] Therefore, famine, hunger and poverty continued to hit Barotseland up to of the end of the FNDP in 1972.

Aims of the SNDP *Vis-a-vis* Rice Industry in Barotseland (1972-1976)

Having reviewed the successes and failures in the implementation of the FNDP, the Zambian government came up with the Second National Development Plan (SNDP) from January, 1972 to December, 1976. Like the FNDP, the main objective of the SNDP was to correct the anomaly of lop-sided development that Zambia inherited from the pre-independence period.[20] The Zambia government considered it cardinal to secure self-sufficiency in food crops and to create jobs thereby increasing the income of rural people.[21]

During the SNDP, the state encouraged the setting up of private and state production schemes in various parts of Zambia. It was clear that international organisations, friendly foreign governments and the local people would be partners in implementing the plan. Development through agriculture among the rural population was to be concentrated on selected Intensive

Rural Development Zones (IRDZs) throughout the country. The IRDZs were to be selected on the strength of agriculture and general development potential of each area.[22]

Successes in the Implementation of the SNDP

During the SNDP, IRDZ programmes contributed towards the emergence of small-scale farmers who became commercially oriented rural producers of cash crops across the entire country. Rice, wheat; sunflower and maize growing schemes were launched in former colonial rice growing areas of Barotseland such as; Namushekande and Sefula in Mongu, Senanga and Kalabo Districts. Cattle ranching schemes were also established in various parts of Barotseland. Consequently, there was increased usage of ox drawn ploughs thereby expanding areas under crop production. Cow dung was used as fertiliser. As a way of addressing the transport problems, pulled ox-carts were used. An increase in cattle ranching was important for income generation. It also improved the levels of diet of some households who had access to cattle food products.[23]

According to Indopu Njamba, Kaoma District benefited more from the IRDZ projects compared to other districts in Barotseland. This was because its forest region was characterised by fertile red loam sandy soil which was ideal for growing various staple food crops. Therefore, Njamba confirmed that the programmes made Kaoma District a re-settlement area for small scale and commercial farmers who attained food security.[24] During the period under review, the government trained some local people in long and short term income generating life skills courses among which were; crop farming, food processing, cookery, carpentry, cattle rearing, crocheting, tailoring and designing. Those who utilised increased their income through the skills improved their food security.[25] The Zambian government in collaboration with United Nations World Food Programme (UNWFP) and the United Nations Food and Agriculture Organisation (UN FAO) supported food diversification programmes by promoting rice growing.[26] Measures taken by the government in the agricultural sector during the SNDP explained the reason why some local households in areas such as Kaoma District attained food security.

During the SNDP, the NAMBOARD and Cooperative Unions were established in all provinces of Zambia. In addition, agricultural extension workers visited some rural farmers to train local peasant farmers in various agricultural farming techniques. This resulted in increased production of rice.[27] In some rural areas, construction and maintenance of infrastructure was attained. For

instance, in some rural rice growing areas such as Northern and Eastern provinces roads were linked to urban markets.[28]

Challenges in the Implementation of SNDP

Considerably, the expected development in the agricultural and also the industrial sector in the country side remained lop-sided. In addition, the domestic production in the country was below the initially planned targets. The problem was attributed to the fact that equipment used in the above mentioned agricultural projects was imported and capital-intensive. The planning process also remained weak both in terms of decision making and at the implementation stage. For instance in Barotseland, though rice growing was encouraged in Barotseland, rice growing mainly followed the route of the former early rice growing areas. Thus, less expansion was done in rice production during the SNDP. In addition, the government lacked a better system of monitoring the few available rice and other developmental projects. The other challenge was that there was inadequate response from some local people towards rice growing since the government did less in providing Peasant Farmer Surport Services to the local peasant rice farmers in Barotseland.[29]

Other factors that contributed to failure in attaining the SNDP targets in the agricultural sector were due to economic sanctions and the background of the boader closure against Rhodesia by South Africa in January, 1973. Due to the above factors, the government did not have enough resources to carter for the planned agricultural projects and at the same time to attend to the un planned social economic challenges of the time. The sanctions were as a result of the move taken by the United National Independence Party (UNIP) under David Kenneth Kaunda towards Rhodesian Unilateral Declaration of Independence (UDI) in 1965.[30]

In order to solve problems caused by the UDI, the government of Zambia diverted resources from long term development projects to meet the emergencies of diversion of the country's export and import trade through various alternative routes. This resulted in the country's economic difficulties. At the same time, the country was faced with oil crisis, break-up of the International Monetary Systems, world inflation and consequent collapse of copper prices. Therefore, the economic crisis that hit Zambia in the 1970s worsened the vulnerability of some

Barotseland communities.[31] While roads and rail net-works were improved on the line of rail, no railway and road were developed in Barotseland. Due to impassable roads and water ways, the Province was cut off from major rice markets outside the province.[32] Despite engaging in rice growing, less was achieved by the local no food security or economic self-sufficiency, was attained by many Barotseland households.

Although agricultural policies such as IRDZ were designed to improve food security, to a larger extent, they made rural societies vulnerable. The programmes instilled a dependency syndrome among many Zambians. The problem was attributed to intensive state interventions in the agricultural sector. The state promoted agricultural policies that favoured maize peasant farmers by providing them with subsidised farm inputs and implements at the expense of the indigenous staple food crops and other crops such as rice.[33] The state discouraged shifting cultivation for indigenous food crops. Thus, the food base for many Zambians was limited and narrowed to maize meal as a staple food and yet Barotseland was a maize deficit province. The government of Zambia continued to neglect ecological and terrain demands of Barotseland. Hence, during the SNDP, no sustainable food self-reliance and poverty reduction was attained despite some local people engaging in growing a cash crop such as rice.[34]

The Third National Development Plan (1979-1983) *Vis-a-vis* Rice Growing in Barotseland

The TNDP was embarked upon by the Zambian government from 1979 to 1983. In the 1979 season, total rice production in Zambia was estimated at 5, 000 tonnes while the amount of marketed rice was estimated at 2,080 tonnes only. Despite the recorded increase in rice production levels in the country, the levels of supply was less than 25 percent of the country's total demand. Therefore, fewer people benefited from rice growing as a business enterprise. On the other hand, during the 1978-1979 seasons, the country's estimated demand for maize was 7 million of 50kg bags while the marketed amount was only 3.7 million bags. Thus, the deficit in maize for the season was 33 percent lower than the demand. The failure in meeting the estimated demands in crop production was attributed to poor rain fall and inadequate supply of essential inputs like fertiliser, pesticides, stock feeds and machinery.[35]

