

**A HISTORICAL STUDY OF THE IMPACT OF  
CHILANGA CEMENT FACTORY ON CHILANGA TOWNSHIP,  
1949 - 1995.**

**By**

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A dissertation submitted to the University of Zambia in fulfilment of  
the requirements of the degree of Master of Arts in History.

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*Through him we have also obtained access by faith into this grace in which we stand, and we rejoice in hope of the glory of God.*

**Romans 5:2**

## DECLARATION

I, Chilala Habeenzu, declare that this dissertation represents my own research work and that it has never been submitted for any degree at this or any other university.

Signature .....

Date .....

**CERTIFICATE OF APPROVAL**

This dissertation of CHILALA HABEENZU has been approved as partial fulfilment of the requirements for the award of the degree of Master of Arts in History by the University of Zambia.

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## **ABSTRACT**

Influenced by studies that focus on social, economic and industrial life of urban areas in Africa and beyond, this study seeks to illuminate how the creation of the Chilanga Cement Factory in the late 1940s impacted on the development of Chilanga Township and the surrounding environment. The study postulates that the cement factory stood at the centre of the establishment and growth of Chilanga Township through its creation of job opportunities and provision of such social services as education, health and recreation facilities. It argues that in providing jobs, schools, clinics and other services, the factory attracted many people, both black and white, to work at the factory or settle near it. Stated in other words, the Chilanga Cement Factory served as the engine of the development of the Chilanga Township.

However, the production of cement at the factory had also adverse consequences for both the people and the nearby environment. This study argues that the production of cement led to harmful emissions and dust which compromised human, animal and crop life. The emissions and dust from the factory resulted in bronchial diseases such as asthma, tuberculosis, and other respiratory health complications. The study shows that by the 1990s, the environment around the Chilanga Cement Factory had become polluted, leading to soil infertility and plant diseases.

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## **ABBREVIATIONS & ACRONYMS**

AAC	Anglo-American Corporation
ACID	Advisory Committee on Industrial development
CDC	Colonial/ Commonwealth Development Corporation
COMESA	Common Market for East and Southern Africa
ECZ	Environmental Council of Zambia
FNDP	First National Development Plan
GRZ	Government of the Republic of Zambia
IDC	Industrial Development Corporation
INDECO	Industrial Development Corporation
INESOR	Institute for Economic and Social Research
LUSE	Lusaka Stock Exchange
MMD	Movement for Multi-Party Democracy
NAZ	National Archives of Zambia
NRG	Northern Rhodesia Government
SNDP	Second National Development Plan
SOE	State Owned Enterprise
UNIP	United National Independence Party
UNZA	University of Zambia
USA	United States of America
ZAMIC	Zamanglo Industrial Corporation Limited
ZPA	Zambia Privatisation Agency
ZIMCO	Zambia Industrial and Mining Corporation

# CHAPTER ONE

## INTRODUCTION AND HISTORICAL BACKGROUND

This study considers industrial development, urban growth and the environment during the colonial period and in post-independence Zambia through a historical study of the Chilanga Cement Factory.<sup>1</sup> Cement is one of the most widely used substances for the construction of infrastructure such as roads, houses and other civil engineering works. The cement manufacturing process is an energy and resource intensive process with social, economic, environmental, health and safety impacts.

Chilanga Cement Factory is located in Chilanga Township, fifteen kilometres south of Lusaka along the Lusaka-Kafue Road.<sup>2</sup> It operates under the name Lafarge Cement Zambia Limited. The Lafarge Group is one of the largest manufacturers of cement, clinker, aggregates and roofing materials, and operating in 64 countries worldwide with over 65,000 employees, with its head office based in Paris France.<sup>3</sup>

The development of Chilanga Township dates back to 1906 when it was established as a British colonial government administrative Centre until 1931 when it was closed.<sup>4</sup> The

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<sup>1</sup> In this study, the name Chilanga Cement Factory is used to refer to Chilanga Cement Limited, a Company whose core business was the production and trading of cement. In some areas of the study, the names Chilanga Cement Factory and Chilanga Cement Company have been used as appropriate. Similarly, the names Northern Rhodesia and Zambia have been adopted. Northern Rhodesia for the period before independence, while Zambia for the post-independence period

<sup>2</sup> Lafarge Cement Zambia plc, 'Chilanga Plant: Facts and Figures', [www.lafarge.com](http://www.lafarge.com), p.1, Date accessed: 12 January, 2012.

<sup>3</sup> [http://www.cement.org/basics/concretebasics\\_history.asp](http://www.cement.org/basics/concretebasics_history.asp). Aggregate in construction refers to granular mineral material such as sand, gravel, crushed stone used with a bonding medium like cement or clay to make concrete, plaster, or terrazzo mixture. Date accessed 1<sup>st</sup> May, 2013.

<sup>4</sup> E.A Copeman, 'Memories of Abandoned BOMAS, No. 10, Chilanga', in W.V Brelsford (ed), *The Northern Rhodesia Journal Volume III*, (Lusaka: Government Printers, 1959 ), p.140.

Township has grown from a small Boma and has more government offices, civil societies, business houses, health centres and residences among others.

The construction of a cement factory in Northern Rhodesia was commissioned in 1949, and cement production at Chilanga Cement Factory began in September 1951.<sup>5</sup> The factory was one of the earliest major industrial development programmes after the copper mining industry and the railway line. It was initially built to handle the wet process technology where a substantial amount of water was added in the cement production process. In terms of management, between 1949 and 1954, Chilanga Cement Factory was under a joint venture partnership, with the Northern Rhodesian Government and the Colonial Development Corporation pooling resources together to construct and operate the factory. The second phase between 1955 and 1972 was a partial privatisation phase. Investment was broadened to include the Premier Portland Cement Company of Southern Rhodesia, the Anglo- American Corporation and the British South African Company.<sup>6</sup>

The attainment of independence in 1964 brought significant construction of infrastructure in Chilanga Township. This was guided by the policies in the First National Development Plan of 1966 to 1971, where emphasis was on infrastructure development.<sup>7</sup> The setting up of a third kiln at Chilanga Cement Factory in August, 1967, and the establishment of a second cement factory was constructed in Ndola in the Copperbelt Province in 1969 was an indication that the country needed to be self-sufficient in the commodity in order to meet the vast construction projects that were undertaken in the post-

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<sup>5</sup> Chilanga Cement Limited, *Annual Report for 1969*,(Ndola: Monterey Printing and Packaging Limited, 1970).p11.

<sup>6</sup> Chilanga Cement Limited, *Annual Report for 1969*, p11.

<sup>7</sup> GRZ, *First National Development Plan, 1966-1970*, (Lusaka: Government Printers, 1965), pp.1-3.

independence period.<sup>8</sup> The Head Office of the two factories was at the Chilanga Cement Factory in Chilanga.

In order to promote the indigenisation of industrial development, the Industrial Development Corporation (INDECO), a government parastatal organisation—acquired a majority stake in Chilanga Cement Factory by buying all the shares from the Premier Portland Cement Company of Southern Rhodesia and the British South African Company. The 75 percent shares held by CDC were reduced to 24.23 percent, while Zamanglo, a subsidiary of the Anglo- American Corporation, remained with 9.95 percent shares.<sup>9</sup> Through INDECO, the government of the Zambia became the largest shareholder in the cement factory. Thus between 1972 and 1993, INDECO controlled 45 percent operations in Chilanga Cement Factory.<sup>10</sup> The change of government in 1991 from the United National Independence Party (UNIP) to the Movement for Multi- Party Democracy (MMD) Government saw a reversal of socialist economic policies pursued by the UNIP government. The MMD government's economic policies were anchored on the premise that private investment was cardinal in promoting sustainable economic development. Owing to the high operational costs, government saw it appropriate to expedite the privatisation of Chilanga Cement Factory.

From 1992, the process of privatising Chilanga Cement Factory began, and it was completed in 1994. During the transition period, new developments were taking place. CDC took advantage of the sale of the GRZ shares to increase its share base to 50.1 percent in

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<sup>8</sup> Chilanga Cement Limited, *Annual Report*, 1969, (Ndola: Monterey Printing and Packaging Limited, 1970), p.27.

<sup>9</sup> GRZ, Zambia Privatisation Agency, Progress Report No 4, 1<sup>st</sup> January, 1994 to 30<sup>th</sup> June, 1994, p.7.

<sup>10</sup> Andrew Sardanis, *Zambia: The First 50 years*, (London: I.B Tauris, 2014), pp. 36-37.

Chilanga Cement Factory. Other stakeholders were the Civil Service (Local Conditions) Pension Fund with 6.5 percent of the total shares, Zamanglo Industrial Corporation Limited with 12 percent, Lusaka Stock Exchange Central Shares Depository Limited with 24.1 percent, while the individuals and other institutions held 6.7 of the percent shares.<sup>11</sup> The new development enabled CDC to retain its position as the major shareholders of Chilanga Cement Factory. The Factory was subsequently listed on the Lusaka Stock Exchange Market in April 1995 as a public limited company. The main customers included manufacturers and small scale builders, retailers, exporters, large scale contractors, the mines, government, and manufacturers using cement such as Turner Asbestos Products.

In terms of business operations, the year 1995 was a particularly significant year for Chilanga Cement Factory. Following the completion of the privatisation process of the factory in 1994, the Government of the Republic of Zambia sold off all its shares to the Zambian public and institutions. At the same time, the Management of Chilanga Cement Factory applied for a listing on the Lusaka Stock Exchange Market. The Commonwealth Development Corporation (CDC) obtained a controlling interest of 50.1 percent in the factory.<sup>12</sup>

### **A Brief History of Cement Manufacturing**

The word ‘cement’ originated in early Roman times and was used to describe a material consisting of lime and sand mixed with crushed and sieved pottery. According to Jack Mills, the Romans used a bonding material they called ‘Pozzolana’ when constructing

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<sup>11</sup> Chilanga Cement PLC, *Annual Report for 1995*, (Lusaka: Associated Printers Limited, 1996), pp.6-7.

<sup>12</sup> Chilanga Cement Limited, *Annual Report*, 1995, (Ndola: Falcon Press, 1996), p.4.

monumental structures such as the Pantheon in Rome during the third century.<sup>13</sup> Construction using this material was known as Caementitum. Later, the term Cementum was used to identify a mixture which on being added to the lime gave it power to set and harden under moist conditions.

During the Middle Ages, from the 5<sup>th</sup> to the 15<sup>th</sup> century, the British used quick lime to burn the faces of their opponents at war. Between 1772 and 1792, John Smeaton, a British national, became the first English Civil Engineer to discover high quality cement. In 1824 Joseph Aspdin, a British bricklayer based in Leeds, was linked to the production of the first material known as Portland.<sup>14</sup> Aspdin began the process by first baking powdered limestone and clay in his kitchen stove. Using that method, he laid the foundation for an industry which began to process ‘mountains’ of limestone into cement. In addition to the production of limestone, Aspdin obtained a British patent for both the product, cement and the name, Portland. This was from the similarity of the colour of the new product to the stone that was quarried from the isle of Portland.

The word ‘Portland’ was derived from the first use of this new cement on the Eddystone Lighthouse, which produced a concrete that was considered to be of high quality, and could equal the best-selling Portland stone in terms of solidity and durability. In 1843, William Aspdin, the son of Joseph Aspdin used high temperature to burn clay and lime which fused to produce a material called clinker. Clinker referred to small solid cement

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<sup>13</sup> Jack Mills, ‘A Technical Discussion of Mining Operations In the Lime and Cement Industries of Zambia and Malawi,’ PhD Thesis, University of Nottingham, 2000, p.59.

<sup>14</sup> Mills, ‘Lime and Cement Industries of Zambia and Malawi,’p.59.

pieces before processing the final cement powder. When clinker was ground to powder, it showed good properties of cement.

In Africa, the first cement factory was opened by Edward Lippert in 1892 at Daspoort near Pretoria in South Africa, and in 1904 the first rotary kiln was installed at that factory.<sup>15</sup> The factory used a wet tracking method where water was added in the production processes of cement. Production of cement in the Northern Rhodesia began in 1951 using the wet tracking method as well.

### **Study Area**

Chilanga rests on the side of a large hill, 'Mount Makulu' which is a major decline in altitude between the plateau of Lusaka Province, and the Kafue River Valley.<sup>16</sup> The plateau is incised by a large number of tributaries of the Kafue River some of which dry up in dry weather conditions. Among the tributaries are Chilanga, Musambang'ombe, Mapepi (now Mapepe), Shiwanyama and Munkolo as shown on the maps in Appendices I, II and III. Archival sources on lime Rights at Chilanga have shown that limestone prospecting area for Chilanga Cement Factory covered over 160 square kilometres within a 24 kilometres radius of the factory.<sup>17</sup>

### **Problem Statement**

Most studies on urban Zambia focus on the development of the mining industry with its associated urbanisation, social change and political impact on Zambia. These studies

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<sup>15</sup> Mills, 'Lime and Cement Industries of Zambia and Malawi,' p.59.

<sup>16</sup> Williams, *The Peugeot Guide to Lusaka*, p.15.

<sup>17</sup> NAZ, SEC 1/241. Lime Rights at Chilanga: Reports on the Soil, Cement works and Sand Deposits, 1947-1949, 1949, and NAZ, SEC 1/245, Progress Report of Meetings of Directors of Development on Cement works factory and sketch map showing Chilanga Cement Area, 1949.

neglect other non-mining industries such as Chilanga Cement Factory, yet this factory has not only been in existences since 1949, but has played an instrumental role in the construction industry in Zambia and in neighbouring territories. This neglect has impoverished our understanding of the significant impact that Chilanga Cement Factory has exerted on the history of construction, on urban growth of Chilanga Township, and the impact the factory has had on the environment. This study seeks to fill this gap in the urban as well as industrial history of Zambia.

### **Objectives of the Study**

The objectives of the study are:

- i) To construct the history of Chilanga Cement Factory
- ii) To examine the economic and social impact of Chilanga Cement Factory on the growth of Chilanga Township
- iii) To investigate the impact of Chilanga Cement Factory on its surrounding physical environment.

### **Rationale of the Study**

The topic of industrial development and urban growth has been an area of inquiry for scholars in other fields like anthropology, social and cultural geography and sociology. However, few historians have written on this topic. This study will contribute to literature on the urban and industrial history of Zambia. It is also hoped that the study will contribute to literature on the social, economic, and environmental impact of Chilanga Cement Factory on the area in which it is situated.

## Literature Review

Most of the available literature on industrial development worldwide demonstrates that as industries developed, urban townships began to thrive and the movement of people to economic and industrial zones arose. In the long run, these developments brought about pressure on the physical environment. Therefore, this study is largely based on multi-disciplinary literature and it engages with other scholarly works on industry and development which argue that a link exists between the development of industries, and the growth of urban areas. Furthermore the study focuses on how the development of industries in general, and cement factories in particular have impacted local communities and the environment.

E. J Hobsbawn's work discusses in detail how industrial development in Europe contributed to the rise of urban living. Hobsbawn explores the origin and dramatic course of the British industrial revolution over two-hundred-and-fifty years and its influence on social and political institutions. The study analyses how the development of primary extractive and manufacturing industries in Britain contributed to the rise of urban areas. The new urban living also resulted in demographic changes as the population increased.<sup>18</sup> This work is important to this study because it demonstrates that there is a link between industrial development and urban growth.

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<sup>18</sup> E.J Hobsbawn, *Industry and Empire: From 1750 to the Present Day*, (London: Penguin Group, 1968), p.13.

Similarly, Shula Marks and Richard Rathborne have shown how the development of the gold and diamond mines in South Africa led to the growth of an urban lifestyle and the subsequent social change that followed.<sup>19</sup> Marks and Rathborne base their argument on the themes of Industrialisation and class formation during a period of rapid social change that included the Mineral revolution and the Act of the Union. The concept of towns and townships became synonymous with urban living, and industries began to thrive. In addition, the development of road networks, housing units and office buildings including all construction works contributed to the growth of urban areas.<sup>20</sup> The work by Marks and Rathborne is important to this study as it demonstrates how industrial development played a significant role in the growth of some South African townships such as Alexandria and Soweto. These Townships became the pool resources of labour.

In Zambia, L.H. Gann wrote on early industries.<sup>21</sup> Although Gann's work does not provide sufficient details on the early history of Chilanga Cement Factory, it provides background information to the European settlers around Lusaka. One of the main attributes was their ability to acquire land cheaply as it was being sold by the Northern Copper Company which did not find any minerals in the area. In 1913, a Village Management Board for Lusaka was set up. Gann further noted that in the case of Lusaka, the township began in 1913 at a farm settlement of G.M. Marrapodi, an Italian immigrant who was granted extensive farm land to the North and North east of the railway siding by the Northern Copper

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<sup>19</sup> Shula Marks and Richard Rathborne (eds.), *Industrialisation and Social Change in South Africa: African class formation, culture and consciousness, 1870–1930*. (London and New York: Longman, 1982). pp. i- iv.

<sup>20</sup> Marks and Rathborne (eds.), *Industrialisation and Social Change in South Africa*, pp. iv.

<sup>21</sup> L H. Gann, *A History of Northern Rhodesia: Early Days to 1953*, (London: Chatto and Windus, 1964), p.131.

Company. Upon realising the potential lime resources of the area, Marrapodi set up a lime kiln at Chinika in Matero Township. This provided the settlement with its first industrial enterprise.<sup>22</sup> Marrapodi was until 1911 an operator of Limeworks at Kalomo. Other individuals who set up lime working kilns in Kalomo were Rosazza and Morton, who could not flourish because of the huge financial investment required. The Kalomo Limeworks hence collapsed. Marrapodi Limeworks produced 1120 tonnes from 1915 to 1916, and from 1918 to 1919, the kiln produced 3265 tonnes of lime.<sup>23</sup> The lime work was followed by a store, a hotel and other buildings. Gann's work therefore provides a synopsis of early industrial development in Zambia, and informs this study.

In relation to Gann's work, Richard Sampson's main contribution in '*So This Was Lusaakas*' is that Lusaka was founded as a European settlement without the provision for a large scale African population that was evident in the mining townships of the Copperbelt and Broken Hill (present day Kabwe) where the provisions of a large scale African labour force was a vital necessity.<sup>24</sup> Although the study focuses much attention on the early settlement patterns, and the planning for the development of a capital city, the study mentions some of the early industrial undertakings in Lusaka such as the limestone quarrying in the Chinika area. Sampson's work is important to this study in that it provides background information on Lusaka in terms of the local settlers, and the naming of railway sidings as well as the early industrial developments.

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<sup>22</sup> Gann, *A History of Northern Rhodesia*, p.131.

<sup>23</sup> UNZA, INESOR/30756.1, A.A Beveridge, *Notes on the History of the Chilanga District*, 1954.

<sup>24</sup> Richard Sampson, *So This Was Lusaakas: The story of the capital of Zambia to 1964*, (Lusaka: Publicity Association, 1959), p.11.

Relating to aspects of sustainability of industries because of the availability of natural resources and markets for the commodity produced, the works by J. L. Hanson,<sup>25</sup> Geoffrey J. William,<sup>26</sup> and Christopher M. Musampa<sup>27</sup> collectively provide this study with a detailed understanding of the factors that influence the location of industries. In terms of cement production, Hanson contends that in order to maximise the value of cement production, access to the market was an important indicator. Hanson further notes that proximity to raw materials was an important influence, especially where there were bulky, and formed a high proportion of the total cost of producing a commodity. This was the case in the late 18<sup>th</sup> and early 19<sup>th</sup> centuries when proximity to limestone fields was responsible for the siting of the main centres of cement industries in Britain.<sup>28</sup> In the case of Chilanga Cement Factory, the presence of limestone fields and the proximity to the railway line via at railway siding at Chipongwe was an advantage for the production and easy transportation of cement to the mines on the Copperbelt. Hanson's work provides this study with valuable knowledge and information on the linkages between industrial location and market structures.

Similarly William's work analyses the link between the physical environment and the historical evolution of the Lusaka area. William argued that much of the Lusaka belt was covered in calcium and limestone. This physical feature meant that natural resources needed in cement production were easily accessible over a wide area. The work sets a

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<sup>25</sup> J.L Hanson, *Economic Aspects of Industry and Commerce*, (London: Macdonald and Evans Limited, 1966), p.83.

<sup>26</sup> Geoffrey J. William (ed.), *Lusaka and Its Environs: A Geographical Study of a planned capital city in Tropical Africa*, (Lusaka: Geographical Association of Zambia, 1986), p.86.

<sup>27</sup> Christopher M. Musampa, 'Factors affecting the location of the Cement Industry in the Third World', MSc Dissertation. London School of Economics, 1986, pp. 9-12.

<sup>28</sup> Hanson, *Economic Aspects of Industry and Commerce*, p.86.

platform on which to appreciate the physical environment around Chilanga was a positive factor for the growth of the manufacturing industry in Lusaka.

Musampa focuses on the factors affecting the location of the cement industries in the third world with particular reference to Zambia's Chilanga Cement Factory. His central argument is that given the importance of cement in construction of infrastructure, the location of the factory was informed by a careful balanced appraisal of the market, raw materials and other technical and economic factors such as transportation, and labour. Thus, in terms of location, the most suitable area for cement factory was with readily available raw materials as outlined by Musampa's study.

In terms of the social, economic and environmental impact of industrial development, studies by scholars such as Andrei Simic<sup>29</sup> and Wilbert E. Moore<sup>30</sup> are important to this study. These studies collectively show that whenever communities experienced new developments such as industries, there was a likely shift from the traditional value systems as different people migrated to the new community in search of new economic opportunities.

The main argument advanced by Simic is that the era of industrial development worldwide was an era of social and cultural change. Through his work, Simic demonstrated how the ideas of trans-culturation affected the peasant Urbanites in Serbia when members of an agrarian society migrated to the city.<sup>31</sup> Notable changes were observed when the peasant community became urbanised following its migration from rural areas to urban

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<sup>29</sup> Andrei Simic, *The Peasant Urbanites: A study of Rural –Urban Mobility in Serbia* (Belgrade: Seminar Press. 1972), pp.1-5.

<sup>30</sup> Wilbert E. Moore, *Industrialization and Labor: Social Aspects of Economic Development*, (Ithaca and New York, 1951), pp.166-197.

<sup>31</sup> Andrei Simic, *The Peasant Urbanites*, p.3.

areas in search of money based employment. The new lifestyle resulted in profound psychological, social and cultural adjustments that had to be made in terms of language, dress code and eating habits. This study provides useful information on urban growth, development of industries and the accompanying economic and social changes in developing countries. It further speaks to our work as a platform on which to measure how much change took place when Chilanga Cement Factory was established, and how the lifestyles of the people was impacted upon.

Moore argues that the process of industrialisation was a process of social and cultural change. The spread of industrialisation was one of the examples of ‘cultural diffusion’ which was made effective as people from different localities travelled to the sources of employment.<sup>32</sup> Hence, the concept of acculturation developed with regard to contacts between different communities, characteristics that emerged as groups interacted, and the changes that resulted from this interactions. This analysis by Moore is also important to this study as it provides a platform to establish how the influence of outside communities, and changes in lifestyles contributed to the growth of Chilanga Township.

The research carried out by Syamsu A. Kamarrudin considers both the positive and negative effects following the development of Tonasa Cement Factory in Gresik, East Java.<sup>33</sup> The positive transformation included a shift from a typically agrarian economy to a money-based economy, changes in livelihood and demographic patterns. Negative transformations included deterioration in the natural environment such as air pollution, stunted growth of crops as well as general afforestation. The work by Kamarrudin

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<sup>32</sup> Moore, *Industrialization and Labor*, pp.178-179.

<sup>33</sup> Syamsu A Kamarrudin, ‘The Existence of Tonasa Cement Factory and its Impact to the Surrounding People in South Sulawesi, Indonesia’, *Tawarikh International Journal of Historical Studies*, volume 4 number 2, 2013, pp. 187-203.

contributes to our understanding of how cement factories in developing countries result in positive and negative changes in local communities.

Contributing to debate on the positive and negative impact of cement production processes among some local communities in South Africa, another scholar, J. Harley demonstrates that despite the social and economic benefits that arose from employment created by cement manufacturing factories on the surrounding communities, its production was also known to have multiple negative impacts on the environment and human health in both developed and developing countries.<sup>34</sup> Harley further argues that whilst cement manufacturing factories brought economic benefits in the form of employment and markets for local goods, local people normally failed to harness these opportunities due to limited experience, inadequate access to information and funding opportunities. Underdevelopments of local communities had, in some instances generated conflicts between them and cement manufacturing companies.

Steven Simukanga et.al<sup>35</sup>, and J. Akande and M. Idris<sup>36</sup> maintain that if properly coordinated, mineral exploitation for cement manufacturing has the ability to promote development in surrounding communities. This can be achieved through creating employment for local communities and building infrastructure such as road networks, schools, hospitals and housing units. Akande and Idris note that in Obajana District in the Oyo State of Nigeria, the setting up of a cement factory stimulated a wide range of business

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<sup>34</sup> J. Harley, 'Impact of cement kilns on the environment', Groundwork Briefing Paper, South Africa. 2007, [www.groundwork.org.za/Cement](http://www.groundwork.org.za/Cement). Date accessed: 10 October, 2015.

<sup>35</sup> S. Simukanga, S. Feresu, K Hicks and J. J. Cumbane, 'Progress On Air Pollution Issues In Southern Africa', Proceedings of the Second Regional Policy Dialogue on Air Pollution and its likely Transboundary Effects in Southern Africa, Maputo, Mozambique, (Maputo: Sable Press 2003). p.3.

<sup>36</sup> J.Akande and M.A Idris, 'Environmental Effects of Gemstone Exploitation in Ofiki, Oyo State Nigeria', *Journal of Science Engineering of Technology*, Number.12, (2005), pp.5858-5869.

activities hence increasing income for the local community. Therefore, studies by Simukanga et.al, Akande and Idris, although undertaken in different communities in Africa reveal that cement manufacturing if well managed has myriad of socio-economic impacts on the surrounding communities. This information is vital in appreciating the positive impact of cement manufacturing industries.

While Akande and Idris focus their study on the positive impact of the cement manufacturing processes in the Obajana district, T.A Busuyi, C. Frederick, and A.I. Fatai illuminate the negative effects of cement manufacturing industries on the same community.<sup>37</sup> According to their study, the lifestyle of some people around the cement manufacturing plant remained poor, characterized by inadequate education which resulted in high percentages of illiteracy levels. The case of the Obajana state showed that establishment of a lucrative cement manufacturing factory in a rural community did not guarantee improvement in the living conditions of the entire community. Thus, the aspect of corporate social responsibility was not always a factor when a cement manufacturing industry was established. Therefore, the non-involvement of the factory in improving the welfare of the surrounding community in which it is located slows down urban growth of those communities. This literature is significant in understanding the pace of development that took place at Chilanga Township in relation to the role that the cement factory played in accelerating or slowing down the growth of Chilanga Township.

Winmore Kusena, Nyashadzashe Shoko and Thomas Marambanyika have analysed the socio-economic impacts of cement production at the Sino-Zimbabwe on the Hozheri

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<sup>37</sup> T. A Busuyi , C Frederick, and A.I Fatai., ‘Assessment of The Socio- Economic Impacts of Quarrying and Processing of Limestone at Obajana, Nigeria,’ *European Journal of Social Sciences*, Volume 6, Number 4, 2008, pp.1192-1207.

community in Gweru.<sup>38</sup> According to their study, the Sino-Zimbabwe Cement manufacturing company transformed the social wellbeing and economic situation of the local community although at a very slow pace. Generally, the company improved health and sanitation, education, infrastructure and income for the local people. The cement company's initiatives partially reduced poverty in the community thereby contributing towards sustainable livelihoods. Although most of the households were impressed by the efforts of the company, poor co-ordination and selective implementation of its initiatives undermined equitable development in the area. The company's operations also disturbed socio-cultural norms of the society as their operations interfered with sacred places, enhanced immorality and introduced new diseases. The study by Kusena, Shoko and Marambanyika adds value to this study as it attempts to establish the effects of cement production factories on communities.

Jonathan Samuel's work highlights the negative effects of cement production on local communities. Among those noted were pollution generation, land degradation, destruction of wildlife and crops, and disruption of traditional values. In some cases such as in one community in Bangladesh, relocation of the local people was apparent.<sup>39</sup> These adverse effects in turn created social tension which disrupted family ties and community life, and sometimes caused economic inequalities. This was more common in areas where villagers were displaced from their agricultural land, their primary source of livelihood. Samuel's work is important to our study because it informs the research on possible negative impacts of setting up industries in localities where communities practice crop production.

Norman C Rothman's work noted that most of the studies on the industrial development in Zambia, and particularly on the Copperbelt, laid emphasis on the relative

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<sup>38</sup> Winmore Kusena, Nyashadzashe Shoko and Thomas Marambanyika, 'Socio-Economic Impacts of Cement Production at Sino-Zimbabwe on Hozheri Community, Gweru, Zimbabwe', *Journal of Sustainable Development in Africa, Volume 14, No.8*, 2012, pp.94-101.

<sup>39</sup> Jonathan Samuel, 'Towards a sustainable cement industry: Sub study 12, Contributions to Socio-economic Development', [www.wbcsd.ch](http://www.wbcsd.ch). Date accessed: 10 October, 2015.

influence of rural patterns in urban situations.<sup>40</sup> Outwardly, this was through observations of dress, eating habits and language use. Rothman's study focused on the development of Lusaka town during the colonial period. This was in relation to the evident social and demographic transformations such as the growth of townships, business activities, and the accompanying environmental challenges. Thus, it was evident that while agricultural activities were the main economic activities for most of the 'towns' along the line of rail, it was also in those areas where industrial development, urban growth and the resultant effects on the physical environment were recorded. This was when people began to congregate along those spaces for purposes of trade while others began to seek money based employment. Industries then thrived, and permanent settlement patterns were created. Rothman's study is relevant to this study because it demonstrates social and demographic changes as a result of the industrial development of Lusaka and the surrounding areas.

L.G Butler's work focuses on aspects of urban transformation and acculturation. Writing on Lusaka's African Community in Chilenje, Butler argues that Africans became urbanised after living in an urban area for some length of time, and consciously or unconsciously dropped into a pattern of living which for them constituted town living.<sup>41</sup> Butler demonstrates that the growth of industries around Lusaka paved way for the rise of urban areas. Therefore, whereas agricultural activities were the main economic activities for most of the 'towns' along the line of rail, it was also in the same regions where industrial development, urban growth and the resultant effects on the physical environment were

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<sup>40</sup> Norman, C Rothman. 'African Urban Development In The Colonial Period: A study of Lusaka, 1895-1964', PhD History Dissertation, North western University (1972) p.4.

<sup>41</sup> L. G Butler, 'A Lusaka African Community: Chilenje,' in W. V Brelsford(ed), *The Northern Rhodesia Journal, Volume III*, (Lusaka: Government Printers, 1959), pp.442-448.

recorded. This was when people began to congregate along those spaces for purposes of trade while others began to seek money based employment. Industries then thrived, and permanent settlement patterns were created. Butler's work is important to this study as it informs this work on early effects of industry and commerce on the lifestyles of native communities.

Wilma Sithabiso Sichombo Nchito's study analyses the growth of small towns in Southern Zambia focusing on the expansion of the most prominent economic sectors such as retail trade, transport, and generally the role of government policies in fostering growth of the smaller urban centres.<sup>42</sup> Nchito argues that urban growth was in phases, and was inadvertently affected by government policies. Furthermore, Nchito's study shows that the presence of large private sector activities contributed to the growth of urban areas as they acted as central places that offered higher order goods to their hinterland. On the whole, the study presents unprecedented geographical and historical baseline aspects of urbanisation in Zambia. The study by Nchito contributes to this study by demonstrating that growth of urban areas was in phases. The initial phase, it was the construction of the railway line which was a pull factor to the towns, while in the latter stage, it was the development of industries, and the accompanying economic activities.

In terms of urban growth of Chilanga Township, J. Clyde Mitchell's work provides good and detailed analysis on population dynamics.<sup>43</sup> Mitchell provides a conventional definition of towns and cities in terms of population sizes. Some statistical examples highlighted are categorised as small town with a population size of between 5,000 and

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<sup>42</sup> Wilma Sithabiso Sichombo Nchito, 'The Growth and Function of Urban Centres in Zambia: A Case Study of Mazabuka and Kalomo', PhD Thesis, University of Zambia, Lusaka, 2013.

<sup>43</sup> Clyde J. Mitchell, *Cities, Societies and Social Perception. A Central African Perspectives*. (Oxford: Clarendon Press, 1987), p.19.

