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**THE ROLE OF MILITARY IN DEVELOPMENT IN AFRICA: CASE STUDY SOUTH
AFRICA AND KENYA**

BY

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**A research Proposal Submitted in Partial Fulfilment of the Requirement for the Award of a
Diploma in International Studies at the Institute of Diplomacy and International Studies**

DECLARATION

This Research Project is my original work and has not been submitted in any other University or Institution of higher learning for the award of any academic qualification.

Signed.....

Date.....

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R140/11602/2014

This research project has been submitted for examination with my approval as University Supervisor

Signed.....

Date.....

DR. PATRICK MALUKI

DEDICATION

This research project is dedicated to my mother Dorcas Mukeni for the sacrifices she made to educate me and her encouragement and support over the years, and to my dear wife Peninnah Musyimi for her support.

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LIST OF ABBREVIATIONS

AIDS – Acquired Immune Deficiency Syndrome

AIS – Automated Identification System

COBOL – Common Business-Oriented Language

CRT – Semi-Automated Ground Environment

DAVEC – Dejen Aviation Engineering Complex

DEFKITCH – Defence Kitchen

DICON – Defence Industries Corporation of Nigeria

DOD – Department of Defence

DRC – Democratic Republic of Congo

ENIAC – Electrical Numerical Integrator and Calculator

GDP – Gross Domestic Product

HDR – Human Development Report

HIV – Human Immune Virus

IC – Integrated Circuit

INGOs – International Non-Governmental Organizations

IT – information technology

KDF – Kenya Defence Forces

KOFC – Kenya Ordnance Factory Corporation

LAPSET – Lamu Port-Southern Sudan-Ethiopia Transport

LDC – Least Developed Countries

MACA – Military Aid to Civil Authority

MEDICAP – Medical Civil Action Program

MEMRI – Middle East Media Research Institute

METEC – Metals & Engineering Corporation

MRE – Meals Ready to Eat

NAVSEG – Navigation Satellite Executive Group

NAVSTAR – Navigational System Tracking and Range

NCS – National Civic Service

NDC – National Defence College

NDP – National Development Plans

OEM – Original Equipment Manufacturer

PLA – People’s Liberation Army

PTY – Propriety

R&D – Research and Development

SAGE – SABRE Global Positioning System

SANDEF – South Africa National Defence Forces

TATC – Tanzania Automotive Technology Centre

UN – United Nations

UNDP – United Nations Development Program

UPDF – Uganda People’s Defence Force

USA – United States of America

VETCAP – Veterinary Civil Action Program

WWII – World War II

ABSTRACT

There is now an increasing awareness by developing countries of their poverty and the slow progress toward industrialisation. This has led to a lot of pressure on the leaders to put in place strategies to combat poverty, ignorance, disease; and to create job opportunities as well as improve the infrastructure. The resources available to provide for all these needs are far from adequate and governments therefore have to utilise all means at their disposal to deal with these challenges. The military is one of these resources but which, unfortunately remains underutilised for national development in most African countries, Kenya included. The question therefore is, what role can the military really play in dealing with some of the challenges and how has it been utilised in both Kenya and South Africa towards this end? The objectives of this study were to assess the role of the Military in development in Kenya and South Africa, establish how militaries have contributed to development globally, identify the main areas of development in which African militaries can participate and carry out a comparative analysis of military contribution to development in South Africa and Kenya. The study was carried out in South Africa and Kenya and relied on primary and secondary data. Secondary sources included books, Journals and periodicals from the NDC library; as well as government documents, policy reports, newspapers, and online sources. Primary data was sourced from senior military officers from Kenya and South Africa, the target population being respondents from the Kenya Defence Forces and members of the South African National Defence Forces holding relevant positions in these institutions. The data sampling for the study was the Purposive/Judgmental Sampling method and the researcher interviewed 20 senior military officers from the Kenya Defence Forces, and 8 from South African Defence Forces and other experts with background information on the South African National Defence Forces. Validity and reliability of the data is high as the respondents were senior officers holding key appointments. The distance from Kenya to South Africa is approximately 3750 kilometres and this made it difficult to access data source from the country. To overcome this limitation, the study relied on South African military officers and experts based within Kenya as well internet to reach respondents in South Africa. The study also had limitation in accessing classified government documents in both countries. To overcome this limitation, the researcher focused on data from unclassified and declassified documents, and interviews. The study was conducted within a period of one-year from July 2014 to June 2015. The researcher established that militaries from various parts of the world play a key role in development. Areas in which militaries have been used for development include engineering and construction, Industrial development, Agriculture and Medical. Defence industry in the US for example led to technology spinoffs in aviation technology, computer science, the semiconductor, lithium battery and the GPS. In Africa, countries such as Egypt, Sudan, Ethiopia and South Africa have relatively advanced military industries, while Namibia, Senegal, Nigeria, Uganda and Tanzania are developing capacity in this area. In all cases, the study established these industries contribute to development. The study also established that Kenya's military industry is still in its infancy stage, but there are plans towards enhancing the capacity.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