Therefore, the TNDP was launched against the background of sluggish growth performance and foreign exchange difficulties mainly due to disruptions of developmental projects caused to the

country during the SNDP. The TNDP represented a major national endeavour to correct the past trends. The plan was also meant to make planning the principal means of promoting social and economic development on socialist line in conformity with the UNIP government philosophy of humanism. The objectives of the TNDP were to be achieved by diversifying the economy from total dependency on copper thereby increasing the share of manufacturing and agricultural sector.[36]

The attainment of the goals set was based on some of the following principle assumptions; that the price of copper would remain constant at K1, 200 per tonne and that the terms of trade and the exchange rate would also remain constant after the 1978 devaluation of the kwacha. In the agricultural sector, the overall objective during the TNDP was emphasised towards the attainment of regional and national maize self-sufficiency. The aim of the state was to create maize buffer stocks. An estimated average production of maize was at 1, 700, 000 tonnes in 1983 against the internal demand estimated at 1 483 000 tonnes by 1983.[37] In order to achieve maize production targets by 1983, an estimated total of 30, 000 x 50kg pockets of seed were to be provided to farmers. Agriculture extension workers would also spearhead a programme of popularising maize seed production by small scale farmers. The plan also included the intensification of extension services to rural peasant farmers, timely supply of inputs at fair prices and to provide agricultural credits to small scale farmers.[38]

The TNDP agricultural policies and strategies towards food diversification also emphasised the plan to increase rice production in the wetlands areas of Northern, Barotseland, Eastern and Luapula provinces of Zambia. This was because the increase in rice production over the previous years did not keep pace with the demand in Zambia. For instance, at the time of planning in 1979 rice production levels were at 2 200 tonnes against the estimated demand of 12, 000 tonnes.[39] By the end of the TNDP in 1983, the estimated internal demand for paddy rice production was 15, 000 tonnes.[40] The high demand for rice in the country proved that rice could have been a viable project to the rice growers and those engaged in other rice business ventures if only the planned strategies in the NDPs were successfully implemented by the state.

In order to avoid low rice yields caused by droughts and total dependency on rain fed waters for the production of the commodity, the government set up rice irrigation schemmes. It was also

hoped that irrigation programmes would help to develop small-scale rice schemes using simple methods and small capital investment on a self-help basis. In order to promote marketing for locally produced varieties, the TNDP included the decisions to restrict the import of the commodity.[41] During the TNDP the government planned to undertake feasibility and preliminary studies on basic potential underground water sources and economic viability of the irrigation schemes. The rice enterprise would thus increase income for the rice growing communities. Consequently, food security and economic self-sufficiency among rural populations such as Barotseland and other rice growing provinces would be attainned.[42]

The TNDP consisted of strategies on how to control rice losses during growing and post-harvest stages caused by inadequate use of pesticides and other disease control measures. Although pesticides and fungicides were imported into the country during the SNDP, their use was largely limited to rice commercial farmers. Thus, the state intended to expand plant protection facilities to small scale farmers as well.[43] The plan also intended to promote the use of ox-cultivation technology. Such technology in rice production was the key factor in raising the volume of output for rural small-scale farmers.[44]

Successes

During the TNDP, some level of success was recorded in various social and economic programmes due to increased Peasant Farmer Support Services (PFSS). Various state and private institutions participated in programmes that intended to improve rice production and productivity in Zambia. Government institutions such as NAMBOARD, Western Province Cooperative Union (WPCU), Primary Cooperative Unions and Lima programmes worked with the local rice peasant farmers.[45] NAMBOARD concentrated on purchasing maize while WPCU in conjunction with Primary Cooperatives provided marketing services for rice produce as well. Credit Union Savings Association (CUSA) and the Lima Bank assisted indigenous peasant farmers in the province to access loans.The Lima programme was launched in 1980 to supply seeds and fertilizer. The government encouraged the rural peasant farmers to apply chemical fertiliser on a Lima.[46]

In order to attain self-sufficiency in rice production and reduce poverty among rural communities, the state encouraged the participation of donor countries and other stake holders through increased PFSS.[47] The Netherlands was one of the donor countries that funded some rice projects such as the Kalabo Agriculture Projects (KAP) and Animal Draft Power Projects (ADDP). Through ADDP, local peasant farmers were trained on how to make oxen draw a plough.[48]

Other stakeholders who participated in improving the rice enterprise in Barotseland were the Catholic Mongu Diocese Centre (CMDC), Young Women Christian Association (YWCA) and National Milling Company (NMC). PFSS provided local peasant farmers with seeds, loans, fertiliser, rice polishing, packaging and branding, marketing, transportation and giving technical advice to the indigenous farmers on rice growing techniques.[49]

During the TNDP, rice irrigation schemes were set up in Barotseland and Northern provinces by the Japanese International Cooperation Agency (JICA). Irrigation projects were set with an aim of promoting food diversification and poverty eradication among the rural households. JICA was also involved in Agriculture Verification Studies (AVS) that would help to widen rice seed varieties for different soils. Due to such research programmes, irrigation scheme projects were up at Namushekende, Lealui and Sefula in Mongu District in 1987.[50]

The government of Zambia in partnership with the Netherland government funded the Land and Water Management Project (LWMP) in Barotseland. LWMP was a hydrological and soil research programme aimed at reducing flood risks and also at expanding land usage under rice production.[51] Wamuwi Mukela, an employee and a driller of boreholes in the Ministry of Water Affairs, explained that a York dredger was bought by the government to maintain existing canals from Mongu to Kalabo District. He also stated that, manual works for clearing drainages were done through hired labour from the local communities. He further informed that the mode of payments for labour in agricultural work was by cash, and payment in kind through Food for Work Programmes (FWP). Mukela gave an example of some of the foodstuffs used for payments such as maize grain, mealie-meal, salt and cooking oil. He also explained that the BRE worked with the state and other stake holders to organise and monitor agricultural works.[52]