20,000 or more people. The gradual rise in the population of the settlers around Chilanga area between 1921 and 1930 provides a basis for appreciating urban growth.<sup>44</sup> Mitchell further examines the political, economic and administrative factors which constrained residents in colonial towns by providing an in-depth analysis of various forms of migration, circulation of labour, and the effects of this on urban population. With particular reference to Zambia, Mitchell's work analyses aspects of demographic structure, economic conditions, ethnic associations and processes of assimilation.

Joy Host Kalyalya work which focuses on the development of Nakambala Sugar Estate is of relevance to this study as it deals with the impact of industrial development on social and economic change.<sup>45</sup> The study demonstrates how the establishment of a sugar plantation and factory shaped the lifestyles of the surrounding community in an urban setting. This was through the creation of employment opportunities, provision of basic skills, social services such as schools, a clinic, and recreational facilities for the local community. These services were significant in improving the standards of living of the Mazabuka urban community. In addition, long term benefits were through direct, indirect and induced forms of employment created in such allied sectors as the transport sector.

### **Research Methodology**

The study is based on primary and secondary data. The data was collected in three phases. The initial phase involved consultation of primary and secondary sources at the University of Zambia library's Special Collection division. The Special Collection division is a repository of rare books, special studies, government documents and reports, both

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<sup>44</sup> Mitchell, *Cities, Societies and Social Perception*, pp.116-118.

<sup>45</sup> Joy Host Kalyalya, 'A History of Nakambala Sugar Estate,' 1964- 1984, MA Dissertation, University of Zambia, 1988.

official and unofficial. Data consulted ranged from published to unpublished annual reports of the various government departments relevant to the study, and annual reports on Chilanga Cement Factory, parliamentary debates, technical, international and colonial reports. Other documents included factory and government memoranda, letters, reports, national development plans, economic reports, and unpublished documents such as seminar papers. Research was also conducted at UNZA- INESOR Documentation Centre, and the Zambia Environment Management Agency, ZEMA, formally Environmental Council of Zambia, ECZ.

The second phase involved data collection at the National Archives of Zambia in Lusaka. Among materials consulted there were government documents, correspondence between government officials and Chilanga cement factory Managers, extracts from newspapers, government gazettes, and Hansards.

The third phase entailed data collection from written sources and through oral interviews at Chilanga Cement Factory, and at the National Agricultural Research Institute, Mount Makulu in Chilanga. Data was also collected from an identified farming community in Chilanga, members of the public who were identified to have lived and worked for Chilanga Cement Factory and at the National Agricultural Research Institute for a considerable period of time. Furthermore, data was collected at Chilanga Police Station which is located next to the cement factory. Informants provided information on how the development of Chilanga Cement Factory affected livelihood patterns of the community in Chilanga Township in terms of growth of the township, changes to the natural environment, effects on crop cultivation, and the safety of the communities close to the factory. Old records from Chilanga and Mount Makulu clinics were also accessed to counter check the

frequency of ailments that were presumed to have been caused by the dust affluent from Chilanga Cement Factory.

Consent for participation in the study and to record the interviews were obtained from the informants beforehand. Hand-written notes and a voice recorder were used to capture responses. The recordings were transcribed and used as primary data. Data collected was analysed qualitatively, while research proceeded using the historical method which explains change over time.

### **Organisation of the study**

The dissertation comprises of five chapters. Chapter One is the introduction which sets the background to the study. The chapter also contains the problem statement of the study, literature review and the research methodology. Chapter Two examines the history of Chilanga Township and how the coming of the cement factory contributed to the early growth of the Chilanga population. The chapter also examines how the opening of Chilanga Cement Factory helped in creating a permanent labour force at Chilanga which led to urban growth and the development of infrastructure and other enterprises.

In Chapter Three, the study examines the impact of Chilanga Cement Factory on the growth of Chilanga Township between 1965 and 1995. The chapter explores some of the main developmental projects that were spurred around Chilanga Township as a result of the existence of the cement factory. Furthermore, the chapter discusses the main community projects that the factory supported around Chilanga area and in some outlying areas. This chapter also discusses the programme of Zambianisation at the factory which was instrumental in enhancing African labour stabilisation.

Chapter Four investigates the impact of the cement factory on the surrounding environment. The focus of this chapter is twofold. The chapter firstly focuses on the early years of the cement factory activities to 1964, and secondly, it focuses on the activities of the cement factory between 1965 and 1995. Chapter Five is the conclusion of the study. It reflects on the main outcomes of the establishment of the cement factory on the Chilanga community in terms of the growth of the township, the impact on the health of the people and on agricultural activities. The study argues that the establishment of Chilanga Cement Factory had a multiplier effect on other sectors around Chilanga Township.

## **CHAPTER TWO**

### **CHILANGA TOWNSHIP AND THE HISTORY OF CHILANGA CEMENT FACTORY TO 1964**

#### **Introduction**

This chapter examines the history of Chilanga Cement Factory and Chilanga Township from early times to 1964. The chapter traces the development of Chilanga area in terms of its indigenous communities in the pre-factory years. Thereafter, it discusses how the establishment of the cement factory in 1949 contributed to the growth of the Chilanga population by creating a permanent labour force. Furthermore, the chapter highlights programmes that the cement factory supported in its community such as development of infrastructure, and provision of social services like educational facilities, health care centres, and recreation facilities. It also discusses how the establishment of the cement factory resulted in indirect employment at the Chilanga police post and police camp, in the banking and postal services, and trading enterprises.

#### **Chilanga in early times**

The indigenous communities of Chilanga comprised the Lenje to the north and the Soli to the east. The survey by the Eccles Commission appointed by the Northern Rhodesia Government in 1943 showed that the local inhabitants of Lusaka, Chilanga and Kafue comprised eight ethnic groupings of which the Soli people

formed the largest and oldest group, as cattle owners and agriculturalists.<sup>1</sup> Similarly, when Marvin Miracle wrote on the emergency of African Commerce in Lusaka between 1954 and 1959, he noted that the dominant ethnic composition of Chilanga area included the Tonga, Sala, Lenje and Soli speaking peoples.<sup>2</sup> The Lenje were situated to the north and the Soli to the east. The Tonga speaking people were in the southern part and the Ila and Sala speaking peoples were on the western part.<sup>3</sup>

The area had demarcated sections not far away from the nearby village of another African ruler *Shinka Shinka*. The sections were graves sites of former ‘Asoli’ Chiefs, and were referred to as ‘tumuli’ by the Soli speaking inhabitants of the area. In addition, E.A Copeman used the local people’s narratives to justify that Chilanga area was first settled by the ‘*Soli wa manyika*’ speaking people, under an independent African ruler, *Kabwata*.<sup>4</sup> The Chieftainship today goes under the title of Nkomeshya. According to Statistical evidence, as at 1960, the Soli population was estimated to be at 24,192, while the Sala were at 4,105.<sup>5</sup>

In terms of economic livelihood, the main economic activity of the indigenous communities was subsistence agriculture. Among the major crops grown were many types of sorghum, known in the local Soli language as *chikama*,

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<sup>1</sup> NRG, *Eccles Report*, (Lusaka : Government Printers, 1943), pp.42-43.

<sup>2</sup> Marvin P. Miracle, ‘Apparent Changes in the Structure of African Commerce in Lusaka, 1954-1959’, in W.V Brelsford (ed.), *The Northern Rhodesia Journal*. Number 2, Volume V, (Lusaka: Government Printers. 1963), pp. 170-173.

<sup>3</sup> E.A Copeman, ‘Memories of Abandoned BOMAS, No. 10, Chilanga,’ in W.V Brelsford (ed), *The Northern Rhodesia Journal, Number II Volume III*, (Lusaka :Government Printers,1959 ), pp.139-141.

<sup>4</sup> Copeman, ‘Memories of Abandoned BOMAS, No. 10, Chilanga,’ pp. 139-140.

<sup>5</sup> Northern Rhodesia Government. African Affairs Annual Report For the year 1960, Annexure .pvii.

*kambyombyo* and *chingulu*. Two types of maize, *Kapetwa* (early maturing maize) and *Mbalomatenga* were also grown. Other crops included sweet potatoes, yams, groundnuts, pumpkins, gourds and a variety of other indigenous crops.<sup>6</sup> This was the case in most areas in colonial Zambia with basic shelter made from thatch, poles and ‘dagga’ for homes, and large maize fields surrounding them. Gann in his discussion on the History of Northern Rhodesia from early days to 1953 noted that by the late 1920s, African peasant farmers around the Chilanga and Mazabuka railway belt were already integrated in the market economy and were able to supply to the market grain and cattle in appreciable quantities.<sup>7</sup>

In line with the findings of the Eccles Commission Report on the types of soils of Chilanga, the 1930 land use capability survey undertaken by the department of conservation showed that the soils in Chilanga were able to support different agricultural activities.<sup>8</sup> The land use capability survey culminated in the compilation of several development plans including the acquisition of subdivision of a farm plot number 38A- 1880 on which the active limestone quarry was situated. The area around the quarry was classified to be most suitable for animal grazing and afforestation. Agricultural activities were concentrated in the areas further east and west of the land where the quarrying mines for the cement factory were to be located. The Northern Rhodesia Government ensured that it secured all mining rights over the

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<sup>6</sup> B.M Fagan, ‘A Collection of 19<sup>th</sup> century Soli Iron Work from the Lusaka Area of Northern

*of the Royal Anthropological Institute xc,ii,1961*, pp. 228-50.

<sup>7</sup> L. H. Gann, *A History of Northern Rhodesia: Early Days to 1953*. (London. Chatto and Windus, 1964). p. 222.

<sup>8</sup> NAZ, SEC 1/311, NRG, Ministry of Agriculture, Department of Conservation and Extension, 1950.

limestone deposits before the establishment of the cement factory.<sup>9</sup> Large tracks of land were also set aside for all future developments of the factory.

### **The History of Chilanga Township**

The development of Chilanga Township was in two phases. The initial phase was linked to the construction of the line of rail. When Jack Carruther, a mineral prospector visited Soliland in November 1902, he reported to Robert Corydon, the Administrator of North- Western Rhodesia, about the economic prospects of the area.<sup>10</sup> The colonial government encouraged white settlement in the Chilanga area. Settlement on a permanent basis commenced in 1905 when the construction of the railway line from Southern Rhodesia into Northern Rhodesia reached the area. Railway construction needed transport riders and contractors, and these mostly came from South Africa. Wilma S. Nchito's work demonstrates that with the construction of the railway line, people began to settle closer to the railway line and practiced subsistence agriculture.<sup>11</sup> In fact, the concept 'kunjaji' was used to depict transport, employment, trade, commerce and urban growth. The railway provided transport; communication and access to markets for the agricultural products. As the railway

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<sup>9</sup> NAZ, SEC 1/ 242, Limestone Rights at Chilanga: Report on Soils, Cement works and Sand Deposits, 1947- 1949.

<sup>10</sup> Richard Sampson, *So This Was Lusaakas*, (Lusaka: Publicity Association, 1956), p.1.

<sup>11</sup> Wilma S. Nchito, 'A Century of Urbanisation: Contextualizing Small Towns and Urbanisation in Southern Province'. Conference Paper at the 100<sup>th</sup> Anniversary of the Amalgamation of North- Eastern Rhodesia and North Western Rhodesia , 24<sup>th</sup>-25<sup>th</sup> August , 2011,( Lusaka, Zambia).p.5, also Wilma Sithabiso Sichombo Nchito, 'The Growth and Function of Urban Centres in Zambia: A Case Study of Mazabuka and Kalomo', PhD Thesis, University of Zambia, Lusaka, 2013.

extended along the way, loop lines and sidings were added at intervals of ten miles (or sixteen kilometres) wherever there was suitably flat land.

The Resident Engineer, F. S Townsend used the Southern Rhodesia concept where these railway points were given their official names of nearby chiefs or headmen.<sup>12</sup> Thus, the next siding after Chipongwe was named Lusaka in honour of headman Lusaaka of the Lenje speaking inhabitants who lived in a small village nearby. Although the next ten mile railway siding was at Lusaka, officials of the colonial Government were not very impressed with Lusaka, and established the first Boma at Chilanga, which was perceived to be a more attractive place to the south. Dickson Hobson argued that the setting up of a Boma at Chilanga was also favoured on a number of accounts. For instance, on the night in 1905 when the railway line reached Lusaka, lions impudently took some trek oxen from the transport wagons, an incident which was described as the worst place of such incidents.<sup>13</sup>

Evidence by E.A. Copeman also attests to the fact that the formation of Chilanga Boma dates from August 1905 when most of the area was transversed by N. G Wills, the Civil Commissioner for Mwomboshi and B.F Bishop the Assistant Native Commissioner for Mwomboshi.<sup>14</sup> Mwomboshi was about ten miles or twelve miles downstream south of Broken Hill near Chisamba, and it was a provincial

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<sup>12</sup> Dick Hobson, 'Portrait of Lusaka,' in *Horizon*, August, 1964. (Lusaka: Roan Selection Trust), p.16.

<sup>13</sup> Hobson, 'Portrait of Lusaka,' p.16.

<sup>14</sup> Copeman, 'Memories of Abandoned BOMAS, No. 10, Chilanga.' pp. 139-140. see also J.E ( Chirupula) Stephenson, Memories of Abandoned BOMAS, No. 16: Mwomboshi, in E.E Burke, *Index to The Zambia [Northern Rhodesia] Journal , Volume I- VI, 1950-1965*, (Lusaka: Government Printers, 1965, pp.71-72.

commissioner's station with several sub-Bomas under it. These were Kapopo, Mkushi, Feira and Chipawa.

When Wills returned to Mwomboshi, he left Bishop to build a 'wattle and daub' British Overseas Military Administrative Centre (Boma) near the Chilanga stream. The building of Chilanga Boma was completed in November 1905, and for some months, it was known alternatively as Chipongwe, Chipwalu or Chilanga, after two chiefs and the nearest perennial stream.<sup>15</sup> Chilanga Boma served as a sub-station of the Kafue and Zumbo Districts. The headquarters for Chilanga, Kafue and Zumbo was at Mwomboshi. Zumbo District was later renamed Luangwa District after 1906.<sup>16</sup> In 1907, a brick building was constructed on a hill, 3 miles east of the original site, and about half a mile west of the railway line. There were also some houses and one room was used as a post and telegrams office. Prior to the opening of the post and telegram office, the room was occupied by the Director for the gardens, a Mr. Hatchwell, and later on Sir Hubert Young an Official in the colonial government turned it into a summer house to which he could retreat from Government duties. It was therefore at Chilanga where the District Commissioner for native affairs of Lusaka was stationed.

In 1911, Chilanga was elevated from a Native Commissioner's station to that of a BOMA, and had an assistant magistrate as well as a clerk of court.<sup>17</sup> The assistant magistrate and the clerk of court presided over African courts and authorities. Among the African courts and authorities were Chiefs Mungule of the Lenje speaking people,

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<sup>15</sup> UNZA INESOR. 30756. 1, A.A, Beverage, 'Notes on the History of Chilanga District.' 1954.

<sup>16</sup> UNZA, INESOR, 30756.1, Beverage, 'Notes on the History of Chilanga District,' 1954.

<sup>17</sup> Graham and Halwindi, *Guide to the Public Archives of Zambia*, p.143.

Lilanda of the Bwera speaking people, Sichobo of the Sala speaking people, Undaunda of the Soli Shamifwe speaking people, Kabwata of the Soli Manyika speaking people, and Shikoswe Soli Malundu speaking people<sup>18</sup> Bishop occupied Chilanga Boma in 1907, and in 1914, he had risen to the position of Colonel. However, he was killed immediately after the outbreak of the First World War in 1914.<sup>19</sup>

Chilanga Boma was closed in early 1931, while the magistrate court was moved to Lusaka under the Lusaka Rural District Council.<sup>20</sup> The last District Commissioner was F.L Brown who was later elevated to the position of Chief Secretary. When Brown left Chilanga, he went to open a new BOMA at Chingola. W.V Brelsford, who at the time was a Cadet in the Northern Rhodesia Government, moved the Chilanga Boma office files into the new office on Cairo road in Lusaka. Thus, in the early years of European settlement in Lusaka, the colonial administrative centre of government was situated at Chilanga where the Boma office shown in the photography of figure 2.1, and a District Officer's House shown in figure 2.2 were constructed.

Figure 2.1: Photograph of the District Officer's House at Chilanga, 1930.

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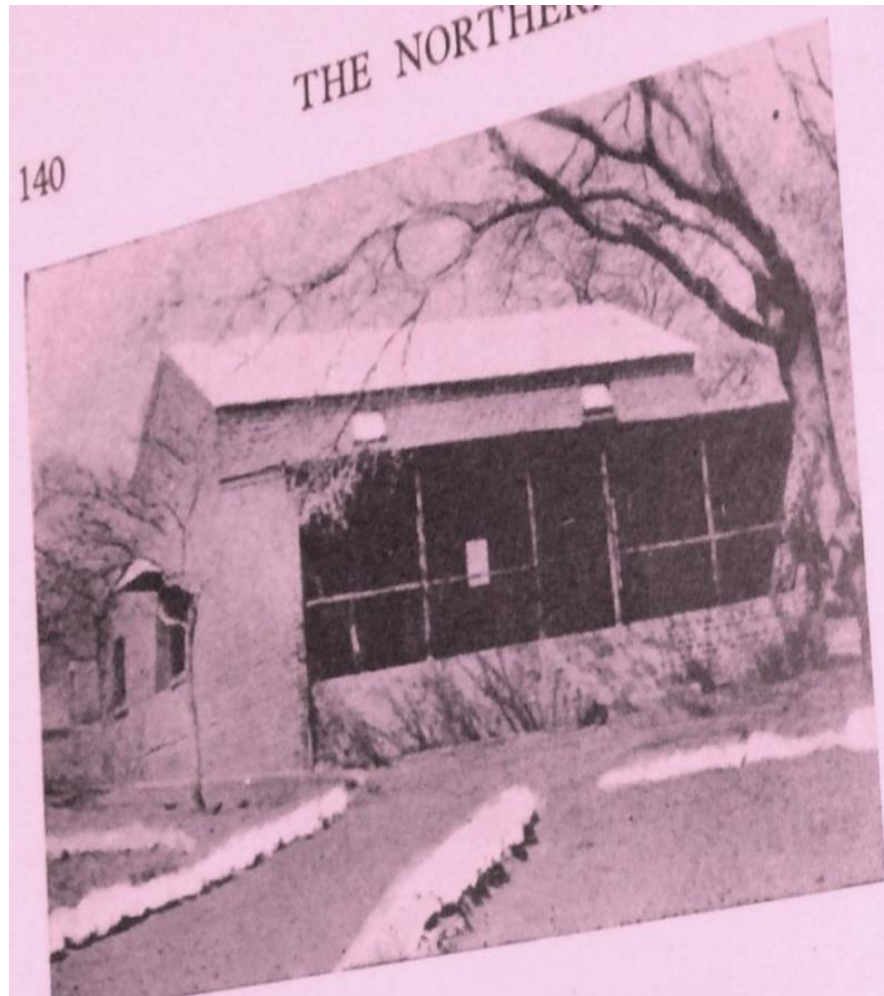
<sup>18</sup> UNZA INESOR, 30756.1, A. A Beverage, Notes on the History of Chilanga District, 1954.

<sup>19</sup> I. M Graham and B. C Halwindi, *Guide to the Public Archives of Zambia, Volume 1, 1895-1940*. (Lusaka: Government Printers), 1970, p.143.

<sup>20</sup> Copeman, 'Chilanga', pp. 139-140. Also John Collins, 'Lusaka: The Historical Development of a Planned Capital, 1931-1970,' in Geoffrey J William (ed.), *Lusaka and Its Environs: A Geographical study of a planned capital city in Tropical Africa*. (Lusaka: Geographical Association of Zambia, 1986). pp. 113-114, and NAZ, LUDC 1/1, Lusaka Urban District Council, Administrative History, 1953.



Source: E.A Copeman, 'Memories of Abandoned BOMAS, No. 10, Chilanga p.139.  
Figure 2.2: Photograph of the Boma Office, Chilanga, 1930.



Source: Copeman, 'Memories of Abandoned BOMAS, No. 10, Chilanga, p. 140.

### **Changes in the Size of the Population**

Population growth was an important element in the development of Chilanga area. During the formative years of Chilanga Township, there was a marginal increase in population as people moved from other regions to Chilanga. Although African reserves and trust land were reserved almost exclusively for African occupation, it was not government's policy to prohibit Africans from the urban and European

areas.<sup>21</sup> African men and women were occasionally engaged as domestic workers in European areas. A degree of urbanisation was thus as inevitable and provision of accommodation for Africans was made by local authorities. Information compiled in the Chilanga District note books shows that on African population rose between 1914 and 1939. As indicated in Table 2.1, the population of the Soli increased from 7,468 in 1914 to 8, 171 in 1921. In 1939, the population of the Soli was estimated at 10,333 in. During the same period, the population of the Lenje grew from 3864 in 1914 to 7517 in 1939.

Table 2.1: African population sizes between 1914 and 1939

<b>Ethnic Group</b>	<b>1914</b>	<b>1921</b>	<b>1939</b>
Soli	7468	8171	10333
Lenje	3864	6283	4517
Sala	1003	2537	3277
Bwera	474	429	637
Lambwa	397	840	n.a
Twa	110	151	n.a
Luba	n.a	155	n.a
Nchindu	n.a	58	n.a
Chewa (Yao)	n.a	64	n.a

Source: UNZA INESOR. 30756.1, A. A Beverage, Notes on the History of Chilanga District, 1954.

As the population of Africans grew, there was also a noticeable rise in the number of Europeans during the period 1914 to 1939. Compared to 1908 when there

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<sup>21</sup> NAZ, SEC 1/291, 'A comparative Survey of Native Policy of Northern Rhodesia, Nyasaland and Southern Rhodesia Central African Council, (Confidential Document)', Native Administration in Native Areas: Policy and Principles of Administration. Salisbury, 5 February, 1951. p.44.

were only 69 recorded Europeans in Chilanga, it rose to 353 in 1,914.<sup>22</sup> Most of these Europeans had come as fortune- seekers in search of minerals following the mineral revolution in the Union of South Africa. Out of this population, the highest numbers of settlers were the Dutch who numbered 238, and were followed by the British, who were about 115, while the rest were from other European countries.

In 1921 the population of Europeans stood at 904, comprising 288 British and 566 Dutch respectively. The Dutch population was higher owing to their migration from South Africa where most of them had initially settled, but left in the aftermath of the Anglo- Boer war in South Africa. Among the Dutch farmers were Gueldenhuis, Oosthuizen, Uys, Carinus, Spence, Rodgers, Botha, Helberg, Colliers, and Van Coller, while the British farmers included Gibbons, Robertsons, Wilks, Irvine, Cope, Brown and Mullen. Among Italian nationals were Malaveris, Marrapodi, and Torrend. Other farmers included M.E Neethling, W.A Turner, L.N Strauss, E.D Wienard and J.J Potgieter. <sup>23</sup> To get to the market depot at Lusaka, the farmers were served by the railway line sidings at Mapepi, (now Mapepe) and Lilayi.

The second phase of the development of Chilanga Township began after the establishment of Chilanga Cement Factory in 1949. In that year, Vaughan Jones, the Director of Game and Tsetse Control pressed for the formation of Chilanga Township.<sup>24</sup> The request was made to J. P. Murray, the Provincial Commissioner for

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<sup>22</sup> UNZA, INESOR 30756 .1, A. A Beveridge, Notes on the History of Chilanga District, 1954.

<sup>23</sup> NAZ, MAG 2/ 21/40 , Central Province General, 1950-1955, Lilayi Regional Conservation Plan in the Chilanga Intensive Conservation Area of Northern Rhodesia, 1955.

<sup>24</sup>NAZ, ZIMCO 1/2/5. Chilanga Cement Limited Board Papers, Minutes, ETC. Meeting nos. 49-50, 1952-1953, Minutes of the 49<sup>th</sup> Meeting of Directors held at the Registered Office at 2.20 pm, 23<sup>rd</sup>January, 1952. Declaration of Chilanga Township, 1952.

Central Province who convened a meeting on 7<sup>th</sup> November, 1950, with the Commissioner for Local Government, the District Commissioners for Urban and Rural Lusaka District, and for Broken Hill. Following that meeting, a planning Committee for the development of Chilanga Township was constituted by the Northern Rhodesia Government. The Committee held several meetings which eventually culminated in an elaborate township plan that covered 2,217 acres of land. The plan included the construction of residential areas, health centres, churches, schools, road networks, commercial trading facilities, provision of public health control services and all other future development plans for suitable for a township. Hence, Chilanga was declared a township in order to enforce the Township General regulations. The regulations dealt with matters such as public order and health and the construction of buildings. The draft map of Chilanga Township illustrated in appendices iii and iv enclosed Chilanga Estate referred to as cement residential area, and Game and Tse- Tse Control areas, as well as other notable developments show the boundaries of the Chilanga Township as:

Starting at Beacon S4 at the north-western corner of subdivision A of Farm No. 208a, the boundary followed the northern boundary at the sub division eastwards to beacon BR4 at its north eastern corner. From there, demarcations were drawn south-east wards along the southern boundary of farm no.403a 'Lilayi' to beacon B143 on the western edge of the Rhodesian Railways which was a 100 yards strip reserve. From the yard reserve, the boundaries extended in the southerly direction along the western edge to beacon B146e at the north-eastern corner of the Rhodesia Railways 'cottage reserve, then to beacon B148 thereon at the south-eastern corner of Farm No. 409a Chilanga. The area was approximately 2200 acres in extent.<sup>25</sup>

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<sup>25</sup> NAZ, ZIMCO 1/2/5. Chilanga Cement Limited Board Papers, Minutes, ETC. Meeting nos. 49-50, 1952-1953, Declaration of Chilanga Township.1952.

The map showed that any shops that were set up within the factory and the Game and Tse -Tse area were to be under Government control. In addition to the planned demarcations, it was argued that any person, European, Coloured or African could set up uncontrolled shops directly on the boundary of the demarcated area. However, when all those developments were taking place, Chilanga Cement Factory management held a different perspective regarding the declaration of Chilanga as a township, and its position was made known as early as 1950 following an article quoted in the 'Central African Post of Thursday June 8, 1950. The article read as,

... a new suburb with its own electric lighting system and piped water supply was coming into existence, and various recreation facilities were also planned to enhance the growth of the factory 'compound'. In another part of the estate, a well laid out African location was under construction, and was going to have an electric lighting system and water borne sewer system.<sup>26</sup>

Although the Management of Chilanga Cement Factory considered the declaration of Chilanga Township as welcome, they insisted that the development of the township was not beneficial to the factory since the factory was already established as a self-contained 'township which provided social services such as housing, health, education, roads, street lighting and sporting facilities within its area. <sup>27</sup>

Management further noted that the proposed location for the development of Chilanga Township was not suitable for the objectives for which Government required the development of the township. They argued that the location of the

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<sup>26</sup> *Central African Post*, 'Progress at Chilanga,' June 8, 1950, p. 3.

<sup>27</sup> NAZ, ZIMCO 1/2/3. Chilanga Cement Limited Board Papers, Minutes, ETC. Meeting no, 52, 1952-1953, Agenda Item 52/1, 'Chilanga Township.'

township was going to restrict the factory's future and planned development and that the new development was carried out exclusively in the interests of the Director of Game and Tse- Tse Control.<sup>28</sup> When the planning committee on the development of Chilanga Township presented the proposed signed sketch map of the township to the management of Chilanga Cement Factory through a government memorandum number LG Lus/60/27/2 of 3 April, 1951, signed by the Commissioner of Local Government, deliberations held at the factory prior to then were already against the proposed development.<sup>29</sup> This was clearly indicated in the response of 25<sup>th</sup> April, 1951 from the General Manager of Chilanga Cement Factory, C. Brazier, to the Commissioner of Local Government, T.C Colchester. The contents of which read,

...The feeling of our Directors was that as the Company had invested considerable capital to provide for both its African and European employees with model accommodation, tarred roads, electric lights, sanitation and piped water supply, making it in fact a self-contained development, there appears little reasons or benefits for the community (Chilanga Cement Factory area) to be included within the proposals under reference. In the case of the African location, we are providing hospital accommodation, a beer hall, electric light for each house, churches of several denominations, recreational facilities and a modern sewer disposal plant and water borne sewers which were not yet installed in Lusaka. Under the circumstance, our Board felt that whilst willing to co-operate in any practical manner, e.g. the distribution of electric lights outside our boundaries, they could not accept the proposal for incorporation within the terms of reference. Therefore, Chilanga Cement Factory wished to be excluded from all discussions on the subject.<sup>30</sup>

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<sup>28</sup> NAZ, ZIMCO 1/2/5. Chilanga Cement Limited Board Papers, Minutes, ETC. Meeting numbers, 49-50, 1952-1953, 'Declaration of Chilanga Township.'

<sup>29</sup> NAZ, ZIMCO 1/2/5, Declaration of Chilanga Township, 1952.

<sup>30</sup> NAZ, ZIMCO 1/2/3. Chilanga Cement Limited Board Papers, Minutes, ETC. Meeting no. 52, Agenda Item 52/ 1 Chilanga Township, 1952-1953.

The correspondence and response from Chilanga Cement Factory effected the decision making process regarding the development of Chilanga Township. The Commissioner of Local Government opted not to reply to the letter from the Factory, and instead insisted that it was worth gazetting a public township which excluded the Chilanga Cement Works. Thus, Chilanga Cement Factory representatives were excluded from all planning activities related to the development of the township. By November 1951, the Deputy Director of Survey and Land, and a member of the Water Development and Irrigation Department were assigned to examine sites for construction of government offices and housing units for employees. It was only when the Provincial Commissioner for Central Province, Anderson Murray and the Director of Game and Tsetse Control Vaughan Jones met on 25<sup>th</sup> August, 1952 to finalise the declaration of Chilanga as a Township that the general manager of Chilanga Cement Factory was invited to the meeting.<sup>31</sup> On 24<sup>th</sup> November, 1952, Chilanga was officially declared a Township in exercise of the powers conferred on the Governor in Council by section 3 of the Township Ordinance, and Government Notice number 310 of 1952 of Northern Rhodesia.<sup>32</sup> The Clerk of the Executive Council, K. J Knaggs, signed the township declaration document, and the District Commissioner for Lusaka Rural District was appointed as the Local Authority of Chilanga Township.<sup>33</sup>

### **Development of Chilanga Cement Factory**

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<sup>31</sup> NAZ, ZIMCO 1/2/3. Chilanga Cement Limited Board Papers, Minutes, ETC. Meeting no 52, Agenda Item 52/1, 'Chilanga Township,' 1952 -1953.

<sup>32</sup> NAZ, ZIMCO 1/2/5. Chilanga Cement Limited Board Papers, Minutes, Meeting no. 49-50, 'Declaration of Chilanga Township', 1952-1953.

<sup>33</sup> NAZ, ZIMCO 1/2/5. Chilanga Cement Limited Board Papers, Minutes, Meeting no. 49-50, 'Declaration of Chilanga Township', 1952-1953.

Then known as Northern Rhodesia, the need to establish a cement factory in the territory was advanced by various individuals both inside and outside the Legislative Council (LEGCO) immediately following the end of the First World War in 1918.<sup>34</sup> In 1928 W.H. Fanstone, one of the Europeans who had served in the war and later settled in Northern Rhodesia attempted to start a cement factory at Chipongwe railway siding which was situated twenty six kilometres south of Lusaka.<sup>35</sup> However, the project was not successful because of the lack of high capital investment of £200,000 that was required. In addition, the product of cement had a low value in relation to its bulk, and therefore, any local manufacturer needed to be in a good position to compete favourably because of the huge financial investment that was required to set up the factory. Following that set back, Fanstone established a company called Excelsior Lime works began supplying lime for white washing, for purification of water in dams, dips and furrows.<sup>36</sup>

The colonial government attempted to meet the growing demands for cement by importing the commodity from Southern Rhodesia and the Union of South Africa. Cement was also imported from the United Kingdom through the port of Beira in Mozambique on the coastline of the Indian Ocean.<sup>37</sup> Despite all these efforts, the supply of cement was still not regular enough to meet the demands of the building

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<sup>34</sup>W.J Busschau, *Report on the Development of Secondary Industries in Northern Rhodesia*, (Lusaka: Government Printers), 1945. Also NAZ, SEC1/115, 'Plans for A Cement Factory near Lusaka,' *Bulawayo Chronicles*, 6 September, 1946.

<sup>35</sup> NAZ, SEC 1/115, Northern Rhodesia Government Advisory Committee on Industrial Development, May, 1948.

<sup>36</sup> 'W.H Fanstone, Excelsior Lime Works, Shimabala Siding, P.O. Box Kafue', *The Livingstone Mail*, Thursday, 21 May, 1942.

<sup>37</sup>NRG, Advisory Committee on Industrial Development, Second Report, January, 1947, p.5.

industry mainly because of the high import costs involved. For instance, the cost of importing a tonnage of cement in 1940 was equivalent to a high cost of £40 and that severely handicapped the development and scope of the building industry.<sup>38</sup> It was only after the end of the Second World War in 1945 and the subsequent formation of the Advisory Committee on Industrial Development that the establishment of a cement factory was discussed in detail. According to one Scholar called Alistair Young who wrote on industrial diversification in Zambia from pre-independence period, the exigencies of the war of 1939 to 1945 encouraged the growth of local secondary industries with efforts made to produce munitions in the workshops of the mines and the railways.<sup>39</sup>

Between March 1946 and January 1947, the Advisory Committee engaged a geologist W.G. Garlick from the Rhodesia Mineral Exploration Syndicate to examine the various limestone deposits within economic distances of the railway line.<sup>40</sup> Among the key areas that Garlick addressed was the reduced cost of transporting limestone, gravel and sand from the quarry to the factory. Limestone sites in both Ndola and Lusaka areas were investigated. The sites surveyed in Ndola included Chipembere, Mwatesi Valley, Ishiku, Kabundi, and Chitundu -Misundu as well as near the Ndola railway station. In Lusaka, Garlick examined deposits at Lilayi, Chilanga, Mapepi, Shimabala, and Matero. Following the study, Garlick concluded that for a combination of reasons such as long-term availability, suitability, and easy

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<sup>38</sup> Chilanga Cement Limited, *Annual Report for 1969*, (Ndola: Monterey Printing and Packaging Limited, 1970), p.11.

<sup>39</sup>Alistair Young, *Industrial Diversification in Zambia*, (New York: Praeger Publication, 1973), p.4.

<sup>40</sup> NRG, Advisory Committee, Second Report, January, 1947, p.1.

transportation, the limestone deposits at Chilanga which was fifteen kilometres south of Lusaka was the most promising. The Mapepi deposits were nineteen kilometres south of Lusaka, and the Chipongwe deposits were twenty six kilometres south of Lusaka, while the Shimabala deposits were thirty kilometres south of Lusaka.<sup>41</sup>

The other aspect that Garlick addressed was on transporting cement to the markets. The Northern Rhodesian Government engaged Peter Miller who owned a farm plot in Lilayi and had a railway siding connecting to the main Rhodesian Railway line at Lilayi siding.<sup>42</sup> Peter Miller also worked as a District Engineer for the Rhodesia Railway line company. In the early 1920s, Miller had acquired large tracks of land sold cheaply by the Northern Copper Company when the company could not find substantial copper minerals in the Lusaka belt. In 1928, Miller established the North-Western Rhodesia Farmers' Cooperative Society.<sup>43</sup> The Cooperative Society assisted in marketing maize that was grown by European Farmers.

The construction of the cement factory was appraised in 1946, and on 29<sup>th</sup> July 1949, it was commissioned as a joint venture co-financed by the Colonial Development Corporation (CDC) with 75 percent shares and the Northern Rhodesia government with 25 percent shares in the factory.<sup>44</sup> CDC was a statutory Corporation incorporated in the United Kingdom to provide development finance in British colonies. It was envisaged that the factory would lead to the establishment of other

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<sup>41</sup> NRG, Advisory Committee, Second Report, January, 1947. p.14.

<sup>42</sup> UNZA, INESOR, 30756.1, A. A Beveridge, Notes on the History of Chilanga District, 1954.

<sup>43</sup> Geoffrey J. Williams, *The Peugeot Guide to Lusaka*, Lusaka: Zambia Geographical Association Occasional Study number 12, 1984, p.23.

<sup>44</sup> NAZ, SEC 1/244, Memorandum and Articles of Association of Chilanga Cement Factory: Finance and organization, 1948.

allied industries such as suppliers of cement packing bags, industries using cement products such as Turner Asbestos Products, transporters of cement and construction companies, among others.<sup>45</sup>

The Northern Rhodesia Government and the Colonial Development Corporation advertised for tender to build a cement factory in the territory. Four tenders were received through Henry Pooley, the Director of Development in Northern Rhodesia.<sup>46</sup> Having undertaken earlier studies to ascertain the availability of limestone for the manufacturing of cement, Pooley reported favourably on the need to establish a cement factory in Northern Rhodesia. The four tenders were from Richard Costain, Ole Grinaker, John Howard and John Laing who partnered with Andrew Roberts of Roberts Construction Company. The first tender from Richard Costain Construction Company, a British Company, quoted at £168,676. The second quote from Ole Grinaker (Private) Limited was at £211,327 while the third quote from John Howard and Company Limited was at £262,026, and the fourth tender from John Laing and Roberts Construction Company, was at £262, 842. All the four tenders were based on the same drawings, details and bills of quantities.

These early contractors were involved in the recruitment of African labour force such that a number of workers compounds around Lusaka town were named after them.<sup>47</sup> To date, these locations have maintained the same names. Among the

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<sup>45</sup> NAZ, SEC 1/244, Memorandum and Articles of Association of Chilanga Cement Factory, 1948.

<sup>46</sup> NRG, Advisory Committee on Industrial Development, Third Report, May 1948, pp.45-49.

<sup>47</sup> John Collins, 'Lusaka: The Historical Development of a Planned Capital, 1931-1970,' in William, Geoffrey J. (ed.), *Lusaka and Its Environs: A Geographical Study of a planned capital city in Tropical Africa*, (Lusaka: Geographical Association of Zambia, 1986.) pp.125-139.

worker's compounds are John Laing along Kafue Road, John Howard near Lilayi, Roberts now called Chawama Township and Butlers in Chilenje Township. Ole Grinaker first settled in South Africa where he set up a steel reinforcing and fixing company in 1934 called 'Concrete Construction Company'.<sup>48</sup> The company later expanded into Southern Rhodesia (Zimbabwe), Northern Rhodesia (Zambia), Botswana, Mozambique and Tanzania. Costain Construction Company was founded by Richard Costain. The company had a high construction profile both in the United Kingdom and abroad.<sup>49</sup> John Howard and Company, a civil engineering contractor was founded in 1927.<sup>50</sup> The company was responsible for the construction of the various infrastructures in the United Kingdom, among which the Channel Tunnel was a 50.5 kilometre rail tunnel linking the United Kingdom, and northern France. John Laing and Sons (Holdings) Limited was founded in 1927 and was also known to have constructed bridges and channels in the United Kingdom.

After evaluating the tenders, the lowest tender by Richard Costain Construction Company was selected to construct the cement factory with a design similar to the one that was in the United Kingdom at the time.<sup>51</sup> The construction of Chilanga Cement Factory began in 1949, and it was envisaged that the factory would open in 1950.<sup>52</sup> However, construction of the cement factory was only completed in June 1951. Production of cement begun in September 1951 using a single cement

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<sup>48</sup> Ole Grinaker, [www.grinaker-lta.com/about-us/history](http://www.grinaker-lta.com/about-us/history). Date accessed: 1 October, 2014.

<sup>49</sup> Costain Construction Company, [www.costain.com](http://www.costain.com), Date accessed: 1 October, 2014.

<sup>50</sup> John Howard and Company, [www.jhowardcivileng.co.uk](http://www.jhowardcivileng.co.uk). Date accessed: 1 October, 2014.

<sup>51</sup> NAZ, SEC 1/241 Minutes 'Minutes of meeting by the Director of Development on the establishment of the Cement Factory at Chilanga held on 21<sup>st</sup> January, 1948.'

<sup>52</sup> *Northern News*, 'Chilanga Cement Works Progress,' 7 February, 1950.

kiln with the capacity to produce 105 tonnes of cement per day.<sup>53</sup> At the end of 1951, the total cement produced was 58 000 tonnes. The year 1952 was the first full year of production and the Chilanga Cement Factory produced 161,918 tonnes of cement.

Limestone, the main raw material in cement production was mined at different quarries. The initial quarry was sited at the current location of the Chilanga Golf course which is adjacent to the factory.<sup>54</sup> This was known as Reserved Production, or RP site 1. After years of use and eventual exhaustion of the material, a decision for environmental resuscitation by creating a golf course which was restocked with wildlife was arrived at, and today, Chilanga Golf Club is an, active sporting, facility. Limestone was later mined at Chipongwe and Shimabala sites, and these were referred to as Reserved Production or RP site 2.

### **Labour Recruitment at Chilanga Cement Factory**

The production process of cement was a labour-intensive activity. The process involved quarrying gravel and limestone, crushing limestone, transporting raw materials to the factory for burning of limestone before grinding it into cement. In order to meet the increased demand for cement for the various construction projects, management of the cement factory recruited professional staff as well as support staff for both skilled and non-skilled tasks. Although year after year statistics of employment are scanty, analysis of available data showed an increase in

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<sup>53</sup> Chilanga Cement plc, Prospectus, 1995 (Ndola: Falcon Press, 1996), p.12.

<sup>54</sup> Chisengu Mdala, *Hydrological Investigation of the Shimabala Quarry and Its Catchment: Chilanga Cement Limited*, (Lusaka: University of Zambia, Geology Department, 1981),pp.1-3.

employment at the factory during its formative years. Labour was recruited from the United Kingdom, European settlers in Northern Rhodesia and from among local Africans. The workers at the factory were classified into three categories, namely, professional staff, semi-skilled and unskilled workers. The first cohort comprised factory administrators such as the general manager, personnel officer and recruiting officer. These were all non-Africans and were referred to as expatriates. The second cohort, also mainly non-Africans comprised professionals like accountants, technicians, works manager, engineers and mechanics. These were recruited from the United Kingdom and among local Europeans. The third cohort comprised general workers who were divided into semi- skilled and unskilled employees, and had Africans in the majority. This group included drivers, machine operators, general factory workers, medical orderlies, compound police, clerks, typists and telephone operators.<sup>55</sup>

The employment opportunities created by the cement factory were acknowledged by Sir Godfrey Higgins in 1951 then serving as Prime Minister of Southern Rhodesia. Higgins noted that the Chilanga Cement Factory project represented one of the most effective forms of development and employment in Northern Rhodesia.<sup>56</sup> By 31<sup>st</sup> December 1951, the factory had over 281 Africans employed in both semi-skilled and manual jobs. Beginning 1952, Africans were engaged in a considerable range of skilled and semi- skilled occupations and they

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<sup>55</sup> NAZ, ZIMCO 1/2/2. Chilanga Cement Limited, 1952, Board Papers, Meeting No 49-50, 1953.

<sup>56</sup> *Central African Post*, December 6, 1951 'Sir Godfrey at Chilanga', p.1.

received a wage according to their abilities. Depending on the category of workers, wages were either negotiated or paid on the basis of the minimum wage and conditions of employment. Generally, employees encouraged Africans to remain in permanent employment since there were few openings in industry and commerce available for Africans, the colonial government began to intensify its plans to establish industrial and vocational training institutes. This was a positive factor for Africans considering that there was ever increasing demand for permanent employment and labour stabilization. The Northern Rhodesia Government opted to intensify its plans for industrial and vocational training of Africans. With that new policy, Africans could, therefore, obtain the training and improve their skills.<sup>57</sup>

Africans were mainly engaged in non- skilled tasks at the factory as shown in Table 2.2. The bulk of African labour was in quarrying and general cleaning work. Expatriate staff included all skilled workers in administration and other line operations of the factory. For instance by the end of December 1951, the factory had employed 89 workers in quarrying alone.

Table 2.2: African workers categories at Chilanga Cement Factory, 31<sup>st</sup> December, 1951.

Section/category	No. of Africans employed
Quarrying	89
Preparation of raw materials (on shift)	19
Building and coal grinding (on shift)	09
Cement Grinding	13
Fuelling and Loading	12
Power generation	25
Repairs	04
Miscellaneous Haulage (Locomotive and crane)	00
Laboratory (on shift)	16

<sup>57</sup> NAZ, *Confidential Central African Council, Comparative Survey of Native Policy , Northern Rhodesia, Nyasaland and Southern Rhodesia*, Salisbury, 5<sup>th</sup> September, 1951.

Stores	03
General factory and Compound	25
Medical Orderlies	02
Compound Police	09
General Administration	
• Driver	
• Typist	
• Clerks	
Telephone Operators (on shift)	03
Office cleaners and messengers	25
<b>Subtotal</b>	<b>259</b>
Regularly Employed Staff	08
Bricklayers	09
Carpenters	04
Painters	01
Handymen	01
<b>Subtotal</b>	<b>16</b>
<b>GRAND TOTAL</b>	<b>282</b>

Source: NAZ, LSS1/4/24. Department of Labour and Mines, Conditions of Service, Chilanga Cement Factory, 1952.

The total employment return by the end of December 1952 was 612. Fifteen employees were Europeans recruited in the United Kingdom, while 42 employees were Europeans employed locally and 543 were Africans mainly employed as unskilled labourers. Notable positions were those of works manager, secretary, chief chemist, power station superintendent, production superintendent, chief engineer, chief burner, chief storekeeper, and compound manager. The Table 2.3 shows that most of the high profile jobs were held by employees recruited in the United Kingdom, while positions in operations were held by ‘skilled Europeans’ who were recruited in Northern Rhodesia. Although Africans were at the realm of the employment ladder as semi skilled painters, carpenters, bricklayers and laboratory assistants as well as unskilled general workers, the numbers of those employed continued to increase between 1953 and 1963. The reason for the increment was the

increased demand for cement following the formation of the Central African Federation in 1953. This was in view of the major construction projects that were envisaged to be undertaken.

The federal government of Rhodesia and Nyasaland agreed to construct a hydro- electric power station, hence the construction of dam walls at Kariba. The project of constructing the Kariba dam walls created a substantial demand for cement, which necessitated the construction of a second cement kiln in 1956. This second kiln had an annual production capacity of 158,000 tonnes.<sup>58</sup> The construction of the Kariba Dam walls reached its peak between 1957 and 1958. During those peak years, the demand for cement outstripped the supply available from the two kilns at the factory such that an agreement was arrived at, and signed between the Chilanga Cement Factory and three cement companies that were based in Bulawayo, Southern Rhodesia. These were the Premier Portland Cement Company (PPCC), the Anglo-American Corporation, and the British South African Company.<sup>59</sup>

Table 2.3: Employment Returns at Chilanga Cement Factory, January- December 1952.

<b>Category</b>	<b>Europeans from the United Kingdom</b>	<b>Europeans in Northern Rhodesia</b>	<b>Africans</b>
<b>Administration</b>			
General Manager	01	00	00
	01	00	00
Secretary	01	00	00
Assistant Secretary	01	00	00
Chemist	01	00	00
Production Superintendent	01	00	00
Power Station Superintendent	00	00	00

<sup>58</sup> NAZ, MWS /03/19/103, Kariba Hydro Electric Scheme, General, 1956.

<sup>59</sup> GRZ, Action Programme to Support the Dynamic Development of the Building Materials Industry in the COMESA Region, January, 1996.p.31.

Clerks	02	03	00
Typist	01	01	00
Telephone operators	02	02	00
Short Hand Typist	00	01	00
Stores	03	00	00
Compound Manager	01	00	00
Laboratory Assistant	00	02	00
<b>Works</b>			
Burners	00	04	00
Quarry Foreman	00	01	00
Millers	00	02	00
Crane man	00	03	00
Power Station	00	02	00
Mechanics	00	03	00
Locomotive Driver	00	01	00
Yard Foreman	00	01	00
Electricians	00	02	00
Fitters	00	07	00
Plumbers	00	01	00
Foreman carpenter	00	01	00
Despatch Foreman	00	01	00
Housing Supervisor	00	01	00
Apprentice Fitter	00	01	00
Boss Boys	00	00	16
Drivers	00	00	19
Laboratory Assistants	00	00	11
Police	00	00	06
Medical Assistants	00	00	02
Bricklayers	00	00	34
Carpenters	00	00	10
Painters	00	00	06
Unskilled General workers	00	00	438
<b>TOTAL</b>	<b>15</b>	<b>40</b>	<b>542</b>

Source: NAZ, ZIMCO 1/2/2, Chilanga Cement Limited, Board Papers, Meeting 49-50, 1953.

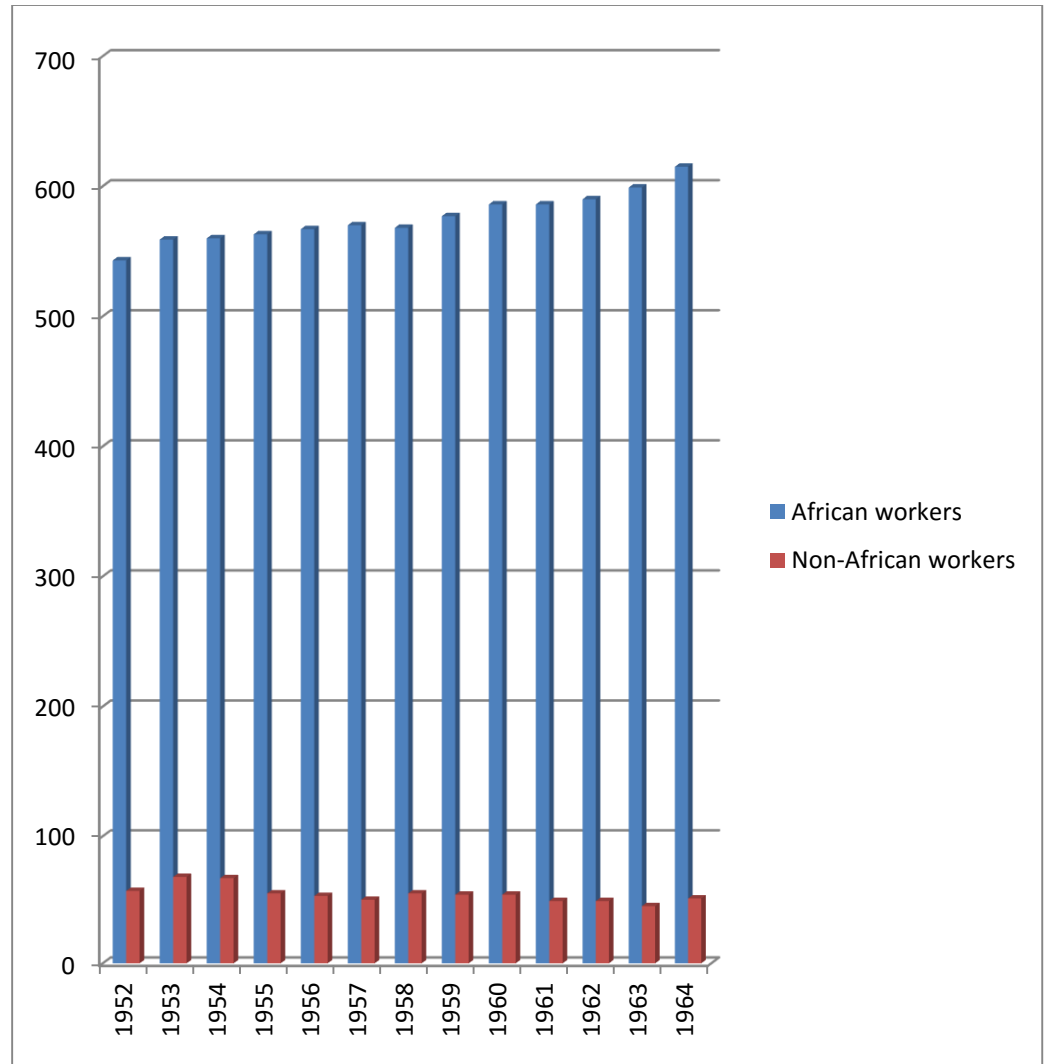
Employment record surveys undertaken in 1957, 1961 and in 1963 showed that there was a gradual rise in employment statics of Africans. For instance, in 1957, the number of Africans employed at Chilanga Cement Factory had risen to 570, while in 1960 there was a total of 586. The number rose further to 599 in 1963.<sup>60</sup> For

<sup>60</sup> NAZ,ZIMCO, 1/4/24. Chilanga Cement Limited Board Papers, Minutes, 1952-1963. Works Manager Report for December, 1963.

the non-Africans, the number of Europeans employed also showed a steady rise during the period, 1957 and 1961, while a reduction was recorded in 1963. Between 1957 and 1961, there were 50 and 54 non-Africans, while in 1963, this number declined to 45.

The fluctuation in the numbers of European workers at the factory between 1952 and 1964 as shown in the graph in figure 2.3 was linked to the political tension experienced at the height of the struggle for independence. Unsure of the outcome of the independence struggle, some Europeans left the territory. The graph also shows that the number of African employees at the factory was increasing because more labour was recruited to meet the increased cement production after new kilns were installed. The increase in cement production showed that there was a relatively high demand for cement for the construction of vital infrastructure as was the case during the construction the Kariba dam walls for Hydro electric power station between 1956 and 1958. Most of the Africans were recruited in labour -intensive work such as quarrying, firing the cement kilns and packaging of cement. In addition, more unskilled labour was required in general factory cleaning following the construction of workers housing units.

Figure 2.3. Employment statistics at Chilanga Cement Factory, 1952- 1964.



Source: Chilanga Cement Limited *Annual Reports*, Employment Statistics, 1952-1964

### **Development of Infrastructure and Growth of Enterprises**

The rapid changes that began to take place in the structure of African societies have been the most conspicuous social phenomenon within the African communities. When Chilanga was declared a township in 1952, it began to be transformed into a colonial settlement for the white settlers, expatriates and Africans. Different types on infrastructures were developed. Among such developments were

construction of housing units, education facilities, health care centres, trading places and a police post, among others.

### **Housing Units**

The construction of housing units for African employees was easily enforced because of the enactment of the Urban African Housing Ordinance of 1948.<sup>61</sup> The Ordinance made it mandatory for any employer to provide accommodation for both married and single employees. It was argued that building houses large enough to secure the decency of family life would promote labour stabilisation. Hence, by imposing an obligation on employers and local authorities to provide housing for Africans and their families, circulatory labour migration gradually gave way to stabilisation. Prior to the passing of the African Housing Ordinance, Africans were only allowed in urban areas for employment, and were, therefore, required to return to their villages at the expiry of the employment contract. An African location on the northern part of the factory, later renamed Musamba Estate, was designated for construction of housing units for African workers at the Factory. The houses were built in categories: single quarters, houses for married workers and houses for African supervisors who were referred to as capitaos. In 1963, additional provision for more water supply, ablution latrine facilities and access roads were made as the cement company feared being a subject of severe criticism if these amenities were not provided.<sup>62</sup>

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<sup>61</sup> NAZ, SEC. 1/1/ 320. The African Housing Commission Report, 2 September, 1968.

<sup>62</sup> NAZ, ZIMCO 01/1/103, Chilanga Cement Limited, 198<sup>th</sup> Board Papers, 1971.

On the eastern part of the factory were European staff housing units in a location that became known as Chilanga Estates. The housing units were also in categories for directors, managers, supervisors, and general support staff. Among the European housing units built was the 3P type unit which had a servant's quarter and a garage. These were detached houses. Another type was the semi-detached three bedrooms housing units as well as two bedrooms' semi-detached and detached housing units. The companies that submitted tenders to build the houses included the Lusaka Building and Transport Company at a cost of £3,349, A.J Tate and Company at £3,521 and, John Laing and Sons Limited at £3,633 per unit.<sup>63</sup> The lowest tender by Lusaka Building and Transport Company was awarded the contract to build the housing units.

In the surrounding area, the Northern Rhodesia Government also built houses for its employees. This was emphasized by the District Officer for Lusaka, P.I.N Hannaford, who in January 1959 advised that there were no decent housing for Africans in the township, and that provision for such was urgently required. <sup>64</sup> This was on account that 'shacks' were springing up all over the place, and if this was not going to be controlled, a shanty town was going to develop. To address the problem of African housing requirements, it was proposed that the construction of houses be addressed for the Ministry of Posts with 3 houses, Game and Tsetse Control Department with 40 for domestic servants, Turner's Asbestos Products with 15 housing units, the African Education Department with 10, the Chilanga Service

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<sup>63</sup>NAZ, MWS 3/ 18/ 01, European Staff Housing - Chilanga, 1963.

<sup>64</sup> NAZ, CNP 1/1/12, Local Government Townships - Chilanga, 1949- 1959.

Station with 6 houses, the Northern Rhodesia Police, with 2 and for the water and irrigation department headed by Mr. Longridge, with 12 housing units.

To further address the accommodation needs, the government built 70 housing units in the Game and Fisheries yards for both European and African workers. The housing units were for the expatriate employees of the National Parks and Wildlife Services (the fore runner of the Zambia Wildlife Authority, ZAWA). On the southern part of the road was the African compound called Game, while on the western side of the cement factory was the National Agricultural Research Station at Mount Makulu. Housing units were built to accommodate workers at the research station. A total of 300 housing units for African workers and 50 for European Staff were built.<sup>65</sup> In addition, the government through its Department of Public Works (PWD), engaged the Richard Constain Construction Company to built housing units for the Game and Tse-Tse and Mount Makulu Agricultural Research Station workers. By 1963, a total of 700 housing Africans and Europeans housing units were completed.<sup>66</sup>

### **School Infrastructure**

The provision of social services was also important to the growth of Chilanga Township. Managers at Chilanga Cement Factory built two schools, Parklands Primary School and Chilanga Factory School for Europeans and Africans, respectively. The proposal to build a European school was first submitted by the

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<sup>65</sup> NRG, Gazette, no. 21, 1960.

<sup>66</sup> NAZ, ZIMCO 1/02/6975. Chilanga Cement Limited Board Papers, 143<sup>rd</sup> meeting, 1964.

Provincial Commissioner of Central Province to the Director of Public Works in 1950.<sup>67</sup> The Provincial Sites Committee led by the Director for Game and Tsetse met on February 8, 1950 to examine the site which was provisionally selected by Dr. Kraft, the Acting Director of European Education in Northern Rhodesia. The construction of the school began in October 1951 when water became available for all construction works following the drilling of a borehole at the school by the Water Development and Irrigation Department. The cost of constructing the school was £7500. Initial buildings comprised two classrooms with ancillary buildings and two staff quarters based on the Silver rest School plan.<sup>68</sup> The target community were pupils from the Game and the factory Townships. Records show that by April 26, 1950, Chilanga European School had an enrolment of 6 pupils in primary school and one under age pupil in pre grade. It was envisaged that by 1961, there would be up to 30 pupils. <sup>69</sup>

The construction of the factory school began in 1963, and it was officially opened in 1964 as a small school called Chilanga Factory School with two classroom buildings.<sup>70</sup> Prior to the completion of the school buildings, the Chilanga Welfare Hall provided a sub- primary school for local Children and this is shown in Appendix VI. <sup>71</sup> The school was also using Chilanga Cement Factory postal address for all its correspondences. At inception, the school had 86 pupils out of which 42 were girls

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<sup>67</sup>NAZ, MWS /03/19/53, European School, Chilanga, 1950- 1953.

<sup>68</sup>NAZ, MWS/03/19/53, European School, Chilanga, 1950- 1953.

<sup>69</sup>NAZ, MWS/03/19/53, European School, Chilanga, 1950- 1953, 1953

<sup>70</sup> Chilanga Cement Limited, *Annual Report for 1969*, (Ndola: Monterey Printing and Packaging Limited, 1970), p.10. Also see GRZ, Ministry of Education, Chilanga Primary School Administration, 'History of Chilanga Primary', paper compiled in 2010.

<sup>71</sup> Chilanga Cement Limited, *Annual Report for 1969*.p.10.

and 44 were boys. After 1964, the school was handed over to the Ministry of Education, and was renamed as Musamba Primary School.

In addition to schools built by Chilanga Cement Factory, namely Parklands for Europeans and Chilanga Factory School for Africans, the Northern Rhodesia Government also promoted African education. Through its discussions with the Urban Advisory Council, a new African School, Chilanga Primary School was built in 1953.<sup>72</sup> The construction of Chilanga Primary School attracted school enrolments from number of children living in the cement works compound and from the nearby villages nearby. This development helped in addressing the weekly boarding systems where some pupils would be in school in Lusaka, and only returned to Chilanga at the end of the week. Therefore, the establishment of the school was a welcome development for the growth of Chilanga Township.

### **Provision of Health Services**

In addition to the construction of schools, the management of the cement factory also endeavoured provide health services to meet the needs of its employees, and the surrounding communities. This was through construction of health care services. It was also mandatory that health care facilities be provided because of the nature of work at the cement factory in terms of occupational hazards. Hazards could arise from drilling and blasting operations which produced dust

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<sup>72</sup> NAZ, CNP 1/1/12, Local Government Townships - Chilanga, 1949- 1959, 'Chilanga African School, 3<sup>rd</sup> September, 1953.'

emissions. Musamba Clinic was opened in 1957 for the factory workers and their families.<sup>73</sup>

The opening of Musamba Clinic supplemented the Chilanga Dispensary which the Northern Rhodesia Government established earlier in June 1955. Situated at the junction of the Great North Road (along Kafue road near the Game and Fisheries Offices), and the road to the cement factory, the dispensary was administered by the superintendent who was based at the African Hospital in Lusaka situated.<sup>74</sup> The dispensary provided health services to members of Chilanga community and also to surrounding communities. According to the report by the Provincial Medical Officer, the dispensary recorded an average of 400 patients per month during early 1956.<sup>75</sup> Improvements were made to the dispensary in 1957 when a clinical medical officer was appointed. The officer conducted fortnightly ante- and post natal clinics, hence detecting and preventing maternal related ailments. The officer was also accommodated within the Chilanga area about half a mile to the Dispensary. Later developments in the Chilanga area were the opening of a health centre at Mount Makulu in 1963. Thus, the opening of the three health centres, Musamba, Chilanga, and Mount Makulu was a positive indicator towards the growth of Chilanga Township.

### **Opening of the Chilanga Police Station**

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<sup>73</sup> Chilanga Cement Limited, *Annual Report for 1964*, (Ndola: Monterey Printing and Packaging Limited, 1965), p.13.

<sup>74</sup> NAZ, MH1/3/7, Tours by Chief Health Inspector. 'Tour Report, Chilanga Dispensary: 7/3/56', 1955-1963.

<sup>75</sup> NAZ, MH1/3/7, Tours by Chief Health Inspector. 'Tour Report, Chilanga Dispensary, 7/3/56', 1955-1963.

Another main development was the opening of the Chilanga Police station. As early as 1952, police presence in Chilanga Township had already been established. The premises were at the farm post. The buildings to house the police station were only completed in 1962, and it was officially opened in July, 1962.<sup>76</sup> Its catchment area was Chilanga Cement Factory, residential areas for the cement factory, for the Game and Fisheries department, and surrounding farms which were occupied by European farmers. The Police station also provided security services to the Agricultural Research Station. In addition to the station, housing units to accommodate Police officers were also built. The factory gave out five housing units located in Musamba Township to the police station, while 13 housing units were built by the Colonial government in the Police camp.<sup>77</sup> Other constructions included 2x 3 roomed African houses 18x 3 roomed African houses, 4 ablution blocks, a parade ground, and a cell block with accommodation for one married and one single officer.

### **Banking services and General Post Office**

Apart from the opening of a police station, banking services in Chilanga Township became available on 1<sup>st</sup> April, 1953. The services were provided through Barclays Bank (D.C & O).<sup>78</sup> The bank was open for one hour every Friday. As the population grew and other businesses developed, the bank began to operate on behalf of the Standard Bank of South Africa. In addition to provision of banking services,

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<sup>76</sup> NAZ, CNP 1/1/11, Local Government Townships - Chilanga, 1949- 1959. Police Station, Chilanga, Also Chilanga Cement Limited, *Annual Report for 1969*, pp.7.

<sup>77</sup> Chilanga Cement Limited, *Annual Report for 1969*, p.9.

<sup>78</sup> NAZ, ZIMCO 1/2/5 Chilanga Cement Limited, Board papers, Minutes etc, Meeting 49-50. 1952-1953. Minutes of the 49<sup>th</sup> Meeting of Directors held at the Registered Office at 2.20 pm, 23<sup>rd</sup> January, 1953. 'Declaration of Chilanga Township', 1953.

Chilanga Post Office was built. The need to open a Post Office in Chilanga was tabled in 1949 when representations were made to the Development Authority for postal and telephone facilities at Chilanga. In the following year, 1950 the Post Master General at Livingstone also raised that subject with the Provincial Engineer for the Public Works Department who was based in Lusaka. This was in view of the need to select a site for the proposed Chilanga Post Office. Following those deliberations, a tender notice which included the plan was written on 25<sup>th</sup> September, 1953 by the Commissioner of Works who at the time was V. Kenniff.