The Participation of women in rice growing as an income generating activity was vital in attaining food security and poverty reduction among the rural households. A pilot project called People's Participation Projects (PPP) funded by the Food and Agriculture Organisation (FAO) was launched in 1983 in some wetlands of Barotseland. FAO aimed at initiating a suitable developmental approach to increase income for the rural households through increased rice production. The PPP worked through existing cooperative unions and provided loans in form of cash, seeds, fertiliser and herbicides.[53]

PPP gave women and men an opportunity to participate in rice production as a cash crop. In areas such as Kalabo District where such pilot programmes were launched, rice growing became a major cash crop for the eradication of poverty, famine and hunger. The indigenous people were also encouraged to increase their food security by growing staple food crops such as maize, cassava, sorghum and millet. Women and children were the main suppliers of labour in the rice and other food crop fields. This was because some men had migrated from rural areas in search of wage labour in urban areas. Therefore, women played an important role in fighting against famine, hunger and poverty by actively participating in rice growing as a cash crop.[54] Indicating sharp increase in paddy rice production levels from periods between the Second, Third and the Fourth NDP. Statistics indicated that in 1974, Barotseland produced 377 (80kg) bags, 6 300 (80kg) bags in 1979 while in 1981, the rice production increased to 16 500 and another sharp increase of 56, 600 in 1989.[55] The above information evidenced that the participation of some donor countries and private sector other in providing PFSS in rice enterprise led to a sharp increase in rice production leves during the TNDP and the Post-TNDP. (See Table 2 below to compare production levels by province).

Table 2: Paddy Rice Production in Metric Tonnes (MT) by Province, 1987-1990

Year	Zambia	Central	C/Belt	Eastern	Luapula	Lusaka	Northern	N/Western	Southern	Western
1990	9,293	80	112	1,284	484	-	3,767	262	-	3,276
1989	11,734	28	61	1,886	411	200	4,351	557	-	4,240
1988	9,654	42	52	1,492	235	176	3,560	670	-	3,426
1987	8,242	44	75	1,058	330	3	3,281	470	-	2,982

Source: GRZ, Central Statistical Office, *Living Conditions Monitoring Survey* (LCMS VI), 2010, pp. 2-4.

According to Table 2, between 1987 and 1988, Barotseland produced 2, 982 and 3, 426 metric tonnes of paddy rice respectively. Then between 1989 and 1990, the province produced 4, 240 and 3, 276 metric tones, respectively. Thus, between 1987 and 1990, Barotseland ranked as the second major rice producer to Northern Province, while Eastern and Luapula Provinces ranked third and fourth respectively. Despite the steady increase in rice production in Barotseland during the period under review, no sustainable food security and economic self-sufficiency was attained up to1990.[56]

Table 3: Paddy Rice Yields per Hectare in MT by Province, 1987-1990

Year	Zambia	Central	C/Belt	Eastern	Luapula	Lusaka	Northern	N/Western	Southern	Western
1990	1.0	0.8	1.9	0.9	1.0	0.0	1.1	1.4	-	0.9
1989	0.9	1.7	1.6	1.6	1.0	3.4	1.1	0.9	-	0.7
1988	0.9	1.6	0.4	1.6	1.1	2.6	0.9	1.1	-	0.7
1987	0.9	0.5	0.6	1.6	1.4	0.2	1.0	1.4	-	0.7

Source: GRZ, CSO LCMs, 2010, p. 2.

From the above analysis, it can be deduced that despite the state interventions in the rice enterprise, local rice peasant farmers faced various challenges as indicated in table 3 and 4. According to Table 3, Barotseland had the lowest rice yields of less than 1 metric tonne per hectare. Meanwhile other major rice growing provinces in Zambia produced an average of 1 metric tonne per hectare. The problem of low rice yields in Barotseland was one of the major challenges that made rice growing a non-profitable venture. Low rice sales were yet another challenge that hindered the rice enterprise from being a profitable venture in Barotseland.[58] (See Table 4 below).

Table 4: Paddy Rice Production and Sales per Province, 1988-1989

Province	Production (80kg bags)	at % of National Production	Sales (80%kg bags)	at % of National Sales	Sales as % Production
Central	528	0.4	20	0.02	3.8
Copperbelt	799	0.5	1	0.001	0.1
Eastern	26,214	17.0	8,191	9.2	31.2
Luapula	5,594	3.7	2,638	3.0	47.2
Lusaka	2,184	1.5	2,180	2.5	99.8
Northern	53,456	35.8	41,564	46.8	77.8
N/Western	6,580	4.4	2,980	3.4	45.3
Southern	0	-	0	-	-
Western	54,049	36.2	31,178	35.1	57.7

Source: Gear Kajoba, *Food Crisis in Zambia*, (Lusaka: Lusaka Government Printers), 1993, p. 45.

Table 4 indicated that in the season 1988-1989, Barotseland recorded the highest rice production levels at 36.2 percent. Meanwhile, Northern Province was at 35.8 percent and Eastern Province at 17.5 percent. However, Barotseland, with the highest rice production level in the country during the season only marketed 57.7 percent of the total rice produce, meanwhile, 77.8 percent was marketed in Northern Province. Such low rice sales by the local peasant farmers yielded them little or no profit.[59] Thus, the rice enterprise in Barotseland did not attain the expected food security and economic self-sufficiency.

Monopoly by state institutions such as the NAMBOARD in providing PFSS was another challenge. The operational roles of government institutions and the private stakeholders in the PFSS were not well defined. Despite agricultural policies that encouraged collaboration of the state and the private sector in providing the services to peasant farmers, NAMBOARD and the Provincial Cooperative Unions maintained monopoly in crop marketing in the country.[60] The trend deterred the private sector from providing similar services to some rural peasants.

Additionally, the centralised system created red tape in the channel of providing PPSS. For instance, the Ministry of Finance in Lusaka allocated funds to NAMBOARD which then funded Provincial Cooperative Unions (PCU). In turn, The PCU also funded Primary Cooperative Unions. With the budgetary constraints faced by the government in the 1980s, insufficient funds were provided to the Provincial and Primary Cooperative Unions which directly dealt with the rural peasant farmers.[61] Consequently, cooperatives failed to deliver farming inputs, loans and payments for crop sales in time. Thus, it was difficult for local peasant farmers to plan for the next farming season in good time. The result was low rice yields and poor rice grain quality which attracted low prices for the local rice varieties.[62] Therefore, despite an increase in rice production in Barotseland, poverty and hunger continued to cause vulnerability among some local households due to insufficient funds realised from the sales.