The notice was copied to the Provincial Commissioner at Broken Hill, the District Commissioner at Lusaka, and the Provincial Engineer Lusaka. The Post office building was designed to have a single storey of an area of 1200 sq.ft.<sup>79</sup> It was also centrally located for its different clientele from the Game and Fisheries Department, the Cement Works residences, the African Compound of the Game and Tsetse Department, and the water and irrigation Department. Other additions were housing units for the staff. The Post Office began operating in 1958 under the General Post Office mandate and it was headed by the Post Superintendent.<sup>80</sup> The Post office served as an important Institution for purposes of communication. The Post office was also important in promoting permanent settlement of non -Africans in Chilanga area because of a stable communication network.

### **Expansion of Agricultural activities**

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<sup>79</sup> NAZ, CNP 1/1/12, Local Government Townships - Chilanga, 1949- 1959.

<sup>80</sup> NRG, General Post Office, Chilanga Post Office Records, 1960.

Beyond the creation of direct jobs at the cement factory, as well as the opening of the police station and banking services, other new sources of employment and income-generating activities emerged. For instance, large scale farming activities in the Chilanga area were precipitated by the increased demand for food that was provided due to the opening of the cement factory. Agricultural products not only became an important source of food for the workers at the factory, but for the growing population around Chilanga area as well. Gann noted that in the Chilanga area, Afrikaner farmers cultivated on sharecropping basis, whilst Tonga cultivators also made use of traditional kinship obligations in cultivating for the market economy.<sup>81</sup> These cultivators became successful peasant farmers who utilized the new market for their maize grain, sorghum and groundnuts. It was along the railway belt where the first instances of economic competition between African and European growers in Northern Rhodesia emerged.

Afrikaners or Boers, who had earlier trekked northwards from the devastations caused by the war in South Africa, set up farming communities in the area. There were also former army officers, former British South African Police Officers, men from the railway construction, and retired members of the Company's Administration. Other Europeans came from the United Kingdom as fortune-seekers who then acquired land when the crown Government advertised and sold land at low prices. For instance, the price of land in Lusaka before 1910 was One Sterling and

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<sup>81</sup>Lewis H. Gunn, *A History of Northern Rhodesia: Early Days to 1953*, (London: Chatto and Windus, 1964), p. 221. Also NAZ, MAG 2/7/13. European Land Settlement. 1951-1956.

Six Shillings per acre for land within 20 miles of the railway.<sup>82</sup> This precipitated the settlement by Europeans. Other notable farmers were Scholtze Neil who set up the Chilanga Estates, and was referred to as 'Kachenjela' by the local people, while Funbricke also set up a farm which he named Funbricke farm.<sup>83</sup> David Van Roy acquired land in 1939 that covered an area of 2144 hectares. Van Roy called his farm Red Dust Valley where he cultivated Maize, Beans, and pigeon peas and kept poultry, cattle and sheep. Farmers also included S. Myburgh, Gueldenhuys, Oasthuizen, Uys, Spence, Helberg, Brown, Mullen and Torredi.<sup>84</sup>

Apart from cultivating maize and groundnuts, the European farmers also cultivated sunflower, Turkish Tobacco, Burley Tobacco cotton and vegetables. Through their cooperative, the North Western Rhodesia Farmers' Cooperative Society formed as early as 1928, these farmers began to make great improvements to their farming lots. Among the activities were construction of earth dams, storm drains and gully controls. In the 1950s, enterprising African farmers such as Roster Doudy Chindindindi and Mulikita also made use of the market for their maize grain, sorghum, millet, cow peas and groundnuts.<sup>85</sup> The provision of food supplements to Africa workers demonstrated increased market opportunities as a result of the cement production factory.

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<sup>82</sup> F. Carpenter, 'The Introduction of Commercial Farming into Zambia and its effects to 1940' in Robin Palmer (ed), *Zambian Land and Labour Studies*, volume 1, (Lusaka: 1973), p. 3.

<sup>83</sup> NAZ, MAG 2/7/7. Post War Settlements. 1941-1946, 1946.

<sup>84</sup> NAZ, MAG 2/6/31, Regional Planning Chilanga, 1957. Also NAZ, MAG 2/12/5. Department of Agriculture: Farms, Farm nos. 199a/A. T. F Williams and 459a/c, Chilanga Cement, 1959.

<sup>85</sup> Interview with Mr. Roster Doudy Chindindindi, Thandiwe Farm, Chilanga, 27 March, 2013.

## **Business Enterprises**

Chilanga Township also recorded growth as business enterprises began to operate around the township as well as in the European residential area and the areas that were designated for Africans. For instance, on the Southern part of the cement factory was the Turner Asbestos Products Limited Company (TAP) which made substantive use of Cement in manufacturing most of the asbestos products.<sup>86</sup> TAP Limited also manufactured corrugated, flat and rolled fibre cement products to primarily service infrastructure development programmes. The company was first set up in the 1940s, and the opening of Chilanga Cement Factory enabled the company to increase its production capacities since the major material that was used in its production was being produced locally. TAP was also a member of the Turner and Newell Group of Salisbury.<sup>87</sup> Other notable construction companies which were set up between 1953 and 1963 included the Commercial and Industrial Consultants of Africa Limited which was established in 1957, the United Portland Cement Company Limited opened in 1963, while the Amalgamated Construction and Constructing Proprietary Limited opened in 1963.<sup>88</sup>

Another business that thrived was establishment of trading areas in Chilanga Township. There were both first class trading area in the European residential area and second class trading area in the Africans locations shown in Appendix IV. The site that was selected for first Class trading was situated to the northern side of the

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<sup>86</sup> NAZ, ZIMCO 1 /2/7. Chilanga Cement Limited, Board Papers, Minutes etc, Meeting 63, 1954.

<sup>87</sup> *African Mail*, 23 January, 1961, p.15.

<sup>88</sup> NAZ, MCI 1/ 1/2, List of Construction Companies in Northern Rhodesia, 1953-1963.

Game and tsetse Department. The site was designed to have 12 stands and a Post Office and Telephone Exchange. The second Class trading area also had 12 stands, and was situated west of the Great North Road. In 1959, proposals to develop one butchery and general stores were advanced.<sup>89</sup> This was after a thorough market survey of the businesses in the area. The survey showed that the existing European population was 65 in the Game and Tse -Tse Department, Chilanga Cement had approximately 200 Europeans, while the Ministry of Education had 4 Europeans. It was estimated that the population would increase marginally in 1960. Therefore, the trading area was going to supply residents in Chilanga township, plot holders on the fringe, residents at Chipongwe, Police Training School in Lilayi which had been opened in 1955, residents at Mount Makulu, and local farms as well as Africans that were working and living in those areas.

Africans were also allowed to start business enterprise in the African residential areas, and this brought about cultural mixes as other ethnic groups began to settle in Chilanga. When Marvin Miracle wrote on the emergency of African Commerce in Lusaka, and around the Chilanga area between 1954 and 1959, he noted that the dominant ethnic composition of Chilanga area included the Tonga, Sala, Lenje and Soli speaking peoples.<sup>90</sup> Miracle based his analysis on the trends in African commerce which ranged from the market place which had an open –sided shelter, the commodities sold such as fish, vegetables, mushrooms, munkoyo and munkoyo roots

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<sup>89</sup> NAZ, CP 1/1/12, Local Government Townships - Chilanga, 1949-1964.

<sup>90</sup> Marvin P. Miracle, 'Apparent Changes in the Structure of African Commerce in Lusaka, 1954-1959', in W.V Brelsford (ed.), *The Northern Rhodesia Journal*. Number 2, Volume V, (Lusaka: Government Printers. 1963), pp. 170-173.

(traditional brew), Cassava roots, sugar cane, the changes in the organization of the trade which was based on the proportion of male and female sellers, and changes in the ethnic composition of vendors.

Beginning 1959, there was an increasing new group of African people around Chilanga. These included the Chikunda, Kaonde, Mambwe, Manika, Nsenga, and Nkoya, as well as the Chewa speaking peoples from Nyasaland (Malawi). Miracle classified the market traders by their age and gender, by their level of education ranging from Standard Sub-A, Standard Sub-B, Standard I to over Standard VI. Vendors were also classified by the number of commodities they sold and the amount of days they spent in the market places. This classification was useful in identifying the changes in behaviour patterns from a predominantly rural lifestyle to an urban lifestyle through acculturation and socialisation.

As the population increased, trade among Africans also became more organised such that they began to form Cooperatives. One such cooperative was the Chilanga Trading Cooperative situated at Ntowololo farm, and traded in general products like medicines, jewellery, stationary, bicycles, and clothing for both ladies and men. The Cooperative also had a restaurant and a tea room. Other small scale enterprises emerged among which included Lungu's Bakery, Mwachula Grocery, and the Chilanga Bazaar shop. These business enterprises around Chilanga contributed to the development of Chilanga Township from a predominantly rural and agrarian livelihood patterns to money based economy.

### **Chilanga Cement Factory and Population Growth**

The developments that took place in Chilanga Township between 1949 and 1964 such as employment opportunities, construction of housing units as well as health facilities had a corresponding rise in the population of both Africans and non-Africans. Although not on a very large scale like elsewhere in mega industrial zones and cities, like was the case in the Copperbelt mines, there were levels of urbanisation in the area. Since urbanisation was most related to population movements, it meant abandonment of dwellings in one area leading to overcrowding in another. The rise of sprawling shanty towns or sometimes referred to as squatter villages in the case of Freedom compound was a characteristic of urban growth.<sup>91</sup>

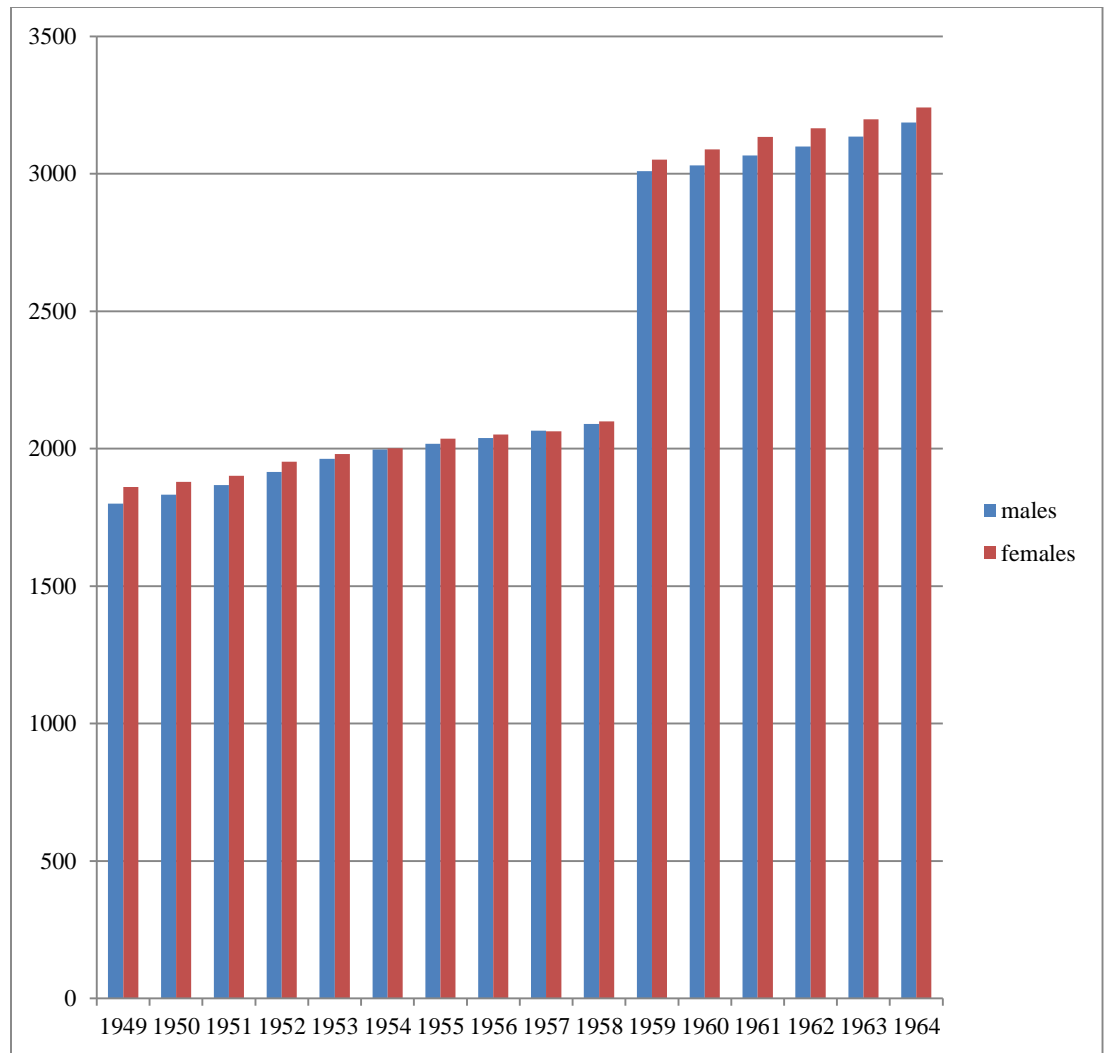
Apart from the natural increase in population as a result of child births, people from nearby areas such as Chilongolo, Namalombwe, and Kafue began to settle around Chilanga for the employment opportunities and accessibility to other social services.<sup>92</sup> It must also be understood that Chilanga Cement Factory fostered the employment in other sectors such as Agriculture and forestry, manufacturing, construction, brick making, transport and communication, education, health, domestic service, as well as police and security services. The graph in Figure 2.4 shows the population increase of Africans in Chilanga Township between 1949 and 1964

**Figure 2.4: Statistics of Africans in Chilanga Township by Gender, 1949-1964**

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<sup>91</sup> See Alan J F Simmance, *Urbanisation in Zambia: An International Urbanisation Survey Report to the Ford Foundation, USA*. Washington, pp.19-20.

<sup>92</sup> NAZ, CP 1/1/12, *Local Government Townships- Chilanga, 1949-1964*.



Sources: NAZ/ SEC. 1/1320. 'Stabilisation of African Labour.' Extract from the African Housing Commission Report, 2<sup>nd</sup> September, 1968

The graph shows that the population of Chilanga was rising gradually rising from 1949 when works on the cement factory began. By 1956, the population mark had reached over 2000 people. This was owing to the addition of a second kiln which resulted in a rise in employment levels. Africans were employed in loading and quarrying works. In addition, the construction of the Kariba Dam was at its peak by 1958, and that meant more cement was required as well as the manpower to load, the cement. At the same time, other indirect forms of employment also arose around

Chilanga area. Small scale traders emerged influenced by the opportunities created by the cement factory. For instance, Marvin Miracle wrote on the emergency of African Commerce in Lusaka between 1954 and 1959, where he noted that apart from the dominant ethnic composition of Chilanga area which included the Tonga, Sala, Lenje and Soli speaking peoples, new trends in African commerce encouraged other ethnic groups to migrate and establish permanent settlements.<sup>93</sup> Among the new comers especially beginning 1959, were the Chewa group from Nyasaland, the Chikunda, Kaonde, Mambwe, Manila, Nsenga, and Nkoya speaking peoples, hence a sharp rise in the population.

The new market opportunities contributed to the rise in population of the township. Open market traders sold fish, vegetables, mushrooms, munkoyo and munkoyo roots (traditional brew), Cassava roots, sugar cane, the changes in the organization of the trade which was based on the proportion of male and female sellers, changes in the ethnic composition of vendors, and by the amount of days they spent in the market places, by their level of education such as Standard Sub-A, Standard Sub-B, and Standard I. In addition, the opening of the National Agricultural Research Station at Mount Makulu also saw a wave of new comers employed at the station.

Generally, the gradual increase in the population of both women and men was a result of a number of factors highlighted such as employment opportunities at the cement factory, at the Game and Tse-Tse control unit, at Turner Asbestos

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<sup>93</sup> Marvin P. Miracle, 'Apparent Changes in the Structure of African Commerce in Lusaka, 1954-1959', in W.V Brelsford (ed.), *The Northern Rhodesia Journal*. Number 2, Volume V, (Lusaka: Government Printers. 1963), pp. 170-173.

Products Limited, at Mount Makulu, in the nearby commercial farms. Furthermore, improvements in health services, the provisions of accommodation and education facilities all contributed to population increase between 1959 and 1964.

### **Chilanga Cement Factory and Community Initiatives**

Another significant contribution by the factory was its engagement in community development programmes. Among the earliest engagements was the creation of the Chilanga Residents Association illustrated in an excerpt from the Chilanga News in Appendix XII. The Association was established in 1952 with a mandate to serve the social interests of the cement factory employees.<sup>94</sup> Membership to the Association was open to both males and females. Later, the Association gradually grew, both socially and financially and became a well-known social centre in Lusaka. Although it was originally established for company employees, the Association later transformed to include all members of the surrounding community.

Apart from the Chilanga Cement Residents Association, the cement factory also established a recreation club, known as Chilanga Cement Recreation Club. The Club provided facilities in both Chilanga and Musamba Estates. In Chilanga Estate, social and recreation services included a swimming pool, a Golf course, a Tennis court shown in Appendix X. The Bingo game was also provided, and it was a popular sport for gamblers. In Musamba Estate, a football team was formed. The Chilanga Heroes Football Club shown in Appendix XI comprised African players who were

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<sup>94</sup> Chilanga Cement Limited, *Annual Report for 1966*, (Ndola: Monterey Printing and Packaging Limited, 1967), pp. 21-22. Also Chilanga Cement News, 'Chilanga Builds Zambia' Issue No.1 April, 1973, p.10.

also employees at the factory with training sessions held on every Tuesdays, Thursdays and Fridays. By 1964, the other members of the Chilanga community had been incorporated into the team. Chilanga Cement Factory also operated the Chilanga Boating Club which was created on 31<sup>st</sup> July, 1962. The Club operated at Kariba Boating Club in Siavonga, and there, one building with accommodation for two families was erected and furnished at the Club site. In addition to the social amenities in the African Township was the opening of a Beer Hall. The opening and operations of the Beer Hall was in accordance with the Native Beer Regulations of 1952 which stated that the Beer Hall be situated within a radius of one mile from the office of the Game and Tsetse Control Department.<sup>95</sup>

Another main feature of Chilanga Township was the Lusaka Natural History Club formed in 1953. The objectives of the Club were to encourage interest in and knowledge of all branches of Natural History, conduct field research work, and to promote and protect the flora and fauna of Northern Rhodesia. According to Dr. A. Scott who presided over the meeting held on 17<sup>th</sup> April 1953, which culminated in the formation of the Club, there was need for a wider knowledge of the Territory (Northern Rhodesia)'s wealth and for a body which could act as a clearing centre for the work of individuals in various fields.<sup>96</sup> Among the notable activities at the Lusaka Natural History Club were the regular monthly meetings that were held at Chilanga's Longridge Dam. The main purpose of the meetings was to record

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<sup>95</sup> NAZ, CP 1/1/12, Local Government Townships- Chilanga, 1949-1964.

<sup>96</sup> W. V Brelsford, (ed), 'Lusaka Natural History Club', in W. V Brelsford (ed), *The Northern Rhodesia Journal*, Number 2, Volume II, (Lusaka: Government Printer, 1953), p.85.

information on plants, birds and small mammals of the estate.<sup>97</sup> Other projects that were discussed were the establishment of a Natural History Museum and a Nature Reserve that could provide a working ground for nature Historians. The Lusaka Natural History Club was the forerunner of the 'Munda Wanga' Botanical Gardens.

## **Conclusion**

This chapter aimed at providing the history of Chilanga area in terms of its indigenous communities, in the pre-factory years. The chapter then focused on the development of the Factory, and how it influenced the growth of Chilanga from a predominately rural setting to a sub-urban area, prior to the setting up of Chilanga Cement Factory. The setting up of Chilanga Cement factory was a major milestone in the industrial development and urban growth of both Chilanga Township and of the entire country.

The chapter also aimed at demonstrating developments that took place after the factory was established. The chapter argued that the setting up of Chilanga Cement Factory was a major milestone in the development of Chilanga Township. Through direct, indirect and induced employment, provision of health facilities, provision of education and adult skills training centres, the township began to expand in terms of population as more people began to settle in the Chilanga area. The construction of permanent housing units contributed to the growth of an urban setting

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<sup>97</sup>J.B and S Bottomley, 'Bird Photography at Chilanga', in W.V Brelsford (ed.). *The Northern Rhodesia Journal*, Number 6, Volume III, 1956, (Lusaka: Government Printer, 1957), pp. 497-508.

in Chilanga Township. In addition, the development of unplanned settlements such as Freedom Compound showed that people began to cluster around the cement factory, a new phenomenon which led to population increases. There was a shift from a predominantly agrarian economy to a money based economy as people were employed in the factory. The promotion of sporting and recreation facilities significantly contributed to the development of the Chilanga urban community. Therefore, at the time Zambia attained political independence in 1964, Chilanga Township existed as a self-contained township with good housing, education, health services and recreation facilities for both the European and African communities.

## **CHAPTER THREE**

### **CHILANGA CEMENT FACTORY AND THE GROWTH OF CHILANGA TOWNSHIP, 1965 -1995**

#### **Introduction**

This chapter examines the impact of Chilanga Cement Factory on the growth of Chilanga Township between 1965 and 1995. The chapter addresses Chilanga township growth factors that were precipitated by the cement factory. Among them was population increase as a result of creation of opportunities in Chilanga which supported labour stabilisation. Other growth factors were the main developmental projects that were spurred around Chilanga Township, and the main community projects that the factory supported around Chilanga Township and in other outlying areas. The chapter demonstrates that developments such as the creation of direct, indirect and induced job opportunities, and the provision of housing units to accommodate families contributed to the growth of the Chilanga Township between 1965 and 1995.

#### **Population Growth**

The post 1964 period marked another significant milestone in the history of Chilanga Cement Factory, and its contribution to the growth of Chilanga Township. Independence itself was the trigger for a period of growth which was employment led. Urbanisation continued to be a line of rail phenomenon because employment was heavily concentrated along it. In addition to the planned settlements that were established at the time Chilanga was declared a township in 1952, other unplanned settlements such as Linda and Freedom compounds evolved around

Chilanga as shown on the maps in Appendices I, III and IV. This propelled the growth of the Chilanga population. The cement factory was important on its own account, as a provider of employment and income, as well as a major supplier of building materials in the industrialisation process. As people became more settled, the population of employable labour also stabilised.

Another factor that contributed to the growth of the Chilanga population was the expansion of services offered at the central agricultural research station at Mount Makulu. Having been established in 1962, the Research Station provided employment opportunities as well as agricultural extension services to surrounding farming communities, thus creating a multiplier effect on employment both directly and indirectly. As explained in fore going chapter, other indirect forms of employment also arose around Chilanga area. Small scale traders emerged influenced by the opportunities created by the cement factory. The new market opportunities contributed to the rise in population of the township. The gradual increase in the population of both women and men was a result of a number of factors highlighted such as employment opportunities at the cement factory, at the Game and Tse-Tse control unit, at Turner Asbestos Products Limited, at Mount Makulu, and in the nearby commercial farms such as Schultz, (*Ka Chenjela*), Miller, Chindindindi, and Mulikita. Furthermore, improvements in health services at the factory, at game and at Mount Makulu, the provisions of accommodation and education facilities all contributed to population increase.

Table 3.1 highlights the population of Africans Chilanga Township who were in employment in different sectors by gender between 1969 and 1995. These

included cement factory and construction workers, workers at Turner Asbestos Products, workers at Mount Makulu Agricultural Research Station, at the National Council for Scientific Research was established, and in the nearby commercial farmers, police officers, teachers, bankers, postal services, and health personnel.

Table 3.1: Population of Africans in Employment by Gender in Chilanga Township, 1969-1995

Year	Males	Females	Total
1969	715	347	1,062
1975	1,021	861	1,882
1980	1,469	1,260	2,729
1985	1,732	1,566	3,298
1990	2,078	1,817	3,895
1995	2,573	2,160	4,733

Source: GRZ, *Zambia 2000 Census of Population and Housing*, Lusaka: Central Statistical Office, 2003.

Although the number of females was initially low, there was a marginal rise when improved accommodation was made available to support family life. Men began to settle with their wives and children. For instance, compared to 1969 when the number of females in employment was at 347, in 1995 there were 2,160 females employed in different sectors around Chilanga Township. Therefore, apart from the direct employment that was created at the cement factory, the construction sector also provided indirect employment in Chilanga. For instance, when the cement factory

advertised for the construction of a works canteen, changing room and twenty houses in Musamba Township, a number of construction companies tendered for the works.<sup>1</sup> In essence, this meant that whichever company was awarded the contracts, local people benefitted from the short term employment opportunities that were created. In addition, other contractors were sourced to build roads, level terrain slopes, culverts, topsoil, grass, dish and storm water drains and pathways, thereby contributing to employment opportunities around Chilanga. Industrious individuals also engaged in beer brewing as a way of supplementing income.

### **Recruitment and Retention of Labour at Chilanga Cement Factory**

In order to ensure that Zambian personnel were retained at Chilanga Cement Factory, following the attainment of independence in 1964, the policy on Zambianisation was pursued. This policy aimed at training and maintaining Zambian personnel in most job positions. Zambian workers who were previously employed as semi-skilled and unskilled employees were able to improve their skills through training. They could therefore take up more challenging and increasingly responsible positions in the factory. Hence positions of management and technical services were gradually being filled by Zambian personnel.<sup>2</sup>

In 1965, Zambians were appointed to higher profile positions, and they were eligible to serve on the Board of Directors of Chilanga Cement. Zambians were trained to take up management positions as directors, managers, personnel officers

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<sup>1</sup> NAZ, ZIMCO 1/2/86, Chilanga Cement Limited, 203<sup>rd</sup> Meeting held on 25<sup>th</sup> July, 1972.

<sup>2</sup> Chilanga Cement Limited, *Annual Report for 1972/73*, (Ndola: Monterey Printing and Packaging Limited, 1973), p.6.

and recruiting officers.Zambians also began to be trained as Accountants, Technicians, Engineers and Mechanics. Among the early appointees as members of the Board of Directors included Elias Andrew Kashita who was Zambia's first Civil Engineering graduate, Goodwin H. Mutale and M.M. Muyenga respectively.<sup>3</sup> Government made provisions for non-Zambian Directors to serve on the Board of Directors. These were appointed on behalf of the Commonwealth Development Corporation and Zamanglo Limited, a subsidiary of the Anglo American Corporation, which had shares in Chilanga Cement Factory as strategic partners.

Furthermore, in 1968,Zambians who had acquired necessary managerial skills were added to the Board of Directors at Chilanga Cement. Among them were E.S. Mutale, M. S. Siame, and J. D. Mazala. The year 1970 was significant for the cement company in that for the first time a Zambian by the name of I. H Muchangwe was appointed as the Board Chairperson of Chilanga Cement Factory where he served until 1976.<sup>4</sup> In addition E. S. Mumba was also appointed as a Director on the Board in the same year. Between 1975 and 1976, the company had three non-Zambians out of the seven directors on its board.<sup>5</sup> Honourable M. M. Tambatamba served as the Chairman, while M.M. Mwiinga served as the deputy Chairman. Other members of the board were. D.S Nkunika and D. C Mulaisho. The non-Zambian Directors were appointed by the Commonwealth Development Corporation. The recruitment and retention of Zambian personnel in the management positions at Chilanga Cement

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<sup>3</sup> Chilanga Cement Limited, *Annual Report for 1965*, (Ndola: Monterey Printing and Packaging Limited, 1966.) p.1.

<sup>4</sup> Chilanga Cement Limited, *Annual Report for 1971*, (Ndola: Monterey Printing and Packaging Limited, 1972), p.3.

<sup>5</sup> Chilanga Cement Limited, 26<sup>th</sup> Financial Report, 1975/76, p.1.

Factory continued in the 1980s, and in the 1990s, even up to the time of the factory was privatised in 1994, and thereafter.

From 1982 to 1986, Zambians that held the positions on the board of directors included, A.D Zulu as Chairman, D. D. Z. Chama, and N.G Silangwa as Board members, and at the same time, non-Zambian directors that were appointed between 1987 and 1990 included Herbert F Rose by the Anglo American Corporation in place of O. T Phillips who had resigned. Further, a Zambian, Anderson K Mazoka was appointed as a director on Behalf of the Anglo-American Corporation.<sup>6</sup> Training and recruitment were promoted on the basis of the vacancies that were created by either Zambianisation or promotions. Thus, there was need to fill these by properly qualified personnel.

Following the change of Government in 1991, the factory underwent rigorous transformations. This was on the premise of the new economic order which was pursued the new Government, the Movement for Multi- Party Democracy, MMD. The MMD government promoted a private sector-driven economy, which resulted in the privatisation of state-owned enterprises. Chilanga Cement Factory was privatised by October, 1994, and by April, 1995 its shares were listed on the Lusaka Stock Exchange Market. In terms of management, some Zambians were retained on the board of directors during the period of transition, while non-Zambians were also appointed. Among the Zambians were Anderson, K. Mazoka, J. M Mwangala, N.Shitima, C. M. Yolamu, and David Matongo.<sup>7</sup> An overview of Zambians and non-

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<sup>6</sup> NAZ, ZIMCO 1/2/484, Chilanga Cement Limited, Board Papers Quarter Ended 31<sup>st</sup> March, 1987. Minutes of the 261<sup>st</sup> Meeting of the Board of Directors held on Thursday 5<sup>th</sup> March 1987 in the Boardroom, 16<sup>th</sup> Floor INDECO, Buteko Place Lusaka, at 09.00 hours.

<sup>7</sup> Chilanga Cement Limited, *Annual Report for 1995*, (Ndola: Falcon Press, 1996), p.3.

Zambian who held positions on the Board of directors between 1965 and 1995 is shown in Table 3.2.

According to the Table, the first Zambian, I.H Muchangwe was appointed as to head of the Board in 1970. During that time Zambian, personnel had undergone training in management and administration, thus enabling them to execute the work effectively at the high levels of organisational administration. The status continued until 1980s, and after the 1991 national elections. After the Completion of the privatisation process, a non-Zambian was appointed as Chairman of the board of directors of the Cement Factory.

Table 3.2: Chilanga Cement Factory Board of Directors, 1965-1995

<b>Years</b>	<b>Zambians</b>	<b>Non-Zambians</b>
<b>1965 to 1969</b>	E. A. Kashita,	D. F Fairbarn ( Chairman)
	G. H Mutale	M.B Hofmeyr
	M.M Muyenga	J.Thompson
		F. R Wilson ( Chairman-1966)
		C. H Goodwin
		E.T.E Martin
		P. Attala
		A.S Sardanis
		M.H Barry
		C.P.S Allen
	R.F.H Hellings	
<b>1970 to 1974</b>	I.H Muchangwe (Chairman)	A.W.J Van Dorssen
	E.A Kashita	C.H Goodwin
	E.S. Mumba	P.J.R Leyden
	R.S.K Chiluwe	E.T.E Martin
	W. H. Banda	O.T Phillips
	B. G Moyo (Chairman -1974)	V. B Callender
<b>1975 to 1979</b>	M. M Tambatamba ,M.P ( Chairman)	M.A Boyd
	M.Mwiinga	J.G Bradshaw
	D.S Nkunika	O.T Phillips
	D.C Mulaisho	T.A Davidson
	Hon. R Chisupa, M.P ( Chairman1977)	
	L.M Chileshe	
	N.G Silangwa	
	L.S Muuka ( Chairman)	
	I.H Muchangwe	
	N.G Silangwa	
O. D. Z Chama		
<b>1980 to1984</b>	L. S Muuka ( Chairman)	J. Hoyle
	I.H Muchangwe	O.T Phillips

	N.G Silangwa	D. V Jones
	O. D. Z Chama	J.R Tucket
	A.D. Zulu (Chairman-1983)	
	D. D .Z Chama	
	S. Mutondo	
	P.O Simfukwe	
<b>1985 to1989</b>	<b>D. H Luzongo (Chairman)</b>	<b>O.T Phillips</b>
	D. Zulu	D. Canty
	F. Mwewa	E. Neal
	P.O. Simfukwe	F. Boag
	A. K Mazoka	H. F. Rose
<b>1990 to 1995</b>	<b>S.K Tamele (Chairman)</b>	<b>G.P Tyler</b>
	J. D Mtonga	A. Q Zafar
	M. Mwiinga	M. A Jeffries
	A.K Mazoka	N.C Nataraj
	F. Mwewa	R.E Beacham (chairman) 1994
	G. Simukoko	D.V. Johns
	E.D Mtamboh	A.G Anderson
	C.C Musonda	R. Morton
	J. M Mwangala	
	M.N Shitima	
	C. M. Yolamu,	

Source: Chilanga Cement Factory, Board Papers and Annual Reports, 1965-1995

The Table also shows that, new members were elected on the board, and others were not re-elected at the end of their terms while others resigned or withdrew. This was the case for some *Zambian* and non-*Zambian* personnel who served on the Board between 1965 and 1969, and between 1970 and 1975, as well as between 1990 and 1995.