Another challenge faced in the rice industry was insufficient storage facilities for rice produce, specifically in rural areas. NAMBOARD with larger storage and grain polishing facilities was mainly situated in the provincial headquarters of each province. NAMBOARD concentrated on purchasing crop produce from areas with accessible roads. Since most of areas of Barotseland did not have passable roads and water ways, Primary Cooperative Unions were the ones that bought rice produce from the remote rice areas and sold it to Provincial Cooperative Union. Although Primary Cooperative Unions dealt directly with rural rice peasant farmers, they did not have sufficient funds to purchase rice produce, transport, storage, polishing, packaging and branding facilities.[63] In the absence of reliable and adequate storage facilities, rice produce in some areas went to waste. Therefore, while food supplies were produced by the rural communities such as those of Barotseland, rice processing and storage arrangements favoured the urban rice commercial farmers and enterprenures.[64] To this effect, despite rice peasant farmers in Barotseland engaging in rice production, they remained poor and food insecure.

Some Barotseland peasant farmers used oxen for ploughing rice fields and also for transporting their crop produce. However, in 1987/1988, Barotseland and Southern Province were badly affected by loss of cattle due to animal diseases, such as Foot and Mouth, Contagious Bovine Pleura Pneumonia (CBPP) and East Coast Fever. The loss of oxen by small scale farmers coupled with the prevailing drought conditions in the country limited rice production levels in

Barotseland. In addition, some households that were dependent on cattle enterprise for income generating and food supplements lost their important source of livelihood.[65]

The irrigation schemes lanched by the Japanese government in 1987 in Mongu collapsed after the donor countries withdrew their funding towards the projects. The Zambian government failed to sustain the already existing modern technologies in rice production on the ground that the projects were too expensive to maintain. The feasibility and viability surveys done by the government at planning stage were not appropriate. Furthermore, the government did not give enough training to the local communities on how to maintain the projects. Meanwhile, some local people had no interest in participating in rice growing because it was labour intensive and less profitable. The collapse of irrigation schemes in Baroteland limited the viability of rice enterprise. Therefore, the expected targets towards rice poverty reduction and food self-sufficiency were not achieved.[66]

Canal and drainage works were not accomplished as planned in the TNDP. Van Gils' *Environmental Profile Report* on Barotseland stated that up to 1988, the government of Zambia had not yet devised better technology and efficient methods to deal with the flood problem in the Province. The report attributed the problem to the use of traditional methods and tools such as hoes in constructing and clearing canals and drainages. Only 10 percent of the Barotse flood plains were utilised for crop production because of annual floods.[67]

Wamuwi Mukela a former employee in the Ministry of Water Affairs emphasised that, lack of male labour and lack of modern machineries for use in canal and drainage works limited rice crop production. Mukela added that the government bought a dredger in the 1980s for use in canal and drainage works in Barotseland but it was only utilised for a few years after which it broke down and was never repaired. He also told that lack of planning and funding for canal and drainage works limited rice production and productivity. As a result rice production was not a profitable activity among some Barotseland households despite engaging in rice growing.[68]

While some women participated in rice production in order to improve their livelihood, they were hindered by some negative cultural aspects. The male folk tended to dominate rice project activities such as PPP.[69] Some women were directed to remain home and just to be getting the instructions for modern rice growing techniques from their husbands. This unprogressive culture

deterred the efforts of the married women in rice production. Some single headed households who avoided the engaging in PPP due to some cultures were more disadvantaged. This was because these women did not have husbands to explain rice growing techniques taught during training sessions. Some women were not allowed by their husbands to have control over the use of cash proceeds from rice sales.[70] Although in most cases women were primary producers of rice and other food crops, 93 per cent were poor with 85 per cent being extremely poor.[71]

Another contributing factor that hindered the expansion in rice production in Barotseland was the fact that rice growing was labour intensive. Family labour was commonly used and supplemented by hired labour. The mode of payment was by cash and in kind. Despite engaging in various labour procurement strategies, the problem of insufficient labour continued to hinder expansion in rice production.[72]

Rice growing in Barotseland was dominated by small-scale holders who used traditional methods and tools. Many rice peasant farmers did not use chemical fertiliser because it was inaccessible, and also feared that its usage would result in soil degradation. Broadcasting of mixed and recycled rice varieties was a common method used for rice planting instead of seed transplanting. Furthermore, the use of pesticides in controlling crop loss during rice production and post-rice harvesting handling processes was rarely practised by most rural small-scale rice farmers of Barotseland. Consequently, low rice production and poor rice quality resulted in low profits from rice growing ventures.[73] Thus, food insecurity and poverty was not eliminated among some local households despite engaging in rice production.

Another hinderance in the growth of the rice industry was caused by the inconsistence in the planning and implementation of state policies. During the TNDP various developmental projects and programmes remained unaccomplished. Inconsistence in policy making was one of the problems that hindered the implementation of the targeted agricultural and other developmental projects.[74] The problem emanated from 1970s economic crisis due to a fall in copper prices on the world market which coincided with the second oil shock of 1979/1980. As a result, the demand for most primary commodities including copper was depressed resulting in a 20 per cent decline in total export earnings and a current account deficit of Gross Domestic Product (GDP).[75]

The worsening economic conditions during the TNDP compelled UNIP and its government to seek assistance from the International Monetary Fund (IMF). In order to resuscitate and restructure the economy, the government agreed to implement a three year Structural Adjustment Programme (SAP) from 1983 to 1985 with the IMF and World Bank.[76] However, the SAP worsened the economy of Zambia instead of improving it. While the TNDP focused on diversification of the economy towards agriculture, the World Bank and IMF sponsored programmes emphasised the rehabilitation of the existing economic structures. Consequently, there was foreign exchange auctioning that resulted in the devaluation of the kwacha, decontrol of prices and the implementation of a wage freeze. Government expenditure was restricted, while subsidies on maize mealie meal and farm inputs were removed. The agricultural sector was further affected by high interest rates on loans obtained by peasant farmers resulting in high production cost while selling prices remained low.[77] The conditionalities attached to the IMF stabilisation programmes adversely affected the Zambian economy because their conditions were not in line with the social, economic, and structural problems of a developing country like Zambia. The programmes worsened the standard of living for many households in Zambia especially the rural communities like those of Barotseland.[78]