Apart from the appointment of *Zambian* personnel to serve on the board of directors, Management of the cement factory continued to give priority to training its staff during the period 1965 to 1995. This was achieved through providing sponsorships both locally and abroad for various courses in the technical and administration positions of the organisation. Training and *Zambianisation* had improved significantly when four *Zambians* were sent to the United Kingdom for

Secretarial and Accounting studies.<sup>8</sup> Several apprenticeship programmes also continued in various fields within Zambia. In 1973, the programme of Zambianisation at Chilanga Cement Factory had reached the level where the number of non-Zambians was less than 50 out of 530 employees.<sup>9</sup> During that same year, one employee returned from the United Kingdom after completing a course in chemical analysis, while five students were undergoing training at the University of Zambia in various Engineering courses.<sup>10</sup>

By December 1977, the total manpower output at the factory was at 546, while a total of eight employees were pursuing full time studies at institutions in Zambia and abroad.<sup>11</sup> Courses pursued included electrical engineering, mechanical engineering, fitters, machinist, chemical engineering, and accounting, typing and nursing. Other training programmes included occupational safety and health, personnel management, supervisory studies, and advanced welding techniques.

Between 1979 and 1983 the factory employed 140 engineering graduates from the University of Zambia.<sup>12</sup> In 1979, 28 were recruited, and in 1980 26 engineers were recruited. Thereafter, 31 graduate engineers were recruited in 1981, while in 1982, 26 were recruited, and finally in 1983, a total of 29 graduate engineers were recruited. Among the engineers, those that studied mechanical engineering formed the largest group. They were followed by electrical engineers, then chemical

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<sup>8</sup> Chilanga Cement Limited, *Annual Report for 1970*, (Ndola: Monterey Printing and Packaging Limited, 1971.) p.1.

<sup>9</sup> Chilanga Cement Limited, *Annual Report for 1973*, (Ndola: Monterey Printing and Packaging Limited, 1974), p. 3.

<sup>10</sup> Chilanga Cement Limited, *Annual Report for 1973*, p. 3.

<sup>11</sup>NAZ, ZIMCO 1/2/278, Chilanga Cement 231st Board Meeting, 1977-1978. General Manager's Report for the quarter ended 31.12.77.

<sup>12</sup>NAZ, ZIMCO 1/1/107, Chilanga Cement Limited Corporate Plan, 1982- 1988.

engineers whom the factory needed in the area of cement production and chemical analysis.

Other personnel were trained in accounting. Job-on training also continued for the general workers whose work was carried out under supervision and could also be performed after a brief introduction to the job and was mainly manual in nature. General workers included cleaners in the mill house, gardeners, waiters, waitresses, sprayers and drain labourers. In addition, another category of workers called attendants were recruited. The attendants undertook supervised work, and were provided with on the job training of about three months. Job designations included transport attendants, mill attendants, shunters, extractors, loaders, carriers, and samplers, sanitation overseers, messengers, security guards, drill operators, canteen cooks and greasers.<sup>13</sup> The programme of Zambianisation continued so that by 1995, most of the skilled labour was recruited from Zambia.

Table 3.3 shows categories of core personnel between 1981 and 1988. These included Mechanical Engineers(ME), Electrical Engineers(EE), Chemical Engineers(CE), Chemists (C), and Accountants(A).

Table 3.3: Training and Zambianisation of Personnel, 1981- 1988

	Year	Year	Year	Year	Year	Year	Year	Year
<b>Positions</b>	<b>1981</b>	<b>1982</b>	<b>1983</b>	<b>1984</b>	<b>1985</b>	<b>1986</b>	<b>1987</b>	<b>1988</b>
<b>Mec Eng</b>								
Required	12	12	12	12	12	12	12	12
Actual	3	4	5	8	8	8	10	12
<b>Trainees</b>								
Required	9	8	5	5	3	2	1	2
Actual	2	6	6	5	3	2	1	2
<b>Elec Eng</b>								
Required	2	3	3	3	3	3	3	4

<sup>13</sup> NAZ, ZIMCO 1/2/484, Chilanga Cement Limited Board Papers, Quarter Ended 31<sup>st</sup> March, 1987.

Actual	1	2	2	3	3	3	3	3
<b>Trainees</b>								
Required	2	3	3	3	3	3	3	3
Actual	1	1	1	2	2	3	3	4
<b>Chem Eng</b>								
Required	4	4	4	4	4	4	4	4
Actual	1	1	1	2	2	3	4	4
<b>Trainees</b>								
Required	2	3	3	3	4	4	4	4
Actual	1	2	2	3	4	3	3	5
<b>Chemists</b>								
Required	4	4	4	4	4	4	4	4
Actual	2	3	3	3	4	4	4	4
<b>Trainees</b>								
Required	2	2	2	3	4	3	3	
Actual	2	2	2	3	4	3	3	
<b>Accountants</b>								
Required	5	5	5	5	5	5	5	5
Actual	1	2	2	3	4	4	5	5
<b>Trainees</b>								
Required	5	4	4	4	3	3	3	2
Actual	2	4	4	4	3	2	1	2

Source: NAZ, ZIMCO 1/1/107, Chilanga Cement Limited Corporate Plan, 1982- 1988

The programme of replacing non-Zambian personnel with Zambian personnel in both the management and technical fields continued up to 1994. In some of the position, the number of personnel that was required was far above the numbers of actual staff, hence the training programmes that were pursued to address the imbalance. For instance, in the year 1988, the factory attained 100 percent employment rate for mechanical engineers with a total of 12 compared to only 3 in 1981. Mechanical engineers were recruited at a higher rate in order to operate the installations of the factory. Similarly, highly qualified Chemical engineers were recruited because of the nature of the chemicals that were required in cement production. This was similar in the other field as shown in the same year. Zambians that were trained included accounting personnel, chemical engineers, chemists and

electrical engineers. The basis of training programmes was to ensure the factory self sufficiency of trained human resources to fill any positions that became vacant in case of resignation and promotions.

The training programme was also extended to support staff that included secretaries, purchasing and supply officers, marketing and general management officers. By 31<sup>st</sup> December, 1995, the board of directors, management, technical and ancillary personnel comprised mainly Zambian personnel.<sup>14</sup> In some cases where Zambians could not be sourced for highly specialised technical fields, non-Zambians were recruited. Hence, up to the time of its privatisation, Chilanga Cement Factory retained a small proportion of non-Zambians on contract and pensionable basis.

### **Renovation of Housing Units and Factory Schools**

In the post-independence period, the cement factory continued to improve its infrastructure around Chilanga Township. Among the significant projects was the improvement of housing units and schools infrastructure. Management at the cement factory rehabilitated buildings under the factory's care.<sup>15</sup> All the housing units in Musamba Township, including the Chilanga Factory School, were rehabilitated and painted. Parklands school was also renovated. New classroom blocks were added to both schools. From the initial two classrooms at the factory school, which was also known as Infant School, the factory constructed an additional 1x2 classroom block. In addition, three new houses were built at Parklands Primary School at a cost of

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<sup>14</sup> Chilanga Cement Limited, *Annual Report for 1995*, p.3.

<sup>15</sup>NAZ, ZIMCO 1/2/375, Chilanga Cement Limited, 251<sup>st</sup> Meeting of the Board of Directors, 1983.

K190, 000, while the football pitch at Musamba was also rehabilitated at a cost of K80, 000.<sup>16</sup>

The two schools, Chilanga Factory School and Parklands primary school, were handed over to the Government of Zambia through the Ministry of Education. Parklands Primary School retained the name, and was later upgraded to a secondary school. Chilanga Factory School was later changed, and it became known as Musamba Primary School. In 1964, the school had 86 pupils of which 42 were girls and 44 were boys.<sup>17</sup> The construction of new classrooms from five to fifteen by the Government of Zambia between 1968 and 1984 indicated that the population of Chilanga was increasing gradually. In 1984, Musamba Primary School was upgraded to a basic school, and had two grade 8 classes.

As these developments were taking place in Chilanga Estate funded by the factory, the UNIP government also embarked on some development projects in the area.<sup>18</sup> For instance, a new primary school named as Chilanga Primary School was constructed in 1967. In view of the growing population and as a way of providing a better working environment, the government built one staff house at the school at a cost of K4,000 in September 1971. Furthermore, the development of infrastructure by the Government was extended to Mount Makulu Township by constructing a 1x2 classroom block, one staff house and a latrine. The total cost for the project was

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<sup>16</sup> NAZ, ZIMCO 1/2 /375, Chilanga Cement Limited, 251<sup>st</sup> Meeting, 1983.

<sup>17</sup> GRZ, Ministry of Education, Chilanga Primary School Administration, 'History of Chilanga Primary,' compiled in 2010.

<sup>18</sup> NAZ, MAG 2/3/36, Lusaka District Development Committee, 1970-1975. Minutes of the Lusaka Rural District Development Committee meeting held in the BOMA Conference Room at 10 AM, on 16th September, 1970.

K4,352.50. In 1972, another 1x 2 classroom block was added to the same school, while at Parklands school, a 1 x2 classroom block had been completed by 1972. The two projects cost K1,000 and K5,000 respectively. The development of infrastructure in Chilanga Township was affected by the economic downfall that was experienced in the 1970s to the 1990s. The challenges were exacerbated by the fall in the copper prices on the international market, thereby triggering all other national sectors. Hence, during this period there were no major construction projects undertaken in Chilanga Township

Another significant project undertaken by Chilanga Cement Factory after the attainment of independence was the construction of new housing units in Musamba Township. This was in view of the anticipated increase in the number of Zambians who were to be employed by the factory. Twenty new staff houses were built in Musamba Township between 1971 and 1972 at a cost of K164, 000.<sup>19</sup> The construction of housing units created employment for the local people, thereby contributing to improved livelihoods of the community. During one of the meetings of the Board of Directors, it was reported that the construction project had drawn a lot of bidding. Twenty contractors who comprised Zambian companies were shortlisted.<sup>20</sup> They included the Federation of Building Societies limited of Lusaka, Prago Building Contractors, Mtondo Building Contractors, Costas construction, A.J Kabwe Constructions, Energoprojekt Co. Limited. The most detailed and reliable tender was from Prago Building Contractors who were awarded the contract to build

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<sup>19</sup> NAZ, ZIMCO 1/2/375, Chilanga Cement Limited 251<sup>st</sup>. Meeting of the Board of Directors, 1983.

<sup>20</sup> NAZ, ZIMCO 1/2/86, Chilanga Cement Limited 203<sup>rd</sup> Meeting held on 25<sup>th</sup> June, 1972.

the housing units. The work included construction, electrical installations and plumbing works. During the meeting of Directors which was convened on 27<sup>th</sup> March, 1973, it was reported that the work on the Musamba Housing was progressing according to schedule.<sup>21</sup>

Apart from these constructions, Chilanga Cement Factory continued to improve the accommodation needs of its workers and the community. On 27<sup>th</sup> March, 1987, it officially opened five new housing units at a ceremony that was presided over by Honourable B. Kapulu, serving as the Member of the Central Committee for Lusaka Province.<sup>22</sup> Meanwhile, the upgrading of housing units in Musamba Township also continued. Other developmental projects were also undertaken within Chilanga Township but outside the Chilanga Estate, through the Government of the Republic of Zambia. For instance, the Local Government District Development Committee Report of 1970 showed that a number of projects had been completed at Mount Makulu Research Station.<sup>23</sup> These included the electrical reticulation of some buildings at the research station and the construction of housing units for different categories of workers. The housing units included the following designs; 2 x 3V houses, 4x 4 AF houses and 10 x 3AA houses. Other housing units constructed were single quarters for unmarried workers, type 4 x2AA double units, and type 2x3AA

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<sup>21</sup> NAZ, ZIMCO, 1/2/138. Chilanga Cement Limited, Meeting Held on 29<sup>th</sup> June, 1973. 'Meeting of the 206 meeting held in the in the Boardroom at Chilanga Cement Limited on Tuesday 27 March 1973, at 09:00 hours.

<sup>22</sup> NAZ, ZIMCO 1/2/484, Chilanga Cement Limited Board Papers, Quarter ended 31<sup>st</sup> March, 1987.

<sup>23</sup> NAZ, MAG 2/3/36, Lusaka District Development Committee, 1970-1975, 'Minutes of the Lusaka Rural District Development Committee meeting held in the BOMA Conference Room at 10AM, on 16<sup>th</sup> September, 1970.

units which also had servant's quarters. In 1972, the Department of Veterinary Services also built houses to accommodate its workers. The housing units were 4 high cost housing, 5 Medium cost housing and 9 low cost housing respectively.

The infrastructure at the National Agricultural Research Station at Mount Makulu was also developed further. For instance in, 1974, the Government, through its Department of Public Works, constructed office blocks, agricultural experiments, and laboratory rooms. This was in view of the expansion of agricultural services and consultancy that was being undertaken. In addition housing units to accommodate employees of the Research station were constructed.<sup>24</sup> For instance, type 3 x 322 houses were completed at a total cost of K 18,000, 3x311 and 3x322 houses for the Department of National Seed Development and for the Food Storage and Preservation Units respectively were also built at a total cost of K34,010. Government also constructed one block of standard apartments and twelve houses for the National Oil seeds Development Programme. Furthermore, other houses for the Food Storage and Preservation Unit Programme as well as the Mount Makulu Research Officers were completed at a total cost of K84, 000 and K54, 000 respectively. During that same period (1974), the Government constructed 15 low cost houses for officers of the Veterinary Department at a cost of K55,000.

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<sup>24</sup> NAZ, MAG 2/3/36, 'Minutes of the Lusaka Rural District Development Committee meeting held in the BOMA Conference Room at 10.AM, on 16<sup>th</sup> September, 1970.

## **Improvements to Occupation Health and Safety Services**

Apart from the improvement to the housing infrastructure, there were also significant improvements of health services. This was achieved when Chilanga Cement Company Health and Safety Policy was enacted. The policy outlined the organisational arrangements that were introduced to ensure a safe and healthy working environment. These included the operational procedures that were to be followed as well as the responsibilities for implementing and monitoring these procedures. In order to oversee the implementation of the policy, health and safety committees were set up. The committees were inclusive of management, union and non-represented staff. The effectiveness of the policy implementation was measured against a reduction in the number of occupational accidents, the provision of protective clothing and its compliance, the provision of first aid posts and the recruitment of trained nurses and medical officers at the factory clinic.

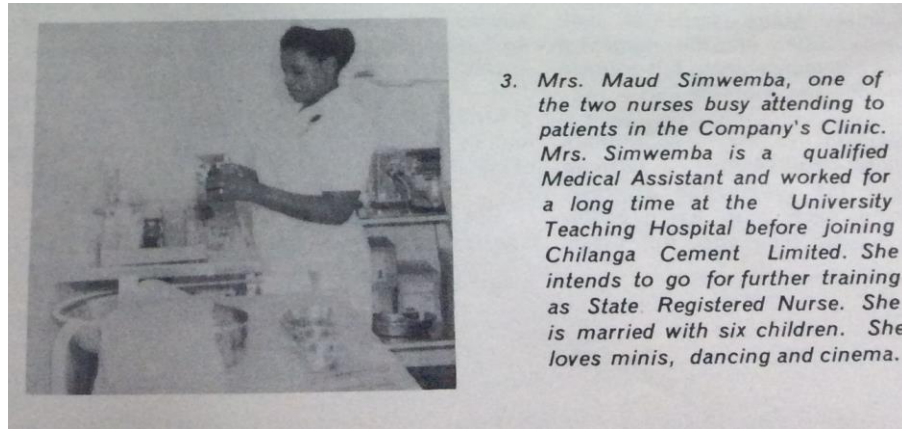
State registered nurses and occupational health nursing and safety, and accident prevention officers were employed to manage the factory clinic.<sup>25</sup> For instance, in 1973, Kabaso Kukupa was working as Principle Medical Assistant at the factory clinic, after undergoing training abroad in occupational health nursing and safety, and accident prevention. Additionally, Maud Simwemba in Figure 3.1 below was a qualified medical assistant who prior to joining Chilanga Cement Factory worked at the University Teaching Hospital. The improved health care delivery services at the factory clinic as demonstrated in appendix v where employees and their families could obtain health services were vital in the operations of the cement

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<sup>25</sup> Chilanga Cement Factory, *Chilanga Cement News, Issue No. 1, April, 1973*, pp.10-11.

factory owing to the high risk of occupational hazards. Work place accidents and ailments of minimal nature were hence treated at the local clinic.

Figure 3.1: Trained Personnel at Chilanga Cement Factory Clinic, 1974



Source: Chilanga Cement Factory, *Chilanga Cement News*, Issue No. 1, April, 1973,

The factory also significantly increased its health and safety awareness programmes for its employees as a way of preventing occupational accidents. In addition, the Factory continued providing free medical treatment to its employees and their families at Chilanga Factory Clinic. The Government of Zambia also improved services at Chilanga Dispensary and Mount Makulu Health Centre. This was achieved through the provision of qualified personnel and construction of houses for the medical officers at two health centres. Government built two staff houses at Mount Makulu Health Centre between 1970 and 1975, and further upgraded the Dispensary to a Health Centre.<sup>26</sup>

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<sup>26</sup> NAZ, MAG 2/3/36, 'Minutes of the Lusaka Rural District Development Committee meeting held in the BOMA Conference Room at 10 AM, on 16<sup>th</sup> September, 1970.

### **Improvements in the Police Services**

The period 1965 to 1995 also recorded a significant improvement in the Police services. Improvements included the construction of housing units for police officers. This was in view of the need to employ more staff as the township increased, in order to meet the security requirements of the area. For instance, Officer in Charge, Vwambanji Simusamba narrated that in 1969, fifteen houses for the police services were built by Government, while in 1990 Chilanga Cement Factory management donated five housing units in Musamba Estates to the Police service as part of its corporate social responsibility.<sup>27</sup> Apart from the increasing housing units to the Police service, there was also a general improvement in the provision of security around Chilanga Cement Factory. Africans were trained as dog handlers such as the ones in Appendix XIII, and as such they were equipped to patrol around vital factory installations. Training took place at the Government Police Training School in Lilayi.

### **Improvements in Scientific Research and Expansion of Businesses**

The improvement in scientific research and expansion of businesses was another significant factor in the development and growth of Chilanga Township. In 1967, the National Council for Scientific Research was established, and its offices were located in Chilanga near the factory and the National Agriculture Research Station.<sup>28</sup> The main objective of setting up the council was to ensure that all scientific

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<sup>27</sup> Interview with Vwambanji Simusamba Officer in Charge, Chilanga Police Station, Date of interview: February 1, 2013.

<sup>28</sup> NAZ, MAG 2/5/67, Monthly Reports, Mount Makulu Research Station, Directory of Scientific Research Organisations in Zambia, 1967-1971, 1971.

research programmes in Zambia were coordinated and promoted for purposes of the country's development. Some of the activities of the Council such as plant and pasture research were undertaken at the National Agriculture Research Station at Mount Makulu were livestock and Pest Diseases Research.

Besides the opening of the National Council for Scientific Research, agricultural activities expanded significantly around Chilanga area. This was because the farming community became acquainted with improved farming methods through information provided at the research station. Both small scale and large scale farmers cultivated maize, groundnuts and vegetables. The farmers were also involved in animal husbandry keeping livestock such as cattle, goats, pigs and sheep. The market for these products was available through both large scale and small scale entrepreneurs.

In order to serve the growing population of Chilanga Township, there was a rise in small scale enterprises in the area. Both the local people and new immigrants such as the Asian Community set up trading places. Among the enterprises was the Chilanga Bazaar. The local people also established the Chilanga Trading Cooperative which was located at Ntowololo farm.<sup>29</sup> The Cooperative traded in general products such as jewellery, stationary and bicycles, over the counter drugs, ladies and men clothing. It also operated a bakery, a restaurant and a tea room. Chilanga Township experienced further growth following the construction of a

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<sup>29</sup>NRG, Northern Rhodesia Gazette, no.40, 1950.

traders market by the Local Council Authority in 1970. The total cost for the construction of the market was K 3000.<sup>30</sup>

The increasing income generating activities was a pull factor in the establishment of financial institutions. The National Savings and Credit Bank was the first financial institution to be opened in Chilanga Township in the post independence period. Owing to the growing population, banking facilities would help the individuals save money. Hence, in 1975, the National Savings and Credit Bank opened a branch in Chilanga Township. Writing in support of this development, on 13<sup>th</sup> September, 1974, the acting chief agricultural research officer noted the following to the secretary of the Chilanga Ward Development Committee:

...I will be attending this meeting which I consider to be very important that will be addressed by the Member of Parliament, Chilanga Constituency and the District Governor Lusaka Rural, on 28<sup>th</sup> September, 1974. While we are awaiting for this important occasion, I would like you with other members to gather more information from companies, business men, private enterprises, farmers, civil servants, Villagers who would like to have a Saving Account Bank established at Chilanga....<sup>31</sup>

Other developmental projects were also carried out in Chilanga. Among them were the street lighting project between Game and Fisheries Compound and Freedom Compound, the provision of water facilities in Freedom Compound and the proposal to have a secondary school in Chilanga was also advanced. These developmental projects contributed to growth on an urbanised area.

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<sup>30</sup> NAZ, MAG 2/3/36, Lusaka District Development Committee, 1970-1975. *Annual Report for 1970.*

<sup>31</sup> NAZ, MAG 2/3/36, Lusaka District Development Committee, 1970-1975, *Annual Report for 1974.*

## **Chilanga Cement Factory and Corporate Social Responsibility**

One of the objectives of the factory was to contribute to worthy community projects in the locality. In the post-independence period, Chilanga Cement Factory managers continued to support community social programmes through their continued interaction within the Chilanga community and in other parts of the country. Among the most significant programmes were the establishment of the Concrete Cement Advisory Service, increased activities of the Chilanga Residents Association, and generally support to different community projects.

### **Establishment of the Concrete Cement Advisory Service**

In order to address common problems that consumers encountered in the use of cement products, the Chilanga Cement factory Concrete Cement Advisory Service Department was set up in 1969. The main objective for setting up the department was to provide technical assistance to the users of cement. The Advisory Service covered a wide range of topics in the fields of cement products and construction work, relating to problems experienced in use of cement products both within Chilanga township, and across Zambia. The Department also provided advice on concrete making, and also participated in the work of the National Council for Scientific Research. The setting up of this department was a significant development in providing technical support to major cement users in Zambia.

## **Chilanga Residents Association**

Apart from the Concrete Cement Advisory Service, the managers of Chilanga Cement Factory also supported the opening of an Adult literacy and Skills Training Centre.<sup>32</sup> The main objective of opening the Training Centre was to engage wives of the Chilanga Cement Factory workers in lifelong skills, as shown from the publications in the Chilanga Cement Magazine shown in Appendix XII. The Centre had different sections such as gardening, poultry, tailoring, cookery, sack-work and child care. The Chilanga Women Club which had members from among Chilanga Cement Factory employees and their families was one of the most active clubs. In 1966, membership was expanded to include other women and men within Chilanga Township. The membership also grew significantly to more than 50 times the original number.<sup>33</sup> A membership fee of Twelve Kwacha per person was introduced. This was recollected by Mary Mwenya who was one of the Club members:

When I joined Chilanga Women's Club on 20<sup>th</sup> June, 1966, it was a small club and consisted of a few members. No new members were allowed to join. I saw this and thought the club could not grow and expand if membership was restricted to a few people. In view of this it was decided to open membership to all Chilanga employees and their families.<sup>34</sup>

In September, 1966, the members embarked on a membership recruitment drive and as a result, new members were recruited. In the same year, the Club was supported with K50.00 as capital investment by Chilanga Cement Factory. The investment enabled the Club to buy three sewing machines. Two of the sewing

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<sup>32</sup> Chilanga Cement Limited, *Chilanga News, Issue no.1*, (Lusaka: 1973).pp.14-20.

<sup>33</sup> Chilanga Cement Limited, *Chilanga News, Issue no.1*, (Lusaka: 1973).p.20.

<sup>34</sup> Chilanga Cement Limited, *Chilanga News*, p.14. see also Appendix XII:

machines were ordinary type while one was an electrical type. Out of the proceeds of sewing, the group was able to purchase a wool knitting machine.

The Club also participated in public shows. In 1967, the Club participated in a public show at the Lusaka Civic Centre where they were awarded 1<sup>st</sup> prize in knitting, 2<sup>nd</sup> prize in dress making and 3<sup>rd</sup> prize in embroidery. Members of the Club who were identified as very skilful were employed as Assistants at the cement factory.<sup>35</sup> These were also assisted to undergo formal training programmes in subjects that were relevant to the Club's work. By 1973, the Club had acquired a bus that was used to transport materials and members to different places according to the activities that were being undertaken.

Apart from supporting an Adult literacy Centre, another major programme that Chilanga Cement Factory supported was the Chilanga Heroes Football Club which is shown in Appendix XI. The club was established during the early years of the factory, and in the 1970s, its performance had improved significantly because of the support from the Factory. The Football team was elevated to the First Division of the Lusaka District Amateur Football League.<sup>36</sup> The success of the team was attributed to its adherence to the training programme which had maintained a three days a week training schedule. The team underwent practices on Tuesdays, Thursdays and Fridays as was the case when the team was established in the early 1960s. In addition to sponsoring the Chilanga Heroes Football team, the factory also supported other sporting programmes such as Golf, Netball, Chess, Tennis and Darts, as well as athletics programmes in Schools.

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<sup>35</sup> Chilanga Cement Limited, *Chilanga Cement News*, p.20.

<sup>36</sup> Chilanga Cement Limited, *Chilanga Cement News*, p.23.

## **Support to Community Development projects and Programmes**

Since the factory was established in 1949, support to community programmes was one of the mandates of Chilanga Cement Factory. The support was in form of finances and pockets of cement. In an attempt to promote health education, the cement factory supported a number of schools athletics programmes. For instance, a number of appeals were approved in 1971.<sup>37</sup> This included a donation of K200.00 to Matero Boys Secondary School in Lusaka for building a Cultural Sports Centre, financial support of K100 to the Zambia Secondary Schools inter-provincial Athletics meeting that was held in Mazabuka. During the same period, the Management of Chilanga Cement Factory sponsored the participation of the Republican Vice President, the Minister of Health and four employees of Chilanga Cement Factory in the 'Walk against Malnutrition' event. The event was organised by the Lusaka Nutrition Group. A total of K60.00 was given to the organisers of the event. Other donations were the prize money of K50.00 for the winners of the Chilanga Golf Club Open tournament, and K250 towards the preparations for the 1971 National independence celebration events. Other organisations that benefitted from the support included the Zambia Boys Scout Association, Kafue Secondary School, St Vincent de Paul Society, Kabwe Agricultural Show Society, Zambia Hockey Association, and the Monze Provincial Agricultural Show Society. The Table 3.3 shows some of the beneficiaries of the financial support from Cement factory management that was gave out to communities in 1971.

Table: 3.4 Financial Support to Community Programmes, 1971.

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<sup>37</sup> NAZ, ZIMCO, 1/2/1974, Chilanga Cement Limited 198<sup>th</sup> Meeting, Board Papers, 26<sup>th</sup> October, 1971.

<b>Recipient</b>	<b>Amount</b>
Zambia Boys Scout Association,	K 500
Kafue Secondary School,	K 220
St Vincent de Paul Society,	K200
Kabwe Agricultural Show Society,	K 100
Zambia Hockey Association,	K50
Monze Provincial Agricultural Show Society.	K50

Source: NAZ, ZIMCO, 1/2/1974, Chilanga Cement Limited 198<sup>th</sup> Board Papers, 26<sup>th</sup> October, 1971.

Beyond these donations, the cement factory contributed to other community programmes by providing various financial sponsorships between 1971 and 1972.<sup>38</sup> For instance, an amount of K100 was provided towards the Zambia Secondary School's Inter provincial Athletics meeting which was held on 13<sup>th</sup> July 1971 at Mazabuka College. In the following year, 1972, Chilanga Cement Factory gave out financial donations to several community based programmes. Among them was the Chadiza District Agricultural Show Society which received an amount of K100; the Mission Medic Air Limited received an amount of K200, while K50 was donated to the Chipata Agricultural Show Society towards setting up of the new show grounds. Other beneficiaries included the Zambia Primary Schools Sports Association which received K230 towards preparations for the Inter schools Athletics programme, the Gwembe Show Society received K100 towards the preparatory works for the event, and Munali Secondary School received K100 towards renovating the football pitch. The managers of Chilanga Cement Factory also made a noble donation of K500 to

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<sup>38</sup> NAZ, ZIMCO 1/2/86, Chilanga Cement Limited 198<sup>th</sup> Board Papers, 203<sup>rd</sup> Meeting, 25<sup>th</sup> July, 1972.

the Zambia Council for the Blind and Handicapped. The donation enabled the Council to send two delegates to a conference that was held in Australia.<sup>39</sup>

Chilanga Cement Factory continued in its social responsibilities in its quest to improve the wellbeing of different communities within and beyond Chilanga Community. This gesture was apparent following the various donations that the factory made during the year 1973, as indicated in Table 3.5. Beneficiaries include the University of Zambia, the Zambia Red Cross Society, Child Care and Adoption Society of Zambia and the Zambia Amateur Athletic Association among others.

The Table shows that apart from cement and financial donations within Lusaka district, the cement factory extended its assistance to far flung communities such as Livingstone, Namwala, Sesheke, and even Mpika. Both the financial and cement donations, enabled communities to undertake small construction projects. This gesture was also a significant contribution towards the growth of Chilanga Township at the time of the national economic challenges experienced in the late 1970s and in the 1980s caused by the fall in the internal prices of the copper commodity.

Table 3.5: Financial Support to Community Programmes, 1973.

<b>Date</b>	<b>Recipient</b>	<b>Purpose</b>	<b>Amount (K)</b>
24.1.73	The University of Zambia	School Fairs	100
24.1.73	Zambia Red Cross Society	Erection of a National Training Centre	100
9.2.73	Kabwe Rural Agricultural Show Society	Improvement of New premises at Chibombo	50
6.3.73	Parklands School	Extension of the School	200
6.3.73	Chainama Hills Golf Club	Prize for winner of the Chilanga Cup during the Zambia Golf	50

<sup>39</sup> NAZ, ZIMCO 1/2/86, Chilanga Cement Limited 198<sup>th</sup> Board Papers during the 203<sup>rd</sup> Meeting of the Board of Directors, 25<sup>th</sup> July, 1972.

		Union's Southern Area Championship.	
9.3.73	African Methodist Episcopal Church	Construction of a Church.	25
5.4.73	Lusaka Cycling Club	Establishment of club	50
30.4.73	St Vincent De Paul Society – at Daniel Mission	Charitable Organisation	20
30.4.73	Child Care and Adoption Society of Zambia	Renovation of Society's nutrition Unit	200
30.4.73	David Livingstone Teacher's College	Building a swimming pool	100
7.5.73	Zambia Association of French Teachers	Operating costs	50
9.5.73	Rufunsa Rural council	Construction of a shelter	50.
10.5.73	Mpika District Agricultural Show Society	Organising the show	50
30.5.73	Namwala District Agricultural Show Society	Organising the show	50
5.6.73	Sesheke District Agricultural Show Society	Organising the show	50
5.6.73	Zambia Boys Scout Association	Sending 21 boys to different conferences	50
6.6.73	Zambia Amateur Athletic Association	Association's operating expenses.	200

Source: NAZ, ZIMCO 1/2/138 Chilanga Cement Limited 207<sup>th</sup> Board Meetings, 1973.

In 1977, cement donations were made to two recipients.<sup>40</sup> These were Silver Rest School along Great East Road and Chilanga Government Clinic. Silver Rest School received 200 pockets of cement with a total value of K350.00. The cement donation enabled the school to construct teachers' houses. The accommodation problem was so acute that some teachers were using partitioned classrooms. That donation and subsequent construction of housing units eased the problem of accommodation that the school was experiencing. Chilanga Government Clinic was given a total of 350 pockets of cement

<sup>40</sup> NAZ, ZIMCO1/2/255, Chilanga Cement Limited, 'General Manager's Report for the Quarter ended 30<sup>th</sup> June, 1977'.

valued at K612.50. The cement was used to construct an extension of the Clinic infrastructure to include a maternity wing.