In a bid to revamp the economy of the country, the government abandoned the IMF programmes by launching a new standby arrangement in 1985. In May, 1987 the government resorted to the Interim National Development Plan (INDP). The plan was affected in July of the same year 1987 under the New Economic Recovery Programme (NERP). The NERP arrangement had the following conditions: Exchange rate devaluation, import liberalisation; price and interest rate were liberalised. Thus the role of the development plan was reduced because of reduction in public expenditure, price control, removal of subsidies and introduction of credit ceilings on government and private sector borrowing from the banking systems.[80] In 1989, the government came up with the Fourth National Development Plan (FNDP). Like the TNDP, the FNDP also embraced the policy of developing agriculture and rice growing as a cash crop in the wetlands of Zambia. These objectives were aimed at improving the livelihood of the rural communities.[81]

Therefore, inconsistency in policy making caused by an unfavourable economic climate in Zambia led to a massive decline in investment levels in some developmental projects such as rice growing and other related projects. For instance, up to the end of 1990, no major developmental projects such as mining, manufacturing industries, railway line or road networks took place in

Barotseland.[82] The prevailing country wide economic crisis worsened the vulnerability of some Barotseland households. Consequently, food riots erupted in December 1986 and July 1989 in Lusaka and the Copperbelt respectively.[83] Due to all these challenges faced in the rice industry, despite engaging in rice growing as a cash crop, by the end of 1990, analysis of poverty levels in Zambia indicated that Barotseland ranked as one of the poorest Provinces in Zambia.

Conclusion

This chapter investigated why Barotseland continued to be one of the poorest and least food secure province despite the steady increase in rice production as a business enterprise ventures between 1964 and 1990.The chapter further investigated rice as a staple food among Barotseland communities. It also reviewed the National Development Plans (NDPs) during the period under review. The chapter established that rice grew well in the fertile Barotse flood plains where most of the statple food crops such as maize could not grow. It also observed that in Barotseland, rice was not a staple food crop but a cash crop and a food supplement. Just like in colonial era, rice growing continued to be a cash crop for poverty reduction and food security among the local people in Zambia. Some engaged in rice growing, rice trading, rice milling, and some provided labour in rice fields or as machinery operators. The local people intended to use the profits from rice sales on social and economic activities such as purchasing the needed foodstuffs and other material items. The chapter also established that at independence, Barotseland, Northern, Luapula and North-western Provinces were some of the most impoverished areas in the country. Thus, the main objectives of the NDPs were to improve the livelihood of the rural communities.This was to be done by diversifying the economy of the country through the development of the agricultural sector, manufacturing industries and infrastructure. These projects were meant to create jobs for the Zambian people thereby increasing income for rural population.

The chapter highlighted the fact that, during the First and Second NDPs, the agriculture programmes did not efficiently encompass the framework and strategies of attaining food self-sufficiency and poverty reduction in Barotseland. For instance, the NDPs did not indicate how production and productivity of rice and other indigenous staple food crops would be increased. The agricultural policies mostly supported maize production as a staple and cash crop in all provinces in Zambia. This was despite Barotseland being a maize deficit province due to annual

floods and infertile sandy soils. The strategies on how to make rice a viable economic venture were mostly included in the Third NDP. During the TNDP, rice peasant farmers in Barotseland received Peasant Farmer Supported Services (PFSS) from the government, the BRE and the private sector. In addition, some local peasant farmers were committed to work with the government and other stakeholders to improve their livelihood through rice enterprise activities. The PFSS institutions provided some rice peasant farmers with extension services through sensitisation programmes on the rice growing techniques. These included the use of irrigation technology in rice growing, appropriate rice seed varieties and seedling transplanting instead of using the broadcasting methods in rice planting. The PFSS also provided loans to some local peasant farmers in form of cash and farm implements. The farmers were provided with ox-ploughs, chemical fertiliser, rice seed varieties, pesticides and fungicides, storage, polishing, packaging, branding, transportation and marketing facilities.

The chapter also demonstrated that from 1964 to 1990, Barotseland recorded a steady increase in rice production. However, by the end of 1990, the investigated records indicated that Barotseland was one of the poorest and least food secure province in Zambia. This was attributed to various challenges faced in the rice industry. The chapter pointed out some of the major challenges in the rice industry. For instance, the agricultural policies included in the NDPs did not suit the ecological and terrain conditions of Barotselanad. For instance, throughout the nation, the agricultural policies supported maize production as cash and staple food crop at an expense of rice and the indigenous staple crops such as cassava, millet and sourghum. Such policies that promoted maize dietary affected the adoption of rice as a staple food in Barotseland,. This was despite the prevalence of the commodity and also the fact that maize was a deficit crop in the province. On the other hand, the implementation of projects that were meant to improve and sustain the rice industry was inconsitent and in some cases not implemented at all. For instance, rice irrigation scheme launched by the Japanse government in 1987 in Sefula District collapsed upon withdrawal of the donour funding. Up to 1990, the construction and maintenance of road networks and water routes were not accomplished. This was because the government Zambia claimed that the projects were too expensive. Without the use of modern techniques and technology, local rice farmers opted to use traditional methods from planting stage to the post-harvest stage. Consequently, the province recorded low rice production with poor quality that attracted low prices on the market hence, less or no profit on part of rice growers and traders.

The study also established that the inconsistence and failure in implementing some of rice projects and imfrustructure was due to economic crisis that hit Zambia. The Zambian economy was negatively affected by the 1970s fall in copper prices on the world market followed by second oil global crisis of 1979/1980. In order to resuscitate and restructure the economy, the government adopted the Structural Adjustment Programme (SAP) with the International monetary Fund (IMF) and the World Bank between 1983 and 1985. However, in 1985, the government abandoned SAP and launched a new standby programme. In May 1987, the government resorted to the Interim National Development Plan (INDP). These programmes resulted in the devaluation of the kwacha, decontrol of prices and implementation of wage freeze, restriction on government expenditure which led to the removal of subsidies on maize meal and farm inputs. The economic crisis affected the national budget in the agricultural sector and rice growing in particular. Hence, lack of sufficient funding led to inconsistence in implementing and poor monitoring of projects that were meant to improve and sustain the rice industry. The agricultural sector was further affected by high interest on loans obtained by peasant farmers resulting in high production cost while the rice sales prices remained low.