Between January and September 1982, Chilanga Cement Factory supported a number of organisations and institutions through donations of cement for different projects. These donations enabled communities to undertake small construction projects in their localities.<sup>41</sup> These donations were non-political in nature, and recipients were mainly schools, health care centres, Agricultural cooperative societies and churches.

Table 3.6 lists some of the beneficiaries of cement donations for different development projects, during the first, second and third quarters of the year 1982. This donation of cement pockets was significant to the growth of Community projects in various ways. The gesture was also significant to the Chilanga Cement Factory as a way of building strong partnerships with its local consumers of its product, which in the long term contributed to the creation of sustained the lifestyles of those communities. It was also apparent that cement donations were made to communities beyond Chilanga Township. Among the beneficiaries were the Catholic Church in Kaunda Square Township in Lusaka, Chongwe Secondary School, Munali Secondary School, and Chainaman Hills Hospital. Beneficiaries were diverse and to noble causes.

Table 3.6: Cement Donations to Community Projects, 1982.

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<sup>41</sup> NAZ, ZIMCO 1/2/375, Chilanga Cement Limited 251<sup>st</sup> Meeting of the Board of Directors, 1983.

	Recipient	Cement Pockets
First Quarter	Chilanga Congregation, Chilanga	20
	Vincent De Paul St Mary's Church, Chilanga	20
	Catholic Church, Kaunda Square	20
	Chambulima Primary School	20
	Chilanga Government School	02
Second Quarter	Chelston Primary School, Lusaka	10
	Presbyterian Church	10
	Chongwe Secondary School	10
	Chilanga Women Institute	05
	Munali Secondary School	05
	Lilayi Police	15
	Chilanga Convent	20
	Lusaka South Barracks	20
Third Quarter	Mimosa Centre for the Handicapped	20
	Chamba Valley Primary School, Lusaka	10
	Tigwirizane Branch, UNIP	10
	Chipapa Ward 15, UNIP, Chilanga	10
	Chainama Hills Hospital- Lusaka	20
	African Methodist Episcopal Church, Lusaka	10
	Catholic Church, Kaunda Square	20
	Katuba MP, Chunga Bridge,	40
	INDECO Limited -Golf Competition Prize	20
	Wild Geeze Golf- Charitable Golf Competition	20

Source: NAZ, ZIMCO 1/2/375, Chilanga Cement Limited 251<sup>st</sup> Meeting of the Board of Directors, 1983.

## Conclusion

This chapter reflected on the impact of Chilanga Cement Factory on the growth of Chilanga Township between 1965 and 1995. The Chapter also discussed the role of local government in fostering the growth of the township. This was in terms of improvements in the social and economic wellbeing of Chilanga Township as was evidenced from the increase in population, from recruitment and retention of Zambian skilled labour. This was in line with the government policy of Zambianisation which contributed to labour stabilisation and settled communities. The improvements in the provision of social services such as renovation of housing units and the provision of health services was a significant factor of the impact of Chilanga Cement Factory on the growth of Chilanga Township.

Furthermore, the chapter addressed some of the main community concerns following the establishment of the Cement Concrete Advisory Services which provided information on the use of cement in construction. The Chapter demonstrated that the Cement Factory supported community projects in fulfilling its mandate of corporate social responsibility such as donations to noble projects beyond Chilanga. Among the programmes were athletic programmes, donations of cement and financial support to community and national programmes and events. It contended that there were other indirect and induced beneficiaries as a result of the establishment of the Factory. Chilanga Cement Factory provided employment in form direct, indirect, as well as induced to the local people. The expansion of enterprises enabled other Africans to engage in organised commerce by a forming cooperative.

## **CHAPTER FOUR**

## **IMPACT OF CHILANGA CEMENT FACTORY ON THE ENVIRONMENT, 1949 -1995**

### **Introduction**

This chapter explores the impact of the cement factory on the surrounding environment. While cement producing factories provide the required material for development and construction, the environmental effects of cement industry have been the focus of a significant amount of studies around the world, and as such, some standards and criteria had to be presented to control the pollutants made by cement industry. Environmental challenges in cement manufacturing projects primarily include air emissions, energy consumption and fuels, wastewater, solid waste generation and noise.

Apart from the positive social and economic benefits that accrued from the factory as discussed in the preceding chapters, the establishment of the factory also negatively affected the natural environment. The focus of this chapter is twofold. In the first section, the chapter discusses the activities at Chilanga Cement Factory from 1949 to 1964, while the second section focuses on the activities of the cement factory between 1965 and 1995. Each of the section discusses the impact of the dust fallouts, air emissions and chemicals from the cement production process on the health and safety of the workers and the members of the surrounding community. The chapter further discusses the impact of the dust emissions from the cement production processes on the natural nutrients of soils, as these changes subsequently affected crop yields around the Chilanga area. The chapter concludes with a

discussion the mitigation measures that the Cement factory introduced to control the levels of cement dust emissions on the natural environment.

In this study, environment refers to the sum of social, biological and physical or chemical factors that make up the surroundings of man. The natural environment is the relationship between man, plants, animals and the environment, where the environment is the sum of all these external influences. The environment constitutes both the living and non-living components. Living components include humans, animals and plants, while non-living components are water, soils and air. Environmental pollution is any discharge of material or energy into water, land, or air that causes or may cause acute or chronic detriment to the earth's ecological balance or that lowers the quality of life.<sup>42</sup> The primary environmental challenges in cement manufacturing projects include air emissions, consumption of high energy and fuels levels, discharge of water, generation of solid waste and production of noise from industrial production processes.

### **Basic Process of Cement Manufacturing at Chilanga**

The cement manufacturing process is an energy and resource intensive process with both local and global environmental, health and safety impacts.

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<sup>42</sup> United Nations World Commission on Environment and Development, *Our Common Future*, (New York: Oxford University Press, 1987), pp.111- 113.

The process of cement manufacturing at Chilanga Cement Factory began at the quarry where limestone was mined by blasting the earth rock. The initial quarry was at the site of the present day Chilanga golf course, which was referred to as 'Reserved Production Site 1'. In later years, when most of the rock at RP1 was exhausted, quarrying activities were carried out at Shimabala quarry, technically referred to as RP 2, and is shown in Appendix VII. After quarrying and drilling, the limestone rocks were loaded on trucks and transported by road to the factory where they were crushed in the crushers in preparation for milling, slurry making and production of the final cement. The initial factory at Chilanga was also built to use the wet track process where water was added during the production of the cement powder. The use of water produced a paste like material that was referred to as slurry.<sup>43</sup> The slurry was then dried and in order to achieve the desirable result, the wet track process required high temperatures to heat and evaporate the water content and all moisture.

Fire wood was the main sources of heat for the kilns. Coal was occasionally imported from Wankie in Southern Rhodesia. The need for self-sufficiency after the attainment of independence, and the politics of Rhodesia and the Unilateral Declaration of Independence of 1965 necessitated the need for coal mining in Zambia. Hence, coal mining operation was initially started in 1966 at Nkandabwe area in the north- east direction of Maamba. It was

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<sup>43</sup> Henry C. Mutafya, 'Chilanga Cement Plc, Chilanga Works, Environment Project Brief', 2000. p.7.

operating in the name of the National Coal Board of Zambia. Beginning 1967, operations at Nkandabwe stalled due to complex geological faulting with a lot of underground water. Thereafter the initial works at Maamba coal mine began, and this significantly improved the supply to the cement factory.

When the water evaporated, a new hardened material known as clinker was produced. Clinker was further processed in a primary crusher into small cement pieces, and finally into the powder material known as cement. The powder was packaged in 50 kilogramme bags, or sold as bulk to the end users. In some cases, clinker was also sold to end users as unrefined cement. The main target for clinker was the export market. In fact, from the onset, Chilanga Cement Factory sold both the unprocessed cement, the clinker and the final product, the cement powder. Figure 4.1 is sketch illustrating the basic processes of cement production at Chilanga Cement Factory. The sketch shows the process from the drilling stage to that of loading the limestone, and transporting to crushing, and burning then milling to final packaging of the cement.

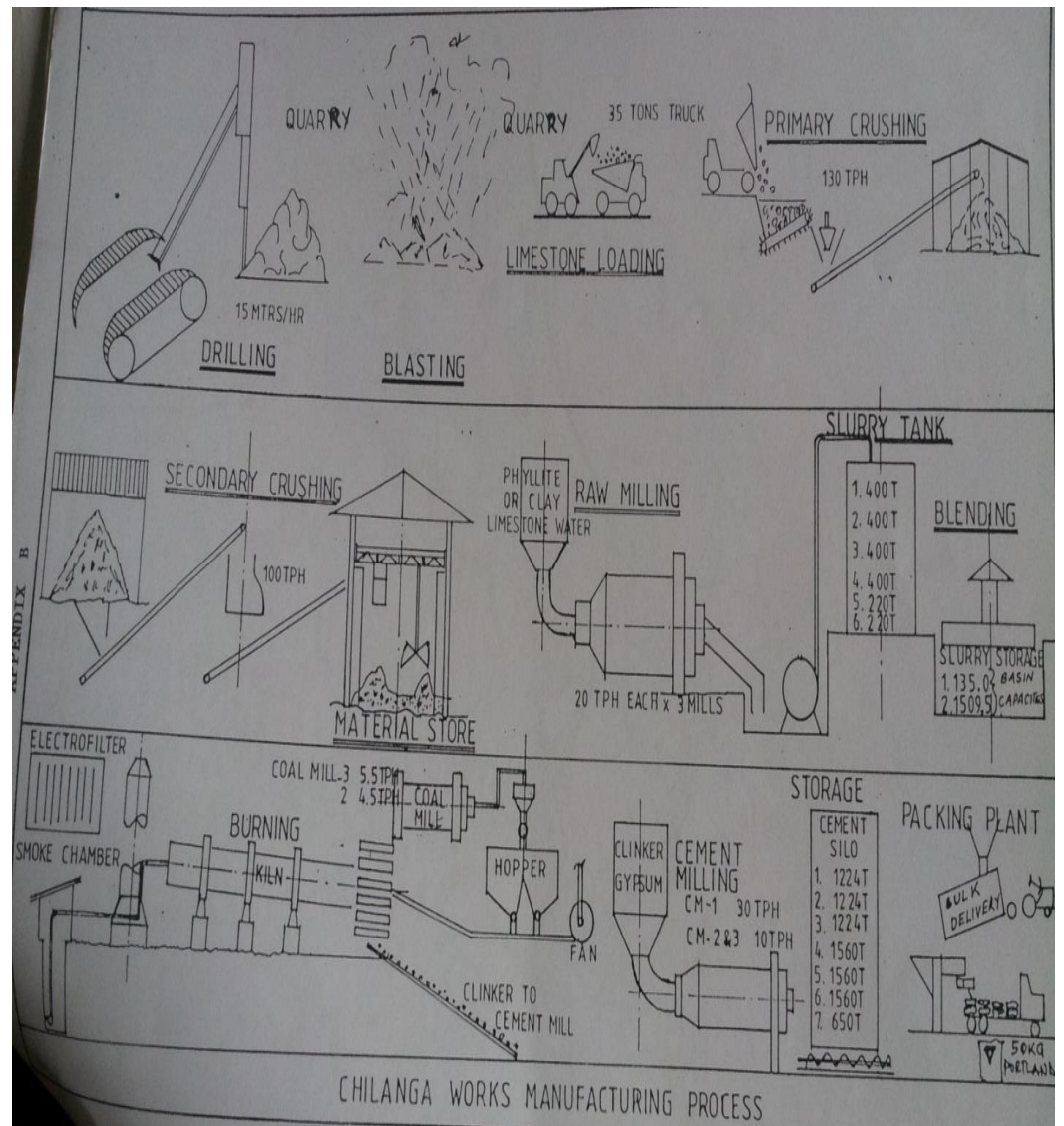
The chemistry of cement consisted of a mixture of minerals all of which are to a greater or lesser extent, hydraulic.<sup>44</sup> This means that when limestone, gravel or clay and sand are mixed with water, they form new minerals. These new minerals form an interlocking mass which gives rigidity to the mixture. The most important minerals in cement are calcium silicates. In terms of composition, lime or Calcium Oxide constitutes 60 to 67 percent,

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<sup>44</sup> Lafarge Cement, *Chilanga Plant Facts and Figures*, 2012, p.1.

silica, 17 to 25 percent, Aluminium( clay and shale), 3 to 8 percent, while other chemicals like Iron Oxide constitute 0.5 to 6 percent, Magnesia constitutes 0.1 to 4 percent, Sulphur Trioxide constitutes 1 to 3 percent, and Soda and Potash is 0.5 to 1 percent.<sup>45</sup>

Figure 4.1: Basic processes in Cement Production at Chilanga Cement Factory



<sup>45</sup> Henry C Mutafya, 'Chilanga Cement Plc. Chilanga Works, Environment Project Brief, 2000.

Source: Henry C Mutafya, 'Chilanga Cement Plc. Chilanga Works, Environment Project Brief'.2000.

### **Cement Production and Occupational Health and Safety to 1964**

The aspect of occupational safety and health (OSH) refers to the anticipation, recognition, evaluation and control of hazards that arise in the workplace and could impair the health or well-being of workers, taking into account the possible impact on the surrounding communities and the general environment.<sup>46</sup> An informant at Mount Makulu Health Centre narrated that exposure to dust for an extended period of time resulted in chronic bronchitis which is inflammation of the bronchial tubes, and excessive production of mucus, thereby causing bronchial infection, chronic cough and shortness of breath.<sup>47</sup> Other medical conditions such as the abnormal inflating of alveoli of the lungs referred to as emphysema caused shortness of breath to the victim. However, these conditions only manifested after a long period of exposure to cement dust environments, and when no occasional medical checkups were carried out.

Although most archival accounts are silent on the effects of cement production on occupational safety and health in the early years of the factory, the production of cement caused dust emission during blasting of limestone at the quarry and mining of sand and gravel were sources of health concern

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<sup>46</sup> Benjamin O. Alli, *Fundamental Principles of Occupational Health and Safety*, Second edition. www.ilo.org., Date accessed: 10 January, 2016.

<sup>47</sup> Interview with In'utu Milumbe. Sister in charge. Mount Makulu Health Centre, Chilanga, Zambia. 20 May, 2013.

for the workers. Dust was also released when transporting limestone and sand to the factory. Furthermore, dust was generated at the factory itself during the crushing of limestone in the kilns and when packing cement. The major health hazards in the factory were the chemical compounds, notably silica dioxide and iron oxide present in cement. When silica dioxide was inhaled over an extended period of time, the chemical had dangers of causing silicosis which was manifested by shortness of breath.<sup>48</sup> The exposure to cement dust over an extended period of time also caused skin irritations, a condition known as dermatitis.

Apart from the dust emissions, industrial noises were also generated during cement production processes. The effects of industrial noises were discussed from the point of view of loss of hearing by workers. Noise pollution was generated when extracting limestone using explosives, and during grinding and crushing processes. The exposure to industrial noises over an extended period of time led to loss of hearing in cases where the limit to the noises was higher than the required 80 decibels.<sup>49</sup> However, this situation was minimised because protective wear for the ears were introduced from inception of cement production at the factory in 1951.

### **Cement Production and its effects on Crop Cultivation to 1964**

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<sup>48</sup> NAZ, MH 1/09/01 Industrial Diseases Committee, 1945- 1957, Also NAZ, ZIMCO1/2/6, 'Chilanga Cement Limited. Report of Directors for the year ended 31<sup>st</sup> December, 1954.'

<sup>49</sup> Interview with Eugene Chungu, Director for Corporate Affairs and Communications.

Another significant concern of cement production was its alteration of the natural soil nutrients that could support crop cultivation. Long before the establishment of the cement factory, communities around Chilanga area cultivated the land for their food requirements. While it was argued that the vegetation of the limestone belt could not support meaningful agriculture owing to the very limited tree growth and stunting that was apparent<sup>50</sup>, dust emissions from cement production processes added to the problem of soil nutrients. According to the study carried out by the Lilayi Regional Conservation Team in the Chilanga Intensive Conservation Area in 1954, tree varieties that were visible and stunted in the area included the *Munga* tree (*Acacia Campylacantha*), *Musekese* or ‘Monkey Bread’, (*Piliostigma thonningii*, a species of flowering plants in the legume family) and some *Combretum*, which was commonly known as bush willows or shrubs typical of the savannah or arid vegetation type.<sup>51</sup>

Doudy Chindindindi, one of the African farmers who settled in the Chilanga area and began farming on the northern side of Chilanga Cement Factory observed that beginning from the 1960s, crop yield on his farm began to be affected.<sup>52</sup> This change in crop harvest was linked to the changes in water and nutrient levels of the soil following the cement production activities.

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<sup>50</sup> NAZ, SEC 1/311, Northern Rhodesia Government, Ministry of Agriculture, Conservation and Extension, 1950.

<sup>51</sup>NAZ, MAG 2/ 21/40, Central Province General, 1950-1955.Lilayi Regional Conservation Plan in the Chilanga Intensive Conservation Area of Northern Rhodesia, 1955.

<sup>52</sup>Interview with Doudy Chindindindi, Farmer, Thandiwe Farmer, Chilanga, Zambia, 2 October, 2012.

Chindindindi noted that it was quite tedious to ascertain the types of crop infection because the leaves of the plants were usually covered with cement dust. This situation was also observed in other vegetable gardens surrounding the cement factory. Stunted crop yields were gradually observed in different seasons after the establishment of the cement factory.

In order to identify the challenges that the farming community around Chilanga were facing in terms of plant diseases and stunted growth of plants, scientific researches were undertaken at the National Agricultural Research Institute at Mount Makulu beginning 1952 onwards. The Station had specialised areas of research in soils survey, plant pathology, pasture research, plant breeding (cereals and cotton), soil chemistry and agronomy.<sup>53</sup> The researches illuminated challenges of crop production in the farms near the cement factory. According to records on soil survey, soil chemistry and plant breeding, notable changes in the soil composition were gradually observed. That meant that the effects of the changes in soil nutrient levels only became apparent when cement production was increased.<sup>54</sup> The research results showed that crop yields were affected due to changes in the soil nutrients. However, these changes were only observed in the 1960s and 1970s onwards.

### **Cement Production, Mitigation Measures and Legislation to 1964**

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<sup>53</sup>Northern Rhodesia Government, Department of Agriculture, Annual Report, 1955. (Lusaka: Government Printers, 1956), p. 20.

<sup>54</sup> NAZ, MAG 2/5/67, Monthly Reports, Mount Makulu Research Station.1958-1961.

When the Northern Rhodesia Government enacted the Public Health Act in 1930, industries were mandated to ensure that good hygiene standards were maintained and diseases prevented.<sup>55</sup> The Act provided general regulation for all matters related to public health such as waste water drainage and management, disposal of and treatment of sewerage. This was on the basis that quarries were potential breeding avenues for chest infections, and other diseases like tuberculosis and malaria respectively, which was a public health concern. The Act also addressed all matters related to the health of workers. Therefore, when the cement factory was opened in 1949, the Public Health Act provided a framework of operations to protect workers against industrial hazards.

In the case of industrial noise control, measures included wearing ear protection devices. This was echoed in the report submitted by the Chairman of the Board of Directors for Chilanga Cement Factory in 1954 citing that the noise produced during the production processes was within the required intake of humans, and as such was not detrimental to the community.<sup>56</sup> The Northern Rhodesia Government's Committee on Industrial Diseases similarly argued that noise produced during the cement production process was within the

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<sup>55</sup> NAZ, MH 1/09/01 Industrial Diseases Committee, 1945- 1957, Also NAZ, ZIMCO1/2/6, 'Chilanga Cement Limited. Report of Directors for the year ended 31<sup>st</sup> December, 1954.

<sup>56</sup> NAZ, MH 1/09/01, Industrial Diseases Committee, 1945- 1957, Also NAZ, ZIMCO 1/2/6, 'Chilanga Cement Limited. Report of Directors for the year ended 31<sup>st</sup> December, 1954.

acceptable limits and as such did not pose a danger of loss of hearing to the workers at the factory as well as to the surrounding communities.<sup>57</sup>

Apart from the industrial noise control, dust control measures were also enforced. In 1954, the Northern Rhodesia's Committee reported that all dust in quarries produced by drilling, crushing and trammelling operations was detrimental to the health of persons working in those environments if and when those persons were exposed to high concentrations of dust over a period of time.<sup>58</sup> On 18<sup>th</sup> November 1954, a report was drafted and circulated by Richard Draper the Acting Commissioner in the Department of Mines, which made it mandatory for all quarry owners to introduce measures to curb any dust occurrences.<sup>59</sup> In 1958, the Factories Ordinance was enacted. The Ordinance made provisions for the safety, health and welfare of persons employed in factories.<sup>60</sup> It also provided that all factories be kept tidy, with clean drainages and sanitary convenience. Chilanga Cement Factory was also mandated to adhere to those regulations. The ordinance also provided that;

In every factory in which, in connection with any process carried on, there is given off any dust or fumes or other impurity of such a character, and to such extent as to be likely to be injurious or offensive to the persons employed, or any substantial quantity of dust of any kind, all practical measures shall be taken to protect the person employed against inhalation of dust or fume or other impurity and to prevent its accumulating in any

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<sup>57</sup> NAZ, MH 1/09/01, Industrial Diseases Committee, 1945- 1957, Also NAZ, ZIMCO1/2/6, 'Chilanga Cement Limited. Report of Directors for the year ended 31<sup>st</sup> December, 1954.

<sup>58</sup> NAZ, MH1/09/01, Industrial Diseases Committee, Also NAZ, ZIMCO1/2/6, 1945- 1957, 'Chilanga Cement Limited. Report of Directors for the year ended 31<sup>st</sup> December, 1954.'

<sup>59</sup> NAZ, MH 1/4/31, Occupational Diseases- General, 1953- 1957, 'Introduction of Measures to address Dust Occurrences.' 1954.

<sup>60</sup> NAZ, LSSI/6/52, Factories Safety Regulations Amendments, Northern Rhodesia Gazette No. 2018, 1945.

workroom in particular where the nature of the process makes it practicable , exhaust appliances shall be provided , and maintained as near as possible to the point of origin of the dust or fume or other impurity so as to prevent it entering the air of any workroom....<sup>61</sup>

In addition to exhaust appliances, respirators to aid in breathing, and goggles or effective screens for eye protection to all employees working in dust at the quarry, and in cement packing rooms were provided. Furthermore, the consumption of fresh milk by factory workers was also a mitigation measure used at the factory. This was a directive issued by the office of the commissioner of works as early as 1957 when he noted that fresh milk was to be provided to all persons who were engaged in works that exposed them to noxious or irritating fume and dust.<sup>62</sup> This was a commitment towards ensuring healthy and safety for the workers.

Another significant mitigation measure enforced as a result of the enactment of the 1958 Factories Ordinance was the recommendation by the Northern Rhodesia Government Inspector of Factories that all workers engaged in environments where dust was produced such as mining, quarrying and packaging of cement were to undergo medical examinations every two years at the Silicosis Medical Bureau.<sup>63</sup> Through that measure, identifying, determining and treating any significant occupational disease that workers may

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<sup>61</sup> NAZ, LSSI/6/52, Factories Safety Regulations Amendments, Northern Rhodesia Gazette No. 2018, 1945.

<sup>62</sup> NAZ, MH 1/4/31, 'Occupational Diseases, General', 1955-1963, Also NAZ, MH 1/09/02, Industrial Diseases Committee, 1947- 1963 and NAZ, MH 1/4/31a, Occupational Diseases, General' 1951-1960 'Free Issue of Milk', 1955.

<sup>63</sup> NAZ, MH1/09/02, 'Industrial Diseases Committee. 1947- 1963.

have developed due to exposure to cement dust and industrial noise at the cement factory was eased.

Apart from the enactment of the Factories Ordinance, and the regular medical examinations, water spraying on dusty roads from the quarry to the factory was introduced. Water spraying was also used during the extraction of calcium rocks and gravel to control the dust from the quarrying activity. At the factory, a special machine called Atomiser or Electro-filter was used to absorb the dust at the limestone crusher and at the trammel feed points. This is demonstrated in the sketch on the basic processes in cement production in figure 4.1.<sup>64</sup> To further address the negative impact of dust on health and environment, Chilanga Cement Factory invested in two electrostatic dust collecting machines in the years, 1959 and 1960.<sup>65</sup> The first machines were installed in 1959, labelled as K1, while a second machine, K2 was installed in 1960.<sup>66</sup> The two filter machines were able to remove fine dust particles from a flowing tunnel using electricity. Each machine was built to collect up to 90 percent of dust accumulated in the kilns.

Improvement in internal and external communication and awareness strategies greatly proved significant in curbing factory hazards. Internal strategies were targeted at employees while inside the factory and at the quarry,

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<sup>64</sup> See Figure 4.1. Basic processes in Cement Production at Chilanga Cement Factory

<sup>65</sup> Chilanga Cement Limited, *Annual Report*, 1959, (Ndola: Monterey Printing and Packaging Limited, 1960), p5. Also NAZ, ZIMCO1/1/4. Chilanga Cement Limited, Board Papers, 1963.

<sup>66</sup> Chilanga Cement Limited, *Annual Report*, 1959, (Ndola: Monterey Printing and Packaging Limited, 1960), p5. Also NAZ, ZIMCO1/1/4. Chilanga Cement Limited, Board Papers, 1963.

while external strategies were targeted at the entire community in Musamba and Chilanga Estates. Hence, beginning 1963, factory posters and signs into the housing estates into the cement factory housing estates included notice on quarry points for aggregates, danger points, and driveways for loading tracks.<sup>67</sup>

### **Cement Production and Occupational Health and Safety, 1965-1995**

Between 1965 and 1995, there was generally an increased demand for cement in view of the many infrastructure development programmes that needed to be undertaken across Zambia. As a result, work began on a third kiln, K3 shown in appendix ix, which was commissioned in 1967, and this brought the total rated output to 320,000 tonnes of cement a year. Increased cement production resulted in increased dust emissions from the three kilns. Most government reports by the department of labour show that the period after attainment of independence to 1975, emphasis was on factory inspection.<sup>68</sup> This was premised on the fact that since industrial production involved issues of occupational health, and safety, it was imperative that each employer introduced measures that would curb occurrence of industrial hazards. For instance, according to the Ministry of Labour and Social Services, 1971 Annual Report, emphasis by the factory inspectorate section was on the promotion of safe working conditions in order to prevent

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<sup>67</sup> NAZ, ZIMCO 1/1/4, Chilanga Cement Limited, Board Papers, 1960- 1967, Minutes of Meeting held on 1<sup>st</sup> July, 1963.

<sup>68</sup> Compilation from GRZ, Ministry of Labour and Social Services, *Annual Reports for the Department of Labour, 1965-1975*.

accidents.<sup>69</sup> Chilanga Cement Factory did not incur fatal accidents during this period because of compliance to safety regulations. In addition, the frequent medical services and examinations conducted by the Silicosis Bureau and the factory clinic provided a platform through which employees were certified fit or unfit for work, hence those found wanting were taken for further medical examination.

Similarly, since there were no significant medical record pointing to tuberculosis or silicosis from the Silicosis Medical Bureau, Chilanga Rural Health Centre or Mount Makulu Clinic, it was therefore not conclusive that exposure to cement dust could have had severe impacts on human beings. Although old and recent records from Chilanga Rural Health Clinic at Game and from Mount Makulu Clinic showed that the most common ailments treated at the clinics were malaria, influenza, diarrhoea, common coughs and trauma, the frequency of chest related infections diagnosed was similar to those of other ailments.<sup>70</sup> Therefore, it was not conclusive that the recorded chest infections were solely a result of exposure to cement dust emissions from the factory. Nevertheless, the nature of the factory activities did not rule out cases of patients diagnosed with pneumonia and breathing difficulties which may have been caused by exposure to dust emission into the atmosphere over a five to ten year period.

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<sup>69</sup> GRZ, Ministry of Labour and Social Services, *Annual Reports for the Department of Labour, 1971*, p34.

<sup>70</sup> NAZ, MH 1/10/24, Central Province, Medical Records, 1963-1985, and NAZ, MH 1/03/098, Central Province Tour Reports by Provincial Medical Officer. 1959.

Evelyn Mwale who lived in Chilanga from 1975 narrated that one family was forced to relocate because they suspected that the consistent asthmatic attacks suffered by their younger child could have been a result of inhaling the cement dust particles.<sup>71</sup> Mwale also narrated that even in households, furniture was constantly covered with fine cement dust which required constant cleaning of surfaces. Thus, residents were forced to shut all windows and entrances into their houses.

Another resident from the Chilanga Police Camp highlighted the challenges of coughing and sneezing that most residents in the camp suffered from. In terms of locality, both the police station and the police camp were situated next to the cement factory, hence the residents endured noise and cement dust emissions from the factory. Vwambanji Simusamba a Police Officer observed that dust from the cement plant negatively impacted on the livelihood patterns of the residents in the police camp.<sup>72</sup> Simusamba narrated that most accounts of ailments reported by the police officers showed that flu-like symptoms, sneezing, and coughing were the most common reported.<sup>73</sup> In another location called Freedom Compound, an unplanned settlement near the police station, one informant, Esther Chiwanza-Milayi, a resident of over twenty years observed that she had always suffered from constant wet coughs and teary eyes which she attributed to inhaling cement dust over a prolonged

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<sup>71</sup> Interview with Evelyn Mwale, Resident, Mount Makulu Township, Chilanga, Zambia, 16<sup>th</sup> May, 2013.

<sup>72</sup> Interview with Vwambanji Simusamba, Officer in Charge, Chilanga Police Station, Chilanga, Zambia, 1 February, 2013.

<sup>73</sup> Interview with Vwambanji Simusamba, 1 February, 2013.

period of time.<sup>74</sup> According to Milayi, every time dust was released, the residents complained of nasal and chest congestions.

The effects of cement dust on human health were also accounted for by Mildred Milimo-Chiboola, an officer at the Agricultural Research Station at Mount Makulu, Chiboola highlighted that emissions from the cement factory were visible since the time she began working at the Agricultural research station in since 1991.<sup>75</sup> She made reference to night time as the period when cement dust emissions were at their highest. This was noticed whenever her youngest children started coughing continuously after inhaling air contaminated with cement dust. This observation was shared by Coillard Habeenzu and Keston Phiri. Habeenzu served the National Agriculture Research Station between 1977 and 1995 as a Plant Pathologist studying symptoms, causes, damage, spread, and control of plant diseases.<sup>76</sup> Keston Phiri, on the other hand, has worked as an Agro-Meteorologist at Mount Makulu Research Station for the last twenty five years.<sup>77</sup> Habeenzu and Phiri recalled that most officers at the research station complained of coughing, experiencing flu-like symptoms and chest pains, which they claimed were caused by inhaling cement dust over an extended period of time. Habeenzu

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Interview with Esther Chiwanza-Milayi, Resident, Freedom Township, Chilanga, Zambia, 1 February, 2013.

Interview with Mildred Milimo Chiboola, National Agricultural Research Station, Mount Makulu, Chilanga, Zambia, 3 February, 2013.

<sup>76</sup>Interview with Coillard Habeenzu, Retiree, National Agricultural Research Station, Chilanga, Zambia, 2 October, 2012.

Interview with Keston Phiri, Agro- meteorologist, National Agricultural Research Station, Mount Makulu, Chilanga, Zambia, 3 February, 2013.

even narrated that two families relocated from Mount Makulu area as a result of experiencing extended periods of chest and nasal congestion.

Because of its location, in a predominantly residential area, Chilanga Cement factory endeavoured to maintain noise levels at 55 decibels day time and 45 decibels night time.<sup>78</sup> This was on the premise that the 55 decibels and 45 decibel levels were within the normal noise levels of 80 decibels permitted by industrial regulations, and did not result in loss of hearing.<sup>79</sup>

### **Impact of Cement Production on Crop Cultivation, 1965 - 1995**

Dust emissions and industrial noise from cement production processes tended to increase production increased. In the earlier years of the factory's operations, dust emissions were not very severe compared to later years, especially the period after the attainment of independence in 1964 when demand for cement in construction projects was high and more cement kilns were installed. However, as cement production continued at a high turnover rate, the surrounding community developed a negative perception of the factory. This was in relation to environmental pollution caused and observed through increased incidences of plant diseases and reduction in crop yields due to stunted crops.

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<sup>78</sup> Lafarge Cement, Environmental Management Plan for Chilanga and Ndola Plant, 2009.

<sup>79</sup> Interview with Eugene Chungu, Director for Corporate Affairs and Communications, Lafarge Cement, Zambia, Chilanga, Zambia, 30 September, 2012.

Over the years the public developed a negative image of Chilanga Cement Factory in relation to environmental degradation that was depicted through increased incidences of plant diseases and insect-pests and the fall in the crop productivity. At the time of independence in 1964, production of cement at Chilanga factory had been going on for 15 years, as a result, the soils were gradually beginning to lose their natural nutrients because of cement contaminants. The growth and yield of plant depended on the condition of the soil. Fertile deep well drained soils gave the highest crop yields.

Information provided by an expert on soil research, soil fertility, soil physics and soil microbiology at the National Agricultural Research Station, the Chilanga soils were classified under the Makeni soil types which are among the most fertile soils in Zambia in terms of their ability to support the full growth of various crops.<sup>80</sup> The properties were gradually being lost because of the cement dust fallouts that were experienced as the production of cement increased. Thus, the expression of soil acidity was based on active acidity and was given by a pH value. Pure water was most neutral with a value of 7. By mid 1975 onwards, changes in soil composition when measured in terms of the potential hydrogen or pH levels showed that there was a rise from the normal pH levels of 7 to over 9, thereby affecting the soil nutrient levels because of high alkaline content.<sup>81</sup> This change entailed that the balance between amounts of water and soil nutrients required to achieve

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<sup>80</sup> Interview with Godfrey Sakala, National Chief Agricultural Research Officer: Soils and Water Management Division. Mount Makulu Agricultural Research Station, National Agricultural Research Station, 3 February, 2013.

<sup>81</sup> GRZ, Ministry of Agriculture Soil Survey Section Research Bureau, 1991.

an effective yield especially maize crops was not attained because soil contents began to accumulate high contents of calcium.

For instance, reports from the National Agricultural Research Station at Mount Makulu contended that the cement dust emitted in the atmosphere affected the acidity levels of the soil, thereby affecting crop experimentations at the station. According to a report in the Sunday Times of Zambia Newspaper of 3<sup>rd</sup> November 1977, by Nicholas Mumba, Deputy Director of the research station, emissions from the cement production plant at Chilanga were proving to be a challenge for the effective crop production and experimentation at Mount Makulu.<sup>82</sup> Mumba observed that research results from the experimental fields showed that increased alkaline content in the soil affected the natural growth of controlled plant experiments. This trend continued after an observable period of time such that in 1979, some of the crop and soil experimentations had to be transferred to the Golden Valley Agricultural Research Trust, GART, in Chisamba along the Great North Road.<sup>83</sup> Other agricultural research activities were undertaken at Nanga farms in Mazabuka for Irrigation engineering, Kabwe research station for soil research, Misamfu regional research centre in Kasama for finger millet breeding, Mochipapa research station in Choma for soil research, Msekera regional research station in Chipata for soil research, and Mwekera research

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<sup>82</sup> Sunday Times, 'Research Choked,' 27 November, 1977.p.3.

<sup>83</sup> GRZ, Ministry of Agriculture, Department of Agriculture Productive Farming. (1984), p.11.

station in Kitwe provided alternatives for the agricultural research experiments.

Another significant impact of the cement factory on the cropping systems was the increase in crop diseases and insect pests. According to Coillard Habeenzu research on tree crops became a difficult task because of the continuous dust fallouts from the cement factory.<sup>84</sup> The most observable challenge was the identification of the types of diseases in tree plants because of the white cement dust that covered the leaves. He emphasized that because of an extended intake of cement dust fall outs, the natural soil nutrients to support normal growth of plants. He further explained that:

... I was doing plant propagation, and agricultural research on fruits in Zambia. What I experienced here was that because Mount Makulu was on the Western side of Chilanga Cement Factory it was difficult to identify diseases that affected the fruit plants...all the leaves were turning white, it was very difficult to destroy insects in the plants because the insects were hiding in the dust... When we asked the people, we were told it was the cement from Chilanga Cement Factory....<sup>85</sup>

Keston Phiri also made similar observations about the gradual changes that occurred to the soil fertility levels at the research station and the nearby fields.<sup>86</sup> Phiri narrated that despite the geographical location of Chilanga as a plateau area with good natural trees, and above average annual rainfall patterns, the area began to experience reduced maize yields due to stunted

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<sup>84</sup> Interview with Coillard Habeenzu, Mount Makulu Township, Chilanga, Zambia, 2 October, 2012.

<sup>85</sup> Interview with Coillard Habeenzu, Mount Makulu Township, Chilanga, Zambia, 2 October, 2012.

<sup>86</sup> Interview with Keston Phiri, Agro- Meteorologist, Mount Makulu Agricultural Research Station, 3 February, 2013.

crops. This was attributed to the loss of natural soil nutrients caused by high alkaline contents in the soils.

### **Cement Production and Mitigation Measures, 1965 -1995**

Prior to the 1960s, there were hardly any written, holistic environmental policies anywhere in the world. The environmental vogue was preservation rather than sustainable development.<sup>87</sup> The 1960s witnessed the rise of a new branch of historical studies which was referred to as environmental history. This branch of history studied the growing awareness of worldwide environmental problems such as pollution of water and air by pesticides and industrial emissions. Environmental history also studied the greenhouse effects of human activities. In this new field of study, scholars began to research the origins of contemporary problems, drawing upon the knowledge of a whole field of scientific disciplines which had been developed during the preceding century.<sup>88</sup>

During the period 1965 to 1995, the most notable mitigation measures included installation of dust suckers. For instance the proposal to install an electrostatic dust precipitator on No.1 and 2 kilns was made in 1973. The board's approval was given in the 1973/74 budget, and an F.L.Smith

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<sup>87</sup>Munyaradzi Chenje and Phyllis Johnson (eds.), *State of the Environment in Southern Africa. Report by the Southern African Research and Documentation Centre, IUCN- World Conservation Union and the Southern African Development Community, 'Evolution of Policy'*. (Harare: SARDC, 1994), p.39.

<sup>88</sup> Anna Bramwell, *Ecology in the 20<sup>th</sup> Century, A History*, (New Haven: Yale University Press . 1989,) p1. Also Donald Worster, *The ends of the earth: Perspectives on Modern Environmental History* (Cambridge: Cambridge University Press), 1988, p.11.

precipitator machine was purchased in 1974 at a total cost of K270 000.<sup>89</sup> In addition to the installation of the dust sucking equipment at the factory, there were also improvements in communication and in training programmes. Through this measure, it became mandatory that all the employees undertook occupational health and safety orientation training to ensure that they were appraised on the basic rules of work.<sup>90</sup>

Occupational safety orientation training involved basic hazard awareness, site specific hazards, safe work practices, and emergency procedures for fire evacuation, and natural disaster.<sup>91</sup> All employees were therefore provided with adequate information which enabled them to understand the different work hazards. The information adequately covered knowledge of materials and equipment, known hazards in the operations and precautions to prevent exposure of hazards. In addition, all employees were provided with safety uniforms such as overall, helmets, hearing aids and goggles as shown in photograph in Appendix VIII.

Apart from safety training orientation programmes, labelling was also adopted as a tool for communication and awareness rising for employees and the surrounding community. The promotion of safe working conditions in order to prevent accidents was one of the major concerns of the government

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<sup>89</sup> NAZ. ZIMCO1/2/255, Chilanga Cement Limited, 'General Manager's Report for the Quarter ended 30<sup>th</sup> June, 1977'.

<sup>90</sup>Interview with Eugene Chungu, Director for Corporate Affairs and Communications, Lafarge Cement, Zambia, 30<sup>th</sup> September, 2012.

<sup>91</sup> GRZ, Ministry of Labour and Social Services, *Annual Report for the Department of Labour, 1974*, p.34

inspectorate. Although safety standards were introduced as far back as 1952, the signs and labels were improved further after 1965, such that by the 1970s, to the time the factory was privatised in 1994, there were information signs and labels placed at strategic points at the factory.<sup>92</sup> Hazardous areas such as electrical and compressor rooms, rooms with installations, storage rooms for materials, and emergency exits were appropriately marked. All equipment was labelled and all containers which were filled with hazardous chemical materials were colour coded in different colours. Similarly, piping systems that contained hazardous substances were labelled with the direction of flow and contents of the pipes.

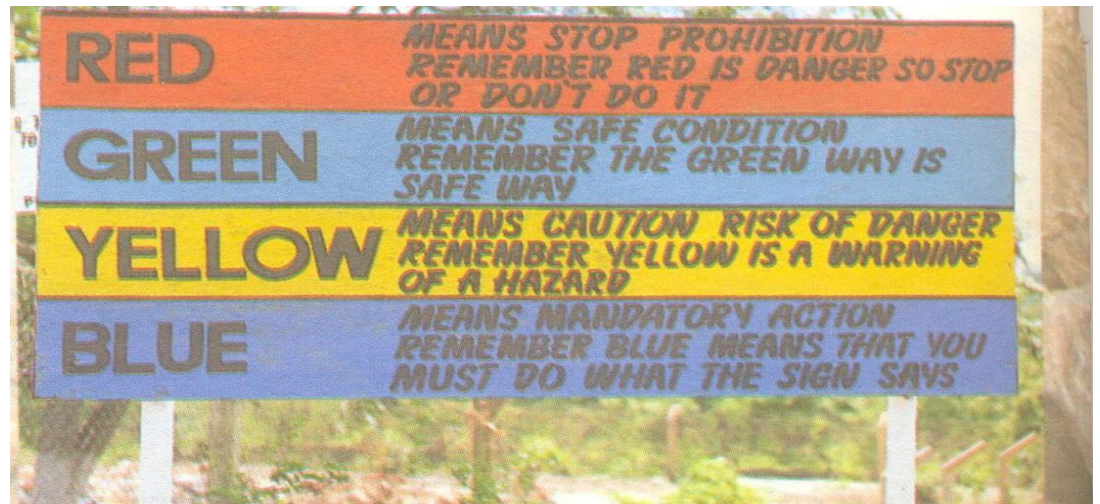
Sign posts such as the one shown in Figure 4.2 were placed at different locations with the factory premises in surrounding areas of the factory premises to educate the Chilanga employees and its community on issues of safety. On every sign post, colour codes were used to identify and communicate information. For example, colour yellow was used to represent caution risk of danger, and warning of a hazard, while colour code red referred to a warning of danger, cautioning individuals to stop, or not to undertake an activity at that particular time whilst in workshop. Furthermore, the colour green meant safe condition to undertake a task or to proceed, and colour blue denoted taking a mandatory action according to the colour depicted.

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<sup>92</sup> GRZ, Ministry of Labour and Social Services, *Department of Labour, Annual Report for 1977*, p.13.

Interview with Eugene Chungu, Director for Corporate Affairs and Communications, Lafarge Cement, Zambia, 30<sup>th</sup> September, 2012.

Figure 4.2: Signage Post showing Safety awareness at Chilanga Cement Factory.



Source: Chilanga Cement Annual Report PLC, *Annual Report* for 1990.

In addition to the signage communication, Management at the factory introduced a system where copies of the hazard coding system were placed in strategic locations within the factory.<sup>93</sup> These included emergency exits, entrance doors and at fire emergency connection points. The documents contained information regarding the types of hazardous materials stored, handled or used at the facility, including maximum inventories and their storage locations.

Hygiene within and around the factory premises was also prioritised. Vacuum cleaners and closed cabins were also introduced, while dust extraction and recycling systems were installed in the grinding mills. In addition, air ventilation was improved in cement bagging areas, and employees were

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<sup>93</sup> Interview with Eugene Chungu, Director for Corporate Affairs and Communications, Lafarge Cement, Zambia, 30<sup>th</sup> September, 2012.

supplied with appropriate personal protective equipment such as helmets, face masks and nose respirators.<sup>94</sup>

Beyond these measures, the provision of milk to employees as a body and chest purifier continued from the early years of the factory operations. In addition, workers at Chilanga Cement Factory were required to undergo medical check-ups at the factory clinic when employed and thereafter every six months. This strategy was also adopted by employers at the National Agricultural Research Station at Mount Makulu where there were reports on effects of cement production on occupational safety and health. In addition, fresh milk was provided to employees at Mount Makulu Agricultural research station.<sup>95</sup>

Table 4.1 is a summary outlining emission sources, type of emissions and mitigation measures that were introduced at Chilanga Cement Factory.

Table 4.1: Sources of Emissions, Pollutants and Mitigation Measures

Source of emission	Pollutants	Mitigating Measures
Quarry, Limestone extraction	Dust	Areas that were marked out for blasting were wet drilled. Workers at site were also provided with effective and appropriate safety wear prior to undertaking the assignments.
Transportation from quarry to factory.	Dust	Water was sprayed from the quarry site through the access roads to the factory.
<b>Crushers</b> Secondary Primary	Dust during crushing. Dust during sieving and bagging of cement.	Workers were provided with fresh milk to minimise the negative effects of cement dust that was inhaled. Big filters were installed to arrest dust arising from the crushing, sieving and bagging processes.

<sup>94</sup> Chilanga Cement PLC, *Annual Report* for 1990, p.9.

<sup>95</sup> Interview with Coillard Habeenzu, Mount Makulu Township, Chilanga, Zambia, 2 October, 2012.

	Dust	Crushing rooms were fitted with Water sprays to minimize dust that arose.
Coal Mills	Coal Dust	Dust suckers were installed in order to trap dust arising.
Kilns with coolers	Dust and Nitrogenous gases	Electrostatic precipitators were installed in the kilns to arrest any dust that was rising. Nitrogenous dust was kept within limit.
Cement Mills	Cement dust	Bag filters and operators were used as dust precipitators
Access roads	Dust	Water was sprinkled. When available, Molasses was used.
Extraction, grinding and storage of limestone Production of the cement.	Noise, dust and Vibrations	Silencers fans were installed, Mill operators were enclosed in the rooms. Noise barriers and personal hearing protection was provided.

Source: Henry Mutafya, Chilanga Works Environmental Project Brief. 2000.

These mitigation measures were instituted from the initial operations of the factory, and were continuously improved upon. For instance, at the quarrying site where, limestone was extracted, dust was produced in huge quantities. As a mitigant, areas that were marked for blasting were wet drilled. Workers at site were also provided with effective and appropriate safety wear prior to undertaking the assignments. Similarly, noise produced at quarry sites was minimised by installing silencers fans and noise barriers, while personal hearing protection was provided for personnel exposed at those sites.

**Legal Instruments: Occupational Safety and Environmental Protection, 1965-1995**

In terms of legal frameworks on environmental protection and occupational safety and health, the post 1964 period saw the introduction of a number of pieces of

legislation. The earliest form of legislation enacted was the Factories Act of 1967.<sup>96</sup> The Act regulated the conditions of employment in factories and emphasised occupational health and safety of employees. It also provided for the examination and inspection of plant and machinery in order to ensure safety. The Factories Inspectorate under the Ministry of Labour and Social Security was mandated to enforce the Act. The Factories Act was relevant to the operations of Chilanga Cement Factory because it made provisions for the safety, health and welfare of employees at the factory.

The June 1972 United National Conference on Human Environment held in Stockholm, Sweden, paved way for participating nations to optimise all the issues related to the problem of environmental pollution.<sup>97</sup> The focus of the conference was on preventive rather than curative measures, which ushered in the concept of sustainable development. Following the conference, environmental legislation was enforced in the different state parties. In fact, the period after 1972 to 1982 was referred to as the decade on environmental protection. For the first time, the Government of the Republic of Zambia organised a four days holistic conference on environmental issues in Central and East Africa.<sup>98</sup> The conference agenda was to address three basic problems pertaining to the environment. These were: Environment and Community health, Environment and Agricultural development,

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<sup>96</sup> GRZ, Gazette Acts: Index to Supplement containing Acts for the year 1968. Gazette Vol. IV. Acts 1968, Factories Act, Lusaka: Government Printers, 1969.

<sup>97</sup> Munyaradzi Chenje and Phyllis Johnson (eds.), State of the Environment in Southern Africa. Report by the Southern African Research and Documentation Centre, IUCN- World Conservation Union and the Southern African Development Community, 'Evolution of Policy'. (Harare: SARDC, 1994), p.39.

<sup>98</sup> NAZ, MH 1/13/24, Environmental Health Policy, 'Pollution and the Environment,' 1973.

and Environment and Industrialisations. All the three domains applied to the operations of Chilanga Cement Factory. For instance issues of agricultural yields, and community health in relation to emissions from the cement factory could be addressed. In view of that development, the Government of the Republic of Zambia began to prepare the National Conservation Strategies (NCSs) that were modelled on the International Union for the Conservation of Nature, (IUCN) and the World Conservation strategies to guide national environmental policies, and to ensure that industries that polluted the environment in one way or another were held accountable.

With that background, in 1985, Zambia formulated the National Conservation Strategy as a policy framework document that provided an overview of the status of environmental resources of Zambia.<sup>99</sup> The document identified key environmental issues and made recommendations for programmes and actions aimed at addressing environmental issues. The immediate action was the enactment of environmental protection legislation, beginning with the Environmental Protection and Pollution Control Act of 1990<sup>100</sup> The Act spelt out the legislative framework and requirements for all types of projects in Zambia. It also provided a holistic approach towards environmental management. This Act incorporated the protection, control of pollution and monitoring activities affecting the natural environment. It also provided for the establishment of an Environmental Regulatory Council. Under its umbrella,

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<sup>99</sup> GRZ, Zambia Environment Outlook Report 3. A Report by the Environmental Council of Zambia, 2008, p. xix.

<sup>100</sup>GRZ, *Ministry of Environment and Natural Resources Management Annual Report, 1994*, (Lusaka: Government Printers, 1995), p.28. Also GRZ, Environmental Protection and Pollution Control [No. 12 of 1990], Date of assent: 20th July, 1990.

various Statutory Instruments and regulations were produced to address activities that affected the environment.

In 1992, the Environmental Council of Zambia (ECZ) was established.<sup>101</sup> The overall task of the Council was to observe and undertake environmental project assessments in order to counter check emissions from manufacturing processes. Among the tasks for the Council was to monitor the effects of pollution from Chilanga Cement Factory on the natural environment. Studies conducted revealed that gaseous pollutants, mainly Nitrogen and Carbon dioxide were emitted in the environment during cement production processes.

Another piece of legislation that regulated the operations of the cement factory was the Water Pollution Control Act of 1993. This Act outlined the requirements for water and effluent discharged into the environment and provided reference for the same.<sup>102</sup> Furthermore, the Waste Management (Licensing of Transporters of Waste and Waste Disposal Sites) Regulation of 1993, Statutory Instrument No.71 provided for licensing of solid non-hazardous waste transportation and operating or owning of a non- hazardous waste disposal site,<sup>103</sup> while the Pesticides and Toxic Substances Regulations of 1994, Statutory Instrument No.20 provided for the licensing of importation, transportation, distribution and storage of pesticides and toxic substances.<sup>104</sup>

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<sup>101</sup> GRZ, Environmental Protection and Pollution Control (No. 12 of 1990) Date of assent: 20<sup>th</sup> July, 1990.

<sup>102</sup> GRZ, *Ministry of Environment and Natural Resources Management Annual Report, 1994*, (Lusaka: Government Printers, 1995), p. 28.

<sup>103</sup> Lafarge Cement plc, Environmental Management Plan for Chilanga and Ndola Plant, 2009.

<sup>104</sup> Lafarge Cement plc, Environmental Management Plan for Chilanga and Ndola Plant, 2009.

In 1994, Government developed the National Environmental Action Plan which had the overall objective of integrating environmental concerns into the social and economic development planning process.<sup>105</sup> The Plan of action also identified five priority areas of concern namely; water pollution and adequate sanitation; soil erosion; air pollution; wildlife depletion; and deforestation. In the same year, the government passed the Mines and Minerals Development Act to set the legal requirements and framework for mining activities in Zambia.

The Mines and Minerals (Environmental) Regulations Act 29 was introduced immediately after the Mines and Minerals Development Act in 1994.<sup>106</sup> This Act was first discussed in the 1970s, and it provided for the granting, renewal and termination of mining rights.<sup>107</sup> Because of the nature of activities that Chilanga Cement Factory was undertaking, which included extracting limestone rocks, the factory was mandated to comply with the provisions of the Mines and Minerals (Environmental) Regulations Act. In view of this Act, all mining and quarrying activities were only undertaken after an Environmental Impact Assessment study was certified satisfactory. The Limestone quarrying activities of the factory were therefore classified under the Mines and Minerals Act that was passed in 1994.

Environmental mitigation measures that were introduced by Chilanga Cement Factory Management were monitored and evaluated by the Ministry of Environment

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<sup>105</sup> GRZ, *Zambia Environment Outlook Report 3. A Report by Environmental Council of Zambia*, (Lusaka: Government Printers), 2008, p. xix.

<sup>106</sup> GRZ, *Ministry of Environment and Natural Resources Management Annual Report, 1994*, (Lusaka: Government Printers, 1995), p. 28.

<sup>107</sup> SAI Limeworks Limited, *The Environmental Impact Statement (EIS) Hydrated Lime Plant- Shimabala, Kafue, Zambia*, A Report submitted to the Zambia Environmental Management Agency, December, 2011.p. 17.

and Natural Resources to assess the negative impact of the factory's activities on the environment, human health, plant life, as well as the effect on ground water. In addition, the measures contributed to the formulation and enactment of laws which had a direct impact on environmental protection with regards to the operations of Chilanga Cement Factory. The formation of the Environmental Council of Zambia played a regulatory role in monitoring that all activities at Chilanga Cement Factory such as quarrying, blasting, kilning were in compliance with environmental protection requirements.

### **Conclusion**

The purpose of this chapter was to show how the establishment of Chilanga Cement Factory impacted on the physical environment. Cement production produced dust, noise and affected crop experimentation at the nearby Agricultural Research Station. Dust emissions and noise pollution tended to rise with increased cement production. In the earlier years of the factory's operations, emissions were not very severe when compared to later years, especially the period after the attainment of independence in 1964 when demand for cement in construction projects leaped, and additional cement kilns were installed.

The chapter showed that the negative impact of the cement factory on both human health and agricultural experimentation were experienced from the onset and the severity of the impact tended to increase as cement production increased. Hence, to mitigate these effects, the factory managers worked out measures to curb the negative effects of noise pollution and dust

pollution as well as waste water disposal. These measures were both for the internal environment as well as the external environment. For instance regular medical examinations, general cleaning of the factory, installation of dust sucking equipment, water spraying on the roads to the site were some of the mitigation measures that assisted in the operations of the factory.

The chapter also showed that the effects of cement dust fall outs on the soil composition, in relation to agricultural activities in the area and particularly to the agricultural research activities at Mount Makulu Central Agricultural Research Station, were observable between 1970 and 1980. The results were stunted growth of crop and dusty leaves on some plants making it difficult to ascertain plant diseases. The end result was the shift of experimental fields from Mount Makulu Central Agricultural Research Station to other centres such as Golden Valley Research Station in Chisamba, Mochipapa Agricultural Research Station in Choma, and Nanga farms in Mazabuka, among others.

The chapter also highlighted some measures that the cement factory introduced after 1964 to improve safety and health of the employees and the surrounding community such as communication and training programmes, provision of protective attires for employees in hazardous environments, and investment in emissions-control technology so that the operations of the company did not have severely harm the natural environment. These measures played an instrumental role in minimising workplace hazards.

The study concluded by discussing some of the legislative measures that Government instituted during both the colonial and post-colonial period beginning with the Public Health Act of 1930. Although in the initial development of the cement factory, issues of environmental pollution and protection were addressed, it was only after 1964 that these issues become more pronounced. Environmental legislation became more apparent after the 1972 Stockholm conference on the environment, which was followed by the 1980 decade on environmental protection. The Government of Zambia began to prepare the National Conservation Strategies, NCSs in 1985. The NCS resulted in the enactment of the Environmental Protection and Pollution Control Act of 1990, and the subsequent formation of the Environmental Council of Zambia.

## **CHAPTER FIVE**

### **CONCLUSION**

Most historical accounts worldwide on industrialisation and urbanisation demonstrate that industrial development has been a panacea for urban growth. The development of industries involved the constant re-allocation of workers, both physically and occupationally into more productive economic zones. This study aimed at constructing the history of Chilanga Cement Factory, examining the economic, social, and environmental impact of the factory on the growth of Chilanga Township from 1949 to 1995.

The purpose of setting up the factory was to promote the development of infrastructure in Northern Rhodesia against a backdrop of high importation costs of the commodity. The high investment cost of setting up a cement manufacturing industry was addressed through a joint venture approach where both the Northern Rhodesia

Government and the Colonial Development Corporation pooled their resources together and established the Chilanga Cement Factory.

The study has demonstrated that the development of Chilanga Cement Factory transformed the social wellbeing and economic situation of the Chilanga community. A wide range of employment and business activities also arose in Chilanga Township, hence increasing income for the local people. The cement factory's initiatives were significant to the overall development of Chilanga Township, thus contributing towards sustainable development through the creation of employment in different sectors such as construction, the mines and allied industries such as the producers of cement bags, and transporters. This was in addition to community engagements and donations that the factory was vigorously involved in.

The study established that the opening of the factory at Chilanga contributed to the welfare of its community by promoting, education and literacy programmes, such as the adult literacy programmes as demonstrated by the establishment of the Chilanga Residents Association. Chilanga Cement Factory management also endeavoured to promote respect for health and safety of both its immediate employees and of its surrounding community. The factory ensured protection of the physical natural environment through the environmental resuscitation and land reclamation programmes. In addition to these factory precipitated developments, the Government of the Republic of Zambia also fostered the development of other different infrastructure such as housing units, office blocks, school infrastructure, health care facilities, and a market which significantly contributed to the growth of Chilanga Township.

The study also discussed how the establishment of the cement factory provided an opportunity for other businesses and enterprises to grow. This was evidenced from the small businesses and cooperatives. These opportunities increased income for the local people. As a result of these opportunities, the establishment of the factory to a great extent contributed to the rise of the Chilanga population because people began to settle in and around Chilanga Township on a more permanent basis.

Although in the early years of the factory's operations, factory managers did not wish to extend community development beyond its surrounding premises, and its housing estates at Chilanga and Musamba, the government's declaration of Chilanga as a Township in 1952 by the colonial government led to development of different infrastructure such as housing units, education infrastructure, construction of health care facilities, postal services, and banking services outside the factory premises. In addition, a number of government departments such as Game and Fisheries, Water and Irrigation, the Police Station and, the Agricultural research Station at Mount Makulu ultimately contributed to an increase in population and growth of an urban area.

Following the attainment of independence in 1964, the factory focused on training and retention of Zambian skilled labour. This was in line with the Zambianisation programme that was promoted from 1965. Thus, a number of Zambians were trained both locally and abroad in order to fill the vacant positions that were created as a result of Zambianisation. This development was significant in promoting labour stabilisation, population increase due to internal movement of people, and the establishment of permanent settlements in Chilanga. Furthermore, development projects continued to be undertaken around Chilanga Township as the cement factory became more involved in

community programmes. This was apparent through the renovations of infrastructure built in Chilanga such as housing units that were repainted, and the football grounds renovated. Managers at the cement factory also supported other community programmes, through funding and donations of cement pockets. The support went towards school athletics programmes, national Independence Day celebrations, agricultural shows, and the construction of sports and cultural centres. In some cases, support to communities was extended beyond Chilanga to surrounding communities including those in Mazabuka, Chipata, Monze and Lusaka, among others

Beyond these positive outcomes of the establishment of Chilanga Cement Factory, the study also showed that the production of cement had negative impacts on the environment and human health within its locality. Some of the effects such as the generation of dust which led to air pollution resulted into changes in land use patterns. These changes in land use patterns impacted on crop yields, disrupted traditional agrarian economies and in some cases resulted in the relocation of the local people to accommodate factory.

Apart from the effects of cement production on both human life and crop cultivation, the study also investigated the mitigation measures that the factory instituted in order to safeguard occupational health. The priority in the cement industry was to minimize pollution levels of all types by reducing the mass load emitted from the stacks, from fugitive emissions, and from other sources. Additionally, Government's played a significant role in ensuring that legislation concerning environmental protection was adhered to. This was evidenced from the different pieces

of legislation enacted from the colonial period into the post-colonial period. The enforcement of legislation was paramount to the operations of Chilanga Cement Factory in terms of public health, occupational safety and protection of the environment.

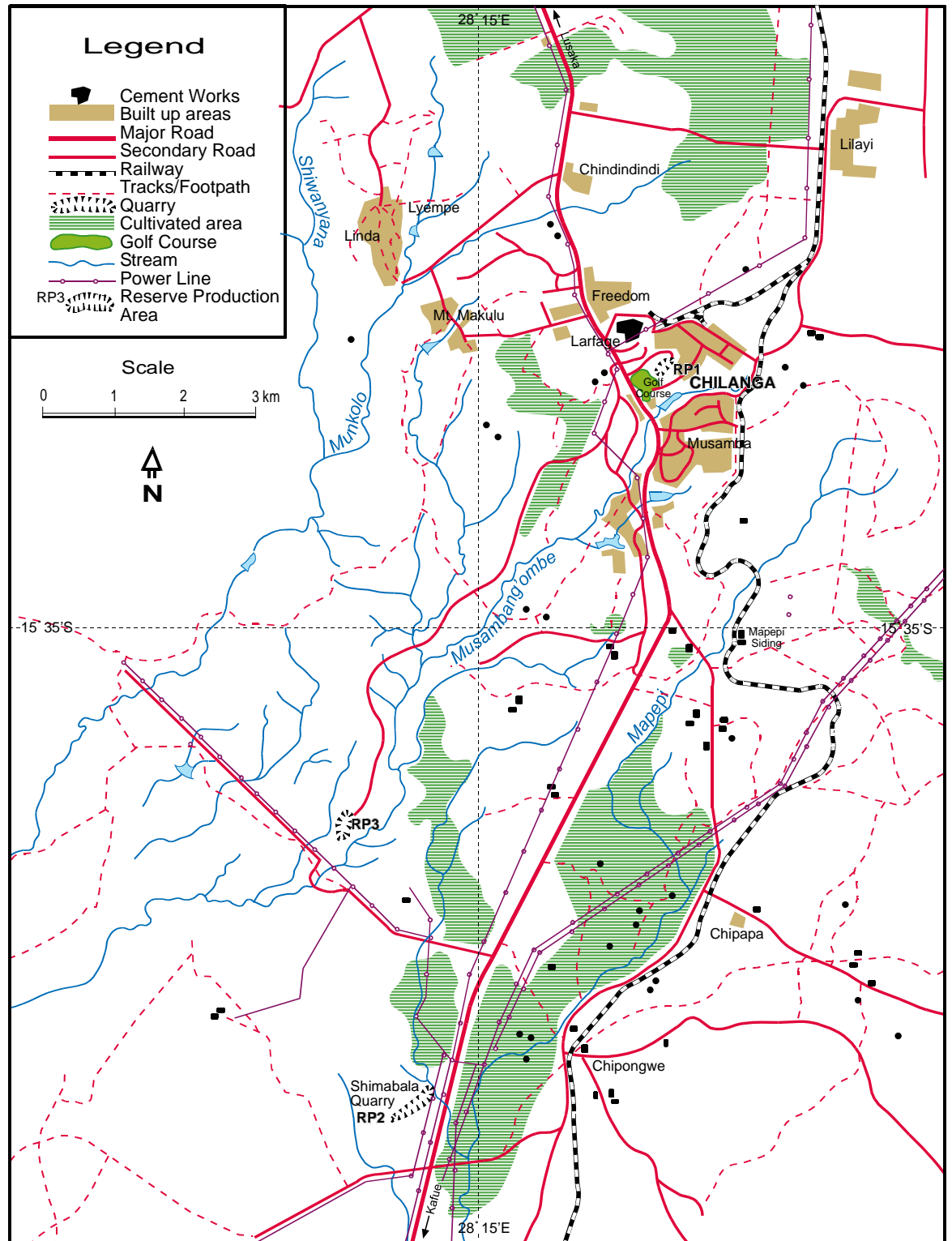
Legislation on the environment became more apparent after the 1972 United Nations Stockholm conference on the environment to which Zambia was a state party. Furthermore, the adoption of the National Conservation Strategies in 1985 resulted in the enactment of the Environmental Protection and Pollution Control Act of 1990, which subsequently led to the formation of the Environmental Council of Zambia, an organisation that was mandated to monitor effects of industrial activities on the natural environment.

Overall, the study provides an understanding of the significance of the history of Chilanga Cement Factory in transforming Chilanga Township from a predominantly rural agrarian economy to a money economy. In ensuring its sustainability, the factory endeavoured to improve skills of its employees through training programmes. The factory supported communities in development programmes such as the adult literacy programmes, and also endeavoured to promote respect for health and safety of both its immediate employees and of its surrounding community, by ensuring protection of the physical natural environment through the environmental resuscitation programmes.