The chapter also established that, insufficient funding resulted in late payments of funds to the respective agricultural organisation such as National Agriculture Marketing Board, Provincial and Primary Coorperative Unions that dealt with PFSS. Consquently, rice peasant farmers were affected by late payments for their rice sales and late delivery of farm inputs and implements by the government. In addition, agricultural extension field workers and the communication and transport sector had insufficient resources access some rice peasant farmers. Rice farmers in areas with impassable roads and water routes did not access training for morden rice growing or monitoring services by field extension workers.

Other challenges included the negative response by some local people against some government rice growing projects that hindered the expansion of the rice production. Additionally, death of cattle due to various cattle diseases affected cattle in Barotseland and Sourthen provinces during the 1987/1988 season led to low crop production levels. Acreage of land utilised for rice and staple food crops consequently reduced due to some farmers who lost their oxen which was used in ploughing the fields. Complex Lozi land tenure policy, fragile markets and customs against women's engagement in some rice enterprise projects further hindered the expansion of the rice

industry. Due to all these challenges, the rice enterprise proved not a viable business venture in Barottseland. The rice cash proceeds were not sufficient enough to help those engaged in the business to purchase the needed staple foods and to carter for other social and economic needs. Hence, up to 1990, the majority of the communities in Barotseland remained poor and food insecure despite the province experiencing steady increase in rice production levels.

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CHAPTER FIVE

CONCLUSION

The study discussed why despite Barotseland being one of the chief producers of rice as cash and food crop in Zambia, the province remained one of the poorest and food insecure provice, from 1945 to 1990. This encompassed discussing the state of food security in pre-colonial Lozi communities and how colonial policies coupled with the Second World War economic crisis further crippled the Barotseland economy. The study also reviewed the implementation of the 1945 Ten Year Development Plan and further reviewed the National Development Plans (NDPs) between 1964 and 1990 in relation to the rice growing and food security. It put emphasis on analysing the impact of the state agicultural policies, the Barotse Royal Establishment (BRE) and the response of the local people in successes and challenges of the rice industry *vis-à-vis* food security.

The study defined food security as the state where a household has access to enough food at all times by either producing or purchasing it. It also pointed out that rice growing in Barotseland was not a staple food crop but a cash crop that the local people engaged in as a business venture in order to increase their income. It was hoped that from the rice cash proceeds, the local people would purchase the needed staple food and also carter for other social and economic needs. Therefore, the study established that rice growing could improve food security for the majority of local households in Barotseland only if many engaged in producing the crop and also if the economic venture was a profitable.

Having analysed the state of food security among the lozi households in the pre-colonial period, the investigated data indicated that the local people engaged in mixed farming. They engaged in crop production and cattle rearing as their major economic activities. Meanwhile fishing, hunting, trading, collection of wild roots and fruits were also important economic activities that enhanced their food security. The study further indicated that Barotseland had two major agricultural land units which were Barotse flood plains and the forest region. The plains were characterised by annual floods while the forest region was covered by infertile sandy soils which were easily affected by droughts. The study informed that each agricultural unit provided peculiar foodstuffs and material items that could only be accessed by people of the other unit through the barter system and trade. Therefore, constraints to food security that hit either

agricultural unit negatively affected the people of the other unit too. However, the pre-colonial Barotseland societies demonstrated resilience against constraints to food security. They engaged in raiding for labour and booty, re-distribution of booty, annual transhumance, scaling down meals, moral economy, ancestral worship, predicting famine and hunger, food preservation, trade and bartering. To further increase their food security, the Lozi adopted different gardens such as the *lizulu, lishanjo, litapa, litongo, litunda* in the flood plains and the litema gardens in the forest region. In these gardens, variety food crops were cultivated in different seasons all year round. The local people's staple food was maize, cassava, millet and sorghum.

The study also established that in Barotseland, food security was dependant on the control of annual flood levels through canal and drainage works. This was because annual floods controlled the whole year economic calendar. It also indicated that, agricultural works were labour intensive due to the annual floods and the sandy terrain. However, during the leadership of the paramount King of the Lozi, Litunga Lewanika (1878-1916) and Yeta III (1916-1945) annual floods were well managed. They utilised tribute and slave labour in canal and drainage works in order to control annual floods. Consequentlly, the agricultural sector was expanded and transport and communication systems were easily facilitated.

The study informed that in the mid 1940s, many communities in Barotseland experienced critical food shortages emanating from many years of failure to control annual foods. This was due to shortage of male labour in the canal and drainage works. The British South African Company (BSAC) and the Crown government were interested in cheap labour to work in the mines and farms for the whites in South Africa, Southern Rhodesia, and in Belgium Congo. In order to enhance labour migration, the BSAC and the Crown government introduced taxation, instutionalised wage labour recruitment, abolition of slave labour in 1906 and twelve days tribute labour in 1925. The province was deprived of the much needed male labour for the required agricultural works. Consequently, annual floods in the plains and valleys of Barotseland inundated the staple food crops. Other major constraints to food security were erratic rains and infertile sandy soils in the forest region.

The study pointed out that the food insecurity problem in Barosteland coincided with the high cost of living caused by the Second World War (1939-1945) economic crisis. The economic crisis affected Britain and her territories. Britain had high expenditure during the war and Britain

wanted to recover economically. She also wanted her colonies not to depend on imported commodities. It was also hoped that by engaging in the production of cash crops African would improve their standard of living. Thus, the colonial government deliberately encouraged Africans in its colonies to engage in cash crop farming depending upon the ecological conditions of each area. The programme was enshrined in the 1945 Ten Year Development Plan (TYDP). From the survey carried out by the colonial government on the level and cause of famine and hunger in Barotseland, it was reported that annual floods was the major constraint to food security. It was thus recommended that crops such as rice and wheat be grown in the wetlands of the Barotse flood plains and low lands of the forest region. This was because the ecological conditions were favourable for growing the crops. In addition, the commodity was on high demand on the market because of food shortages experienced during and after the Second World War. The colonial government also encouraged the local peasant farmers to continue making use of the *matema* gardens in the forest region. The local peasnt farmers cultivated staple food crops such as kaffir corn, bulrush millet, sorghum and cassava. In 1948, the colonial state launched agricultural pilot cash generating ventures such as cattle ranching, rice and wheat growing schemes at Namushekande Development Centre in Mongu district. Rice growing expanded more than other cash crops because it appeared to be a viable economic venture. Some local people became rice growers, traders, millers, machine operators while some sold their labour for cash.

The study further explained that up to the end of colonial period in 1964; most of the commercial agricultural ventures, infrastructure and other social and economic activities were carried out by European farmers along the line of rail. Thus, the countryside remained under developed and impoverished. Barotseland together with Northern, Luapula and Northern-western Provinces were singled out as some of the neglected areas during colonial rule. In order to improve the economy of the nation and especially the livelihood of the rural population, the Zambian government considered it necessary to expand the agricultural sector along side with manufacturing industries and the infrastructure such as road and rail way lines. This was intended to diversify the economy of the nation and avoid total dependency on copper as a core economic backbone of the country. The government also intended to create more jobs for the local people. Like the colonial government, the Zambian government identified rice growing as one of the cash crops with potential to improve the livelihood of the rural population in wetlands of Zambia. These were: Northern, Barotseland, Luapula and Eastern Province. The strategies to

implement the objectives were enshrined in the National Development Plans (NDPs). These were: the First NDP of 1966-1972, the Second NDP of 1972-1976, the Third NDP of 1979-1983 and the Fourth NDP of 1989.

From the reviewed colonial government 1945 TYDP and the Zambian government NDPs, it was established that the plans had some common policies and strategies to improve and diversify the economy of the country by expanding the agricultural sector. Rice was considered as one of the cash crops with pontential to improve the livelihood of the people of Barotseland. This was because Barotseland was annually flooded and rice could thrive in the annually flooded environment while staple food crops such as maize were inundated by the floods. The NDPs also included the need to construct and maintain infrastructure such as, construction of roads and railway line. The aim was to link the rural agricultural areas to internal and external markets in places on the line of rail. The plans further intended to expand land usage under food crop production in Barotse flood plains. It was planned that, funds would be provided for purchasing machinery and payments for labour in canal and drainage works. The number of agriculture extension field workers would also be increased to sensitise rice train rice growers. Monitoring of rice projects and other agricultural projects works were also part of the plans. In order to improve rice production and productivity, the state intended to promote the use of modern technology and techniques in rice growing and processing. Thus, loans were to be provided in form of cash or farm implements and inputs such as tractors, cattle, ox-ploughs, rice seed varieties and rice processing machines.

Some successes were recorded in some areas of rice growing related projects. The available statistical data on rice production in Barotseland indicated that from 1950 to 1960 the province recorded increase in rice production. The colonial state provided some financial and technical support to some rice peasant farmers. However, much of the provided funds were from the Barotseland Native Treasury (BNR). The cash was used for purchasing of agriculture machinery and to make payments for labour engaged in construction and maintenance of canal and drainage systems. The colonial government worked through the Ministry of Agriculture and Water Affairs. The BRE in conjunction with the district indunas and the village headmen organised labour and supervised agricultural projects. The Agricultural extension officers sensitised and trained some local peasant farmers on rice growing techniques. These were such as the early

planting techniques, use of ox-drawn plough and seed transplanting instead of the broadcasting method in rice planting. Some local rice peasant farmers were also provided with loans in form of cash or farm implements and inputs such as oxen, ox-ploughs, rice seed varieties. The processing, packaging and marketing of locally produced rice was mainly done by the government through District Commissioners and Susman Brothers Limited Company. The commodity was sold in Lusaka and in Livingstone where there was readily available market for recruit soldiers. Civil servants, local people and some briefcase buyers also provided market for rice.

Similarly, the province experienced steady increase in rice production levels especially during the TNDP 1979 to 1990. For instance, the data showed that during the Second NDP in 1974, Barotseland produced 377 (80kg) bags while a sharp increase of 56, 600 was recorded in 1989. The increase in rice production was attributed to high participation in providing Peasant Farmer Support Service (PFSS). Some of the donor countries were such as Netherland and Japan. Organisations such as United Nations (UN) through Food Agricultural Organisation (FAO) also gave support towards the development of rice in some areas of Barotseland. They provided technical, material and financial resources that facilitated the implementing of modern technology in rice growing. For instance in 1983, FAO funded People Participation Project (PPP) in Kalabo district which encouraged the participation of women in rice growing together with men. It was reported that through PPP project, rice growing increased the income of those involved in the rice projects. Hence, some local households improved their food security as they were able to utilise the rice cash proceeds to purchase staple food crops. Some used their cash to carter for other social economic needs such as building houses, buying house hold intensils and paying school fund for their children.

Other donour support was observed in 1983, when the Japanese government launched rice irrigation pilot scheme in Sefula in Mongu District. This was a measure intended to reduce risks of low rice production that emanated from droughts and also to avoid total dependence on rain fed water for rice growing. Some of the local private institutions that provided PFSS were: Mongu National Milling Company (MNMC), Catholic Mongu Diocese Centre (CMDC) and Young Women Christian Organisation and Mayeya milling company in Mongu District. Some of

the government institutions engaged in PFSS were: NAMBOARD, the Western Province Cooperative Union (WPCU), Primary Cooperatives and Food Reserve Agency, Credit Union Savings Association (CUSA) and the Lima Bank. The institutions provided assistance ranging from loans in form of cash or farm inputs and implements, technical services in rice growing as well as in post harvesting processes. The investigated sources showed that the Barotseland together with Nortthern, Luapula and Eastern Provinces experienced sharp and steady increase in rice production levels. The increase in production was attributed to the PFSS provided by the colonial and Zambian government institutions, the BRE, donor countries and the private sector.