# APPENDICES

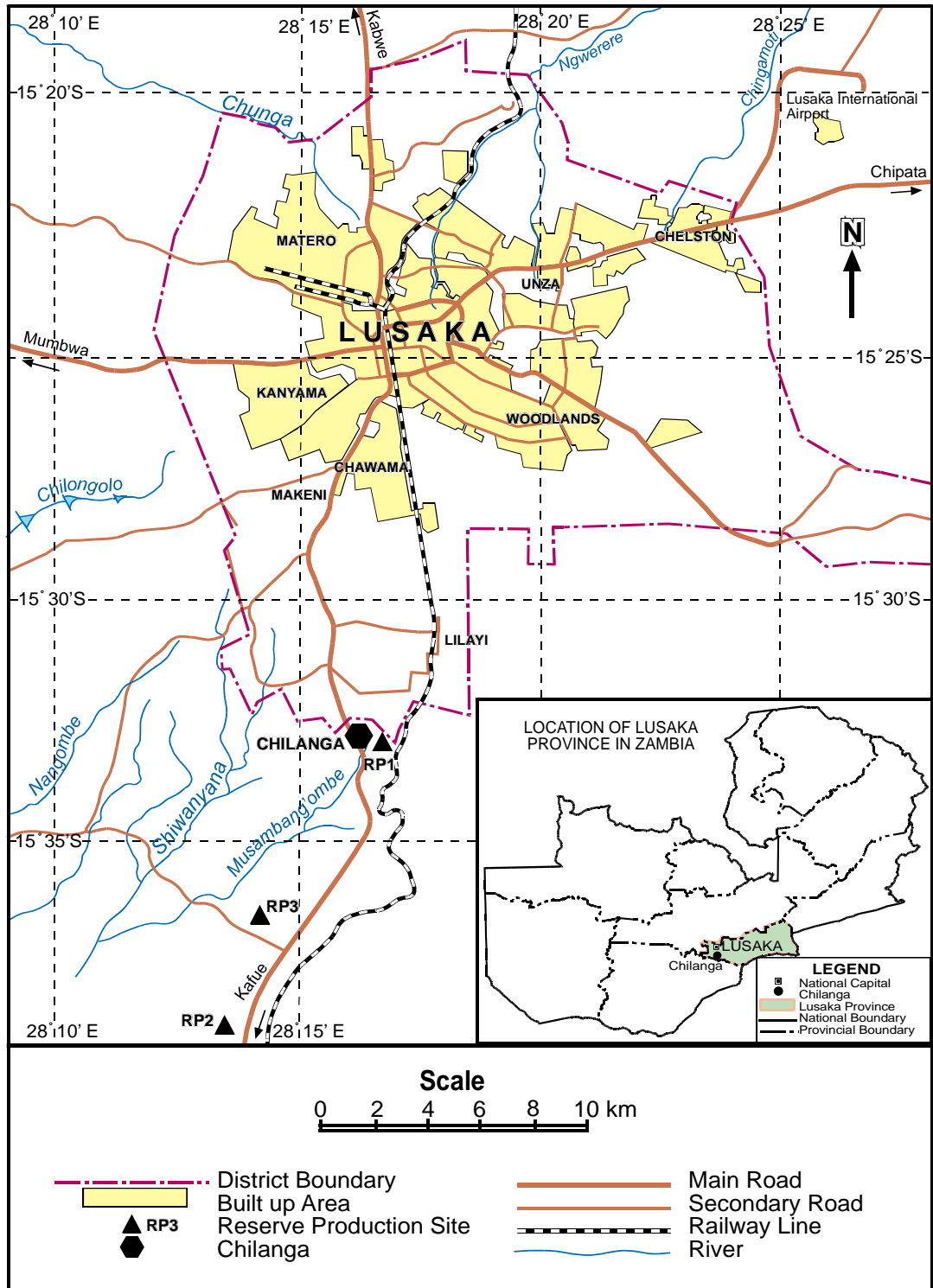
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**APPENDIX I: Location Map of Chilanga Township, 1995.**



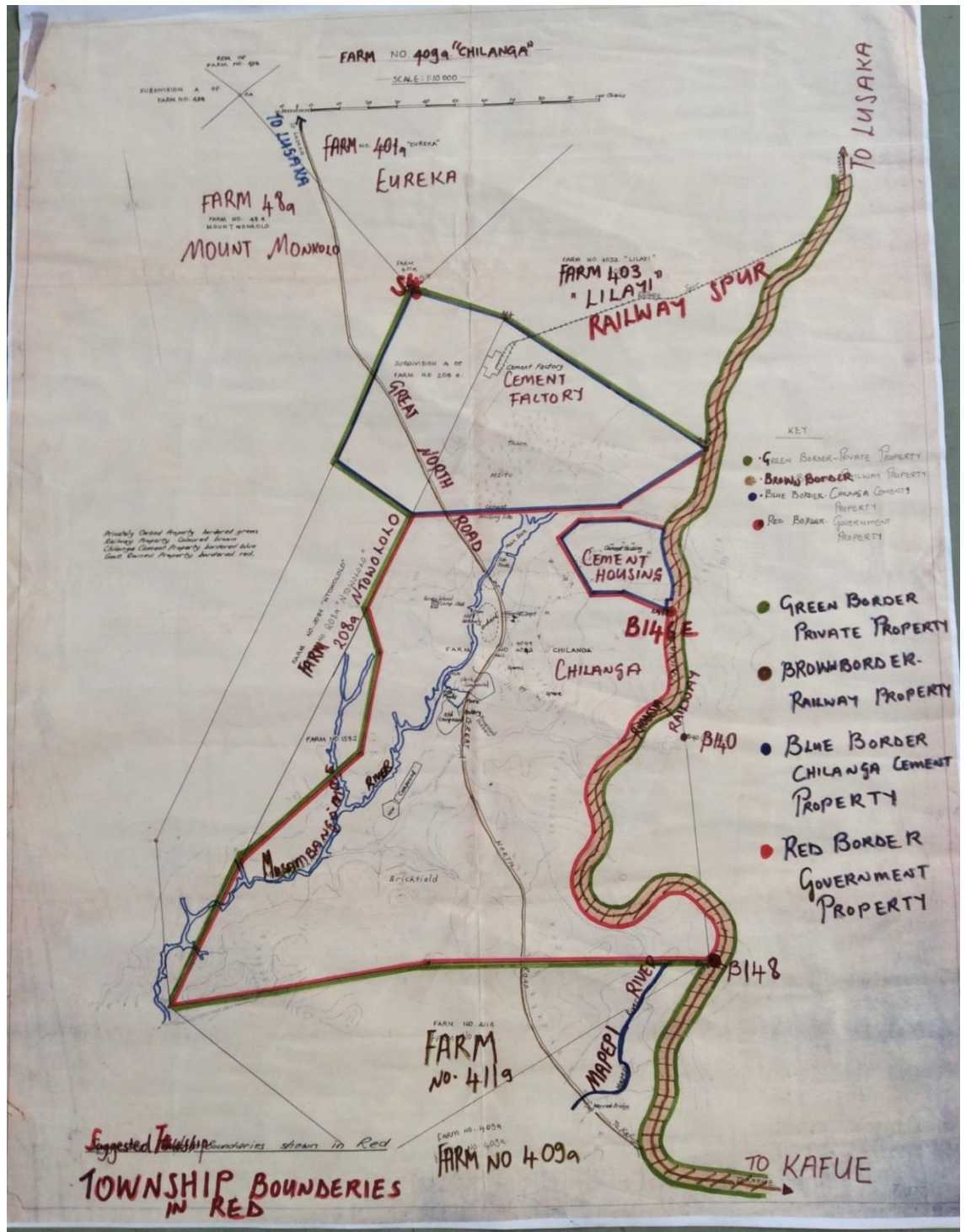
Source: UNZA, Cartography section, Geography Department, 2012.

**APPENDIX II: Location Map of Chilanga Township and Lusaka city**



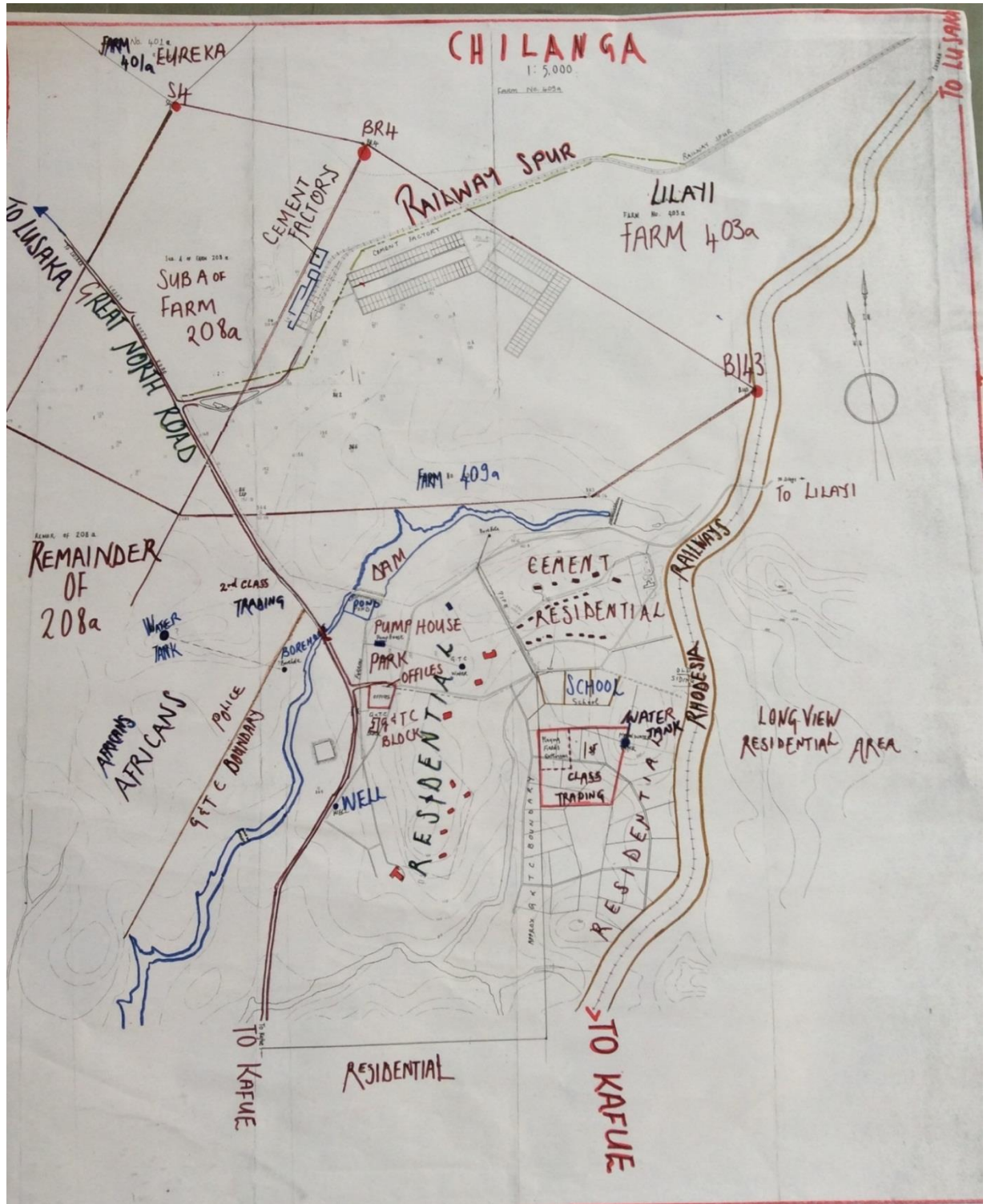
Source: UNZA, Cartography section, Geography Department, 2012.

APPENDIX III: Sketch Map of 'Chilanga', Township Boundaries 1952



Source: NAZ, CNP 1/1/12, Local Government Townships - Chilanga, 1949- 1959.

**APPENDIX IV:** Sketch Map of Chilanga Township, residential and trading sites, 1952



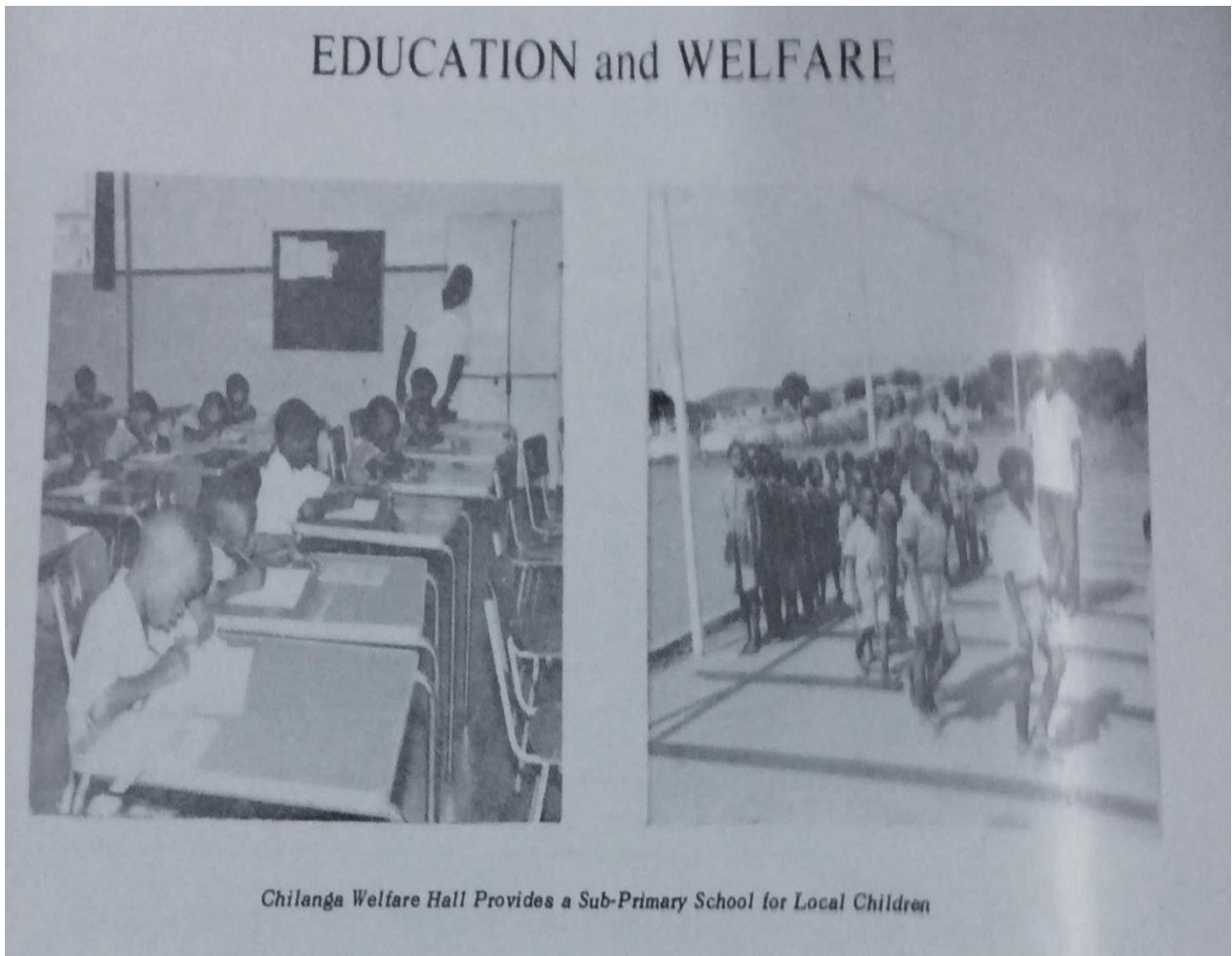
Source: NAZ, CNP 1/1/12, Local Government Townships - Chilanga, 1949- 1959.

**APPENDIX V: Health Services Provided by Chilanga Cement Factory, 1969**



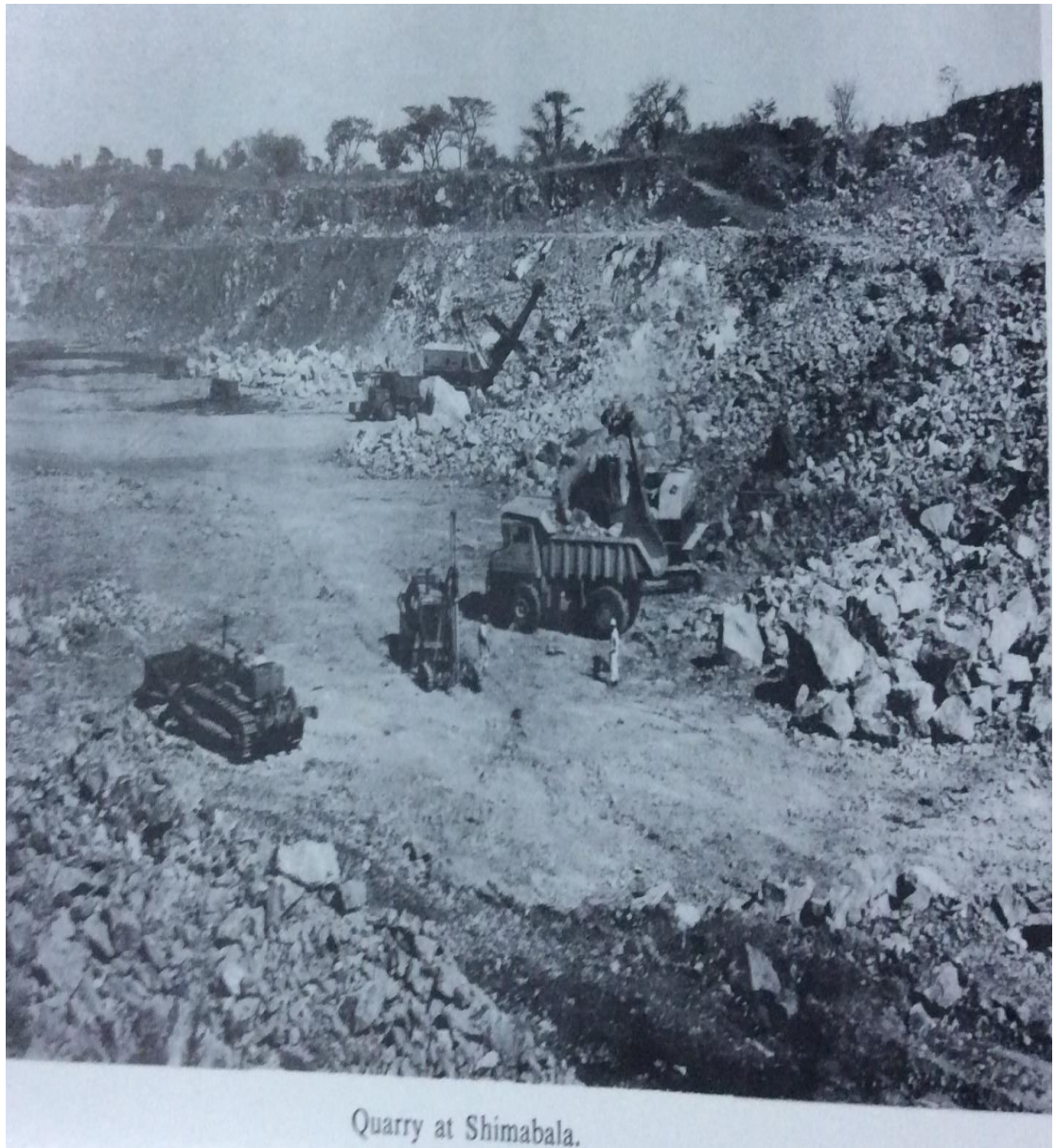
Source: Chilanga Cement Limited *Annual Report*, 1969

**APPENDIX VI: Chilanga Factory School, 1969**



Source: Chilanga Cement Limited *Annual Report*, 1969

**APPENDIX VII: Quarry at Shimabala, 1966**



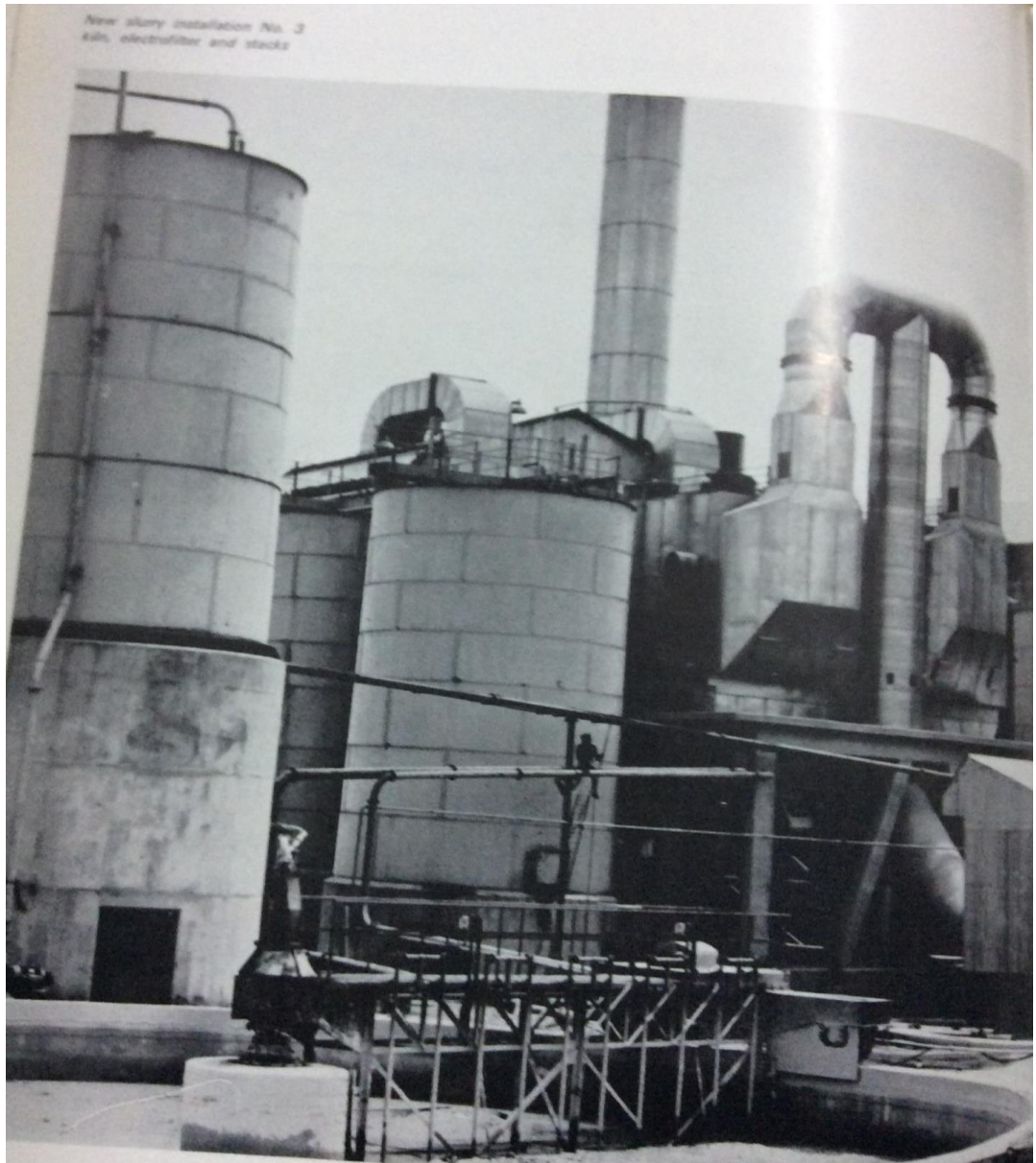
Source: Chilanga Cement Limited *Annual Report*, 1966

**APPENDIX VIII : Occupational Safety and Health measures, 1995**



Source: Chilanga Cement Annual Report PLC, *Annual Report* , 1995.

**APPENDIX IX:** Kiln 3 installed in 1967



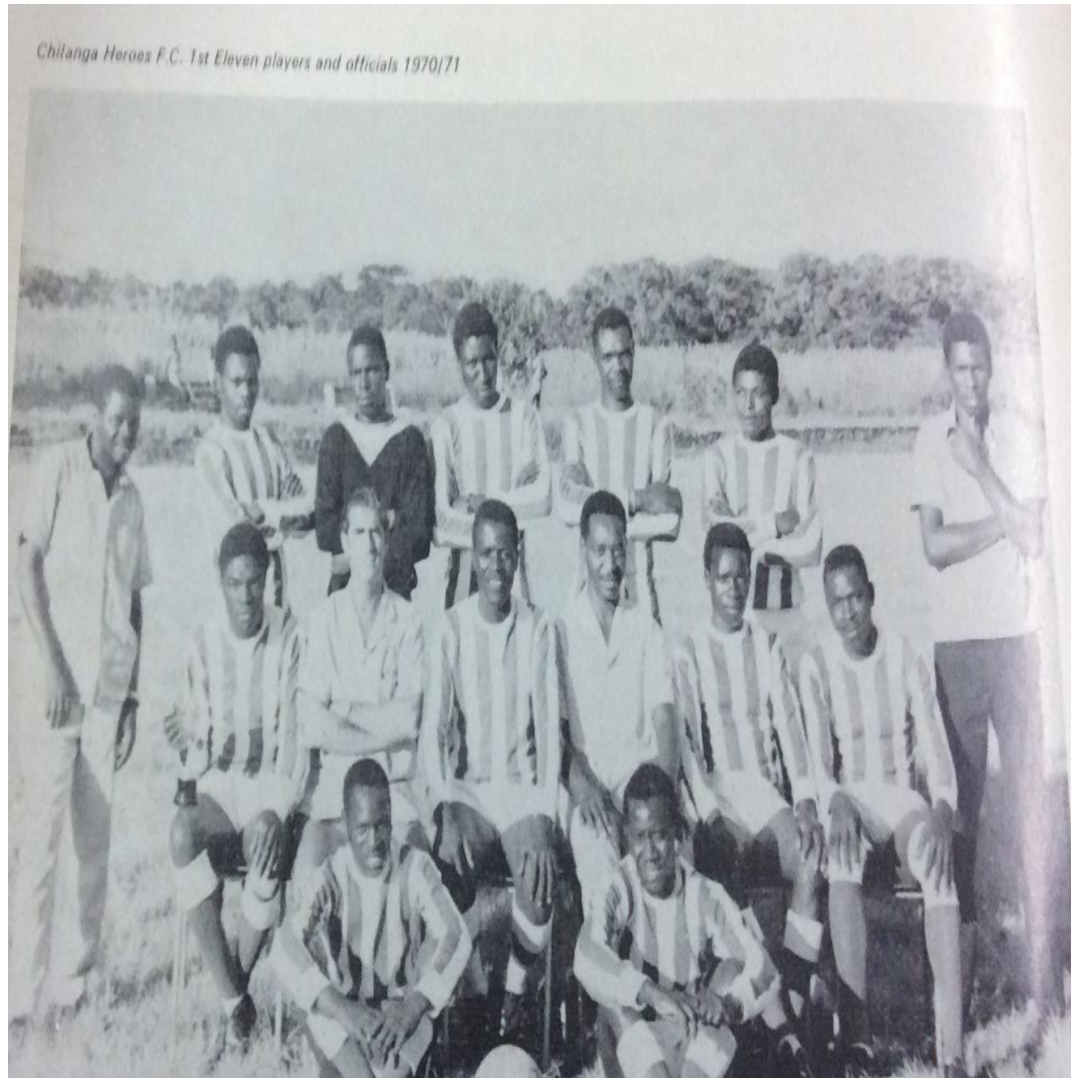
Source: Chilanga Cement Limited *Annual Report*, 1967.

**APPENDIX X:** Tennis Courts from the Main Clubhouse, 1963



Source: Chilanga Cement Limited *Annual Report*, 1963.

**APPENDIX XI: Chilanga Football Team, 1970/1971.**



Source: Chilanga Cement Limited *Annual Report*, 1971.

## APPENDIX XII: Activities of the Chilanga Residents Association, 1973.

**CHILANGA RESIDENTS ASSOCIATION**

The history of Chilanga Club is as old as the Company itself. It was established during the early years with the sole purpose of serving the social interests of Company employees. It grew gradually, both socially and financially, and attained its present status. Today the Club is one of the well-known social centres of the City of Lusaka.

To say but a word about the membership, the Club was originally intended for Company employees only and membership was restricted to this objective, but as time went by and 'change of wind' swept across, membership was open to all adults regardless of whether they were Company employees or not. Since then membership has increased to more than 50 times the original number. Entrance fees are K12 per person with annual subscription of K16 per family or K10 per single person.

The social activities and amenities generally provided by the Club are many. There are excellent facilities for those who enjoy swimming and there is a well maintained swimming pool. For the golfers, a nice golf course covering a wide space of land is reserved for them. Another popular game is tennis which is played practically every evening. Then there is Bingo, a popular game for gamblers, it is held every Friday evening. Or perhaps one would like to have a drink in a quiet, serene and pleasant atmosphere while playing several indoor games in the Club Hall!

Unfortunately, the Club, just like any other organisation, has had some teething problems (the Club does not have teeth by the way!) which mainly arise from insufficient funds. Nevertheless, the Club is being re-organised so as to keep pace with modern times. It is hoped that with these changes made, men and women who have exclusive taste will enjoy the facilities.

**Chilanga Club**  
By Mr. V. K. Daka.

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**HIRE OF WELFARE HALL FOR SOCIAL FUNCTIONS**

NOTICE is hereby given to all Company Employees and, to the public for general information, that the control of all social functions in welfare halls are in the hands of the Welfare Officer to whom enquiries should be directed. This includes all the activities held in halls **EXCEPT** indoor meetings. Applications for the indoor meetings, political or otherwise should be directed to the Secretary four weeks in advance so that special permission may be granted. This includes the Buffalo meetings.

V. K. DAKA Secretary  
CHILANGA RESIDENTS ASSOCIATION

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**WOMEN AT WORK**



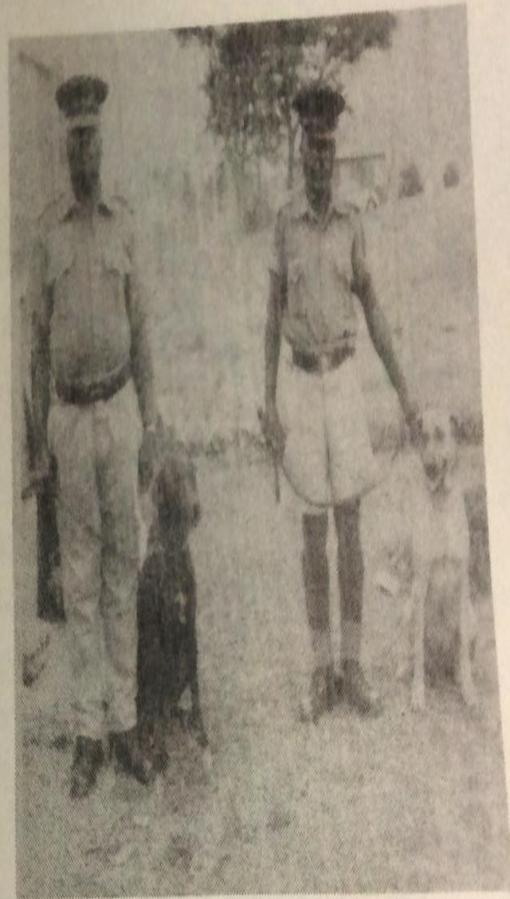
One of the items of the Welfare Officer's programme which has been accomplished is the Gardening and Poultry Club. The women, all wives of Chilanga employees, started the Club in 1970 and utilise the land behind the Welfare Hall. The Club consists of two groups and, as can be seen from the industrious gardeners in the picture, they are conscientious and fulfill the philosophy of self-help by doing all the work themselves. They have also successfully supplied Chilanga employees with eggs for over a year.

Mrs. Mwendapole, Welfare Officer, says that the success of this Club owes a lot to the women having learned the importance of combined effort. Being a new concept in African society, she has found it difficult to achieve teamwork and stresses the importance of the women forgetting their backgrounds and working together for the benefit of their families.

Source: Chilanga Cement Limited. *Chilanga Cement News*, Issue No.1, April, 1973, p.12.

## APPENDIX XIII: Photograph of Zambians trained in Police services, at Chilanga Cement Factory, 1973.

2. Dog Handlers, George Banda, right, and J. Banda, left, are part of the Company's police force (Security Guards). Both men and their dogs were trained at Government Police Training School, Lilayi. Here the men are getting ready to go on patrol around vital Company installations.



Source: Chilanga Cement Limited. *Chilanga Cement News, Issue No.1, April, 1973, p.10.*

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