However, it appeared that the expected goals during the NDPs to reduce poverty and to attain food security by diversifying the economy through expanding the agricultural sector had little impact in Barotseland. Particularly, the rice growing selected by the government as a cash crop with an aim to improve the livelihood of the communities of Barotseland did not have a positive results. The succeses in the rice growing related projects were outweighed by failures during the planning, implementation and monitoring stages of the NDPs. The evidence given proved that despite the steady increase in rice production, up to the end of colonial rule in 1964 many households in Barotseland continued to be hit by famine and hunger due to critical food shortages and high cost of living. Similarly, data analysis on poverty levels in Zambia indicated that by the end of 1990, the two leading rice producers, Barotseland and Northern provinces were second poorest with 84 percent poverty level. Thus, rice growing in Barotseland proved not to be a viable venture that could sustain the livelihood of the majority of local people. Only a small population engaged in rice business ventures improved their livelihood. In addition, many local households did not adopt rice as staple food but as a temporal famine and hunger relief measure or food supplement.

The study demonstrated that the failures in achieving the goals as planned in the NDPs *vis-à-vis* rice projects in Barotseland were attributed to various challenges. Although some of the NDPs included some agricultural policies with the intention to expand the rice industry by controlling annual floods less was achieved. For instance, up to 1990, annual floods were one of the major hinderances in the expansion of land under usage in crop farming including rice growing. The Zambian government and its predecessor did not provide enough resources for the canal and

drainage works. The available data from the colonial reports and according to the 1988 Environmental profile on Barotseland argued that the government failed to use better technology and machinery in controlling annual floods. The slow the expansion, the fewer local people benefited from rice growing as an enterprise. In addition, the policies that aimed at promoting the cultivation indigenous staple food crops such as cassava, millet and soughurm in the *matema* gardens were not supported by the government. Rather, the colonial and the Zambian government agricultural policies were biased to providing more support to support maize production as a staple and cash crop in Zambia. This was despite the fact that maize did not grow well in many parts of Barotseland due to annual floods and sometimes erratic rains coupled with infertile sandy soils.

Other factors that contributed to failure in attaining targeted goals in the agricultural sector were the economic sanctions and the closure of the Rhodesian boarder by South Africa in January, 1973. The sanctions were as a result of the move taken by the United National Independence Party (UNIP) under David Kenneth Kaunda towards Rhodesian Unilateral Declaration of Independence (UDI) in 1965. Government resources were diverted from long term development projects to meet the emergencies of diversion of the country's export and import trade through various alternative routes. The economic crisis coincided with a global oil crisis, breakup of the International Monetary Systems (IMF), global inflation and consequent collapse of copper prices on the international market. Hence, some developmental projects such as construction and maintaining of roads and water ways, canals and drainage works that would have improved gowth of the rice industry were not accomplished.

Lack of political will by the state was identified as one of the main challenges that the rice industry faced. For instance, the task of paying and organising hired labour for canal and drainage works was mostly left in the hands of the BRE. This was worsened by the fact that the funds allocated by the colonial state to the BRE to pay hired labour and to purchase machinery were insufficient. The Zambia government also did not succeed in improving infrastructure in Barotseland. The collected data showed that up to 1990, most of the roads and water ways linking the province to external markets were impassable. The governments considered the projects expensive due to the ecological and terrain factors. In addition, Barotseland did not have

well established eternal markets hence, some local rice farmers failed to sell their rice products. In addition, the local rice peasant farmers and rice traders incurred high transport costs due to long distances on impassable roads to external markets such as Lusaka and Livingstone. Consequently, less or no profit was attained from rice growias hence, the majority of the local households did not improve their livelihood.

The use of traditional methods and technology in rice growing processes compromised the quality of locally produced rice varieties. For instance, the local rice peasant farmers planted re-cycled and mixed seed varieties. They also did not use of chemical fertiliser and herbicides and consequently, the local peasant farmers experienced low yields per and poor rice quality. On the other hand, poor post-harvest handling techniques and lack of storage facilities by most farmers resulted in grain loss. Due to poor grain quality, low prices for the locally produced rice varieties were dictated by the buyers. In addition, customary practices by some men which tended to hinder the women folk from participating in rice enterprise ventures also contributed to the high poverty levels in the province. This was despite women and children being the major suppliers of labour in most agricultural activities such as rice growing. The complex Lozi land tenure policy and loss of cattle due to diseases such as Pleura Pneumonia and Foot and Mouth further hindered the growth of the rice industry.

The study further demonstrated that despite the recorded steady increase in rice production during the TNDP (1979-1983) and the Post-TNDP (1983-1985) some targeted rice growing related projects were not accomplished. There was inconsistency in policy making, implementation and in monitoring of projects by the government. The challenges were partly attributed to the economic crisis that hit Zambia due to the fall in copper prices on the world market coupled with oil crisis. In a bid to resuscitate and restructure the economy, The IMF and the World Bark encouraged the Zambian government to embark on the Structural Adjustment Programme (SAP) between 1983 and 1985. In the same year, 1985, SAP was abandoned. In May 1987, the government resorted to the Interim National Development Plan (INDP), and in 1989, the state embarked on the Fourth NDP. These programmes resulted into the devaluation of kwacha, decontrol of price, wage freeze, restriction on government expenditure which led to the removal of subsidies on maize mealie meal and farm inputs. The agricultural sector was further

affected by high interest rates on loans obtained by peasant farmers. This further resulted in high production cost while the prices for the produce remained low. Due to insufficient supply of funds by the government, most peasant farmers experienced late payments for their crop sales and late delivery of farm inputs. The state also failed to establish reliable markets for the locally produced rice varieties. In addition, lack of response towards rice state projects by some local people while complex Lozi land tenure policy further hindered the growth of the rice industry. The other challenge was the death of cattle and loss of business in cattle trade due to diseases such as Pleura Pneumonia and Foot and Mouth. This resulted in shortage in the use of ox-plough in cultivating fields as well as in the use of cow dung to fertilise the fields. The loss of cattle also further affected the local diet of the Lozi people who depended on milk as part of their daily food. Due to the pointed out challenges, the study concluded that rice growing in Barotseland was not a profitable venture that could sustain the livelihood of a larger population. Hence, despite being one of the chief producers of rice in Zambia, the province remained critically poor and food insecure up to end of 1990.

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