The emergence of the modern military can be traced back to medieval Europe, during which England and France were engaged in the Hundred Years War. It is during this period that groups of professional fighters emerged, who came together to fight for a pay. The groups consisted of leaders and men from different nationalities, and they could change their allegiance depending on the payment for their services. It was not until after the end of the Thirty Years War in the seventeenth century, that armies that consisted of a leader, men and some bureaucratic administration emerged in Europe. The leaders of these armies were either nobles or lords while the soldiers came from among the peasants who also provided manual labour and paid taxes. While these military organizations, strategies and weaponry are very different from the modern day military, the role remains the same, which is primarily to secure the country against external threats to its sovereignty and territorial integrity. Military service in most countries today is also voluntary with no class division unlike in medieval Europe.

In Kenya, the constitution stipulates the roles of the Kenya Defence Forces as the “defence and protection of the sovereignty and territorial integrity of the republic, assistance and cooperation with other authorities in situations of emergency or disaster, and restoration of peace in any part of Kenya”¹. These roles are similar for most of the African militaries regardless of their size and historical backgrounds. To prepare these militaries to effectively carry out their responsibilities, the respective countries have invested enormous resources in form of equipment, training and upkeep for the forces. The resources constitute a significant portion of the Gross Domestic Product, which could otherwise have been utilised for national development. This phenomenon could be viewed in realists’ lenses through which they postulate the self-help doctrine. Realists

¹ The Kenya Defence Bill Article 241 (3) of the Kenya Constitution 2010

warn, “States are in a self-help system and have to do whatever they think is necessary for their own preservation, since no one can be relied on to do it for them”². Thus, each state strives to establish a military force to protect it from external aggression.

The end of the Cold War saw the emergence of a more holistic definition of security that moves away from confrontation models of security and state behaviour. According to this model, the heart of international security, therefore, includes not only military concerns but also issues related to the broader well-being of the earth, and human security.

The idea of Comprehensive Security was first advocated by Olaf Palme and includes cooperation, both military and economic, and confidence building. Human security is an essential part of this comprehensive security model. It includes freedom from hunger, disease, repression, environmental issues, and security of the people from their own government's policies, international terrorism, external intervention, genocide, and ethnic cleansing³. In an effort to fill the post-Cold War national security conceptualization vacuum, Barry Buzan offers a definition that is sensitive to traditional state sovereignty as well as identity and cultural concerns. For Buzan “security is about the pursuit of freedom from threat and the ability of states and societies to maintain their independent identity and functional integrity against forces of change which seem hostile.”⁴

The fact that most of the African militaries have never been involved in an inter-state conflict means that they spend most of their time performing secondary roles, and training. The training achieved has, over time, made the military home to some of the best-trained personnel in these countries, equipped with a range of unparalleled skills across different disciplines. The countries can

² Kenneth N Waltz, *Theory of International Politics* First Edition (McGraw-Hill, inc.1979), p109

³ Constantine P. Danopoulos et al, *Nation Building, and National Identity: Comparative Perspectives*, (Praeger, Westport, CT. 2004), p 4

⁴ Barry Buzan’s definition of security as cited in Constantine P. Danopoulos et al, *Nation Building, and National Identity: Comparative Perspectives*, (Praeger, Westport, CT. 2004), p6

utilise some of these skills for national development at minimal costs, since the military personnel are already earning a salary, and most of the equipment is already in place.

1.2 Statement of the Problem

There is now an increasing awareness by developing countries of their poverty and the slow progress toward industrialisation. This has led to a lot of pressure on the leaders to put in place strategies to combat poverty, ignorance, disease and to create job opportunities, as well as improve the infrastructure. The resources available to provide for all these needs are far from adequate, and governments therefore have to utilise all means at their disposal to deal with these challenges. The military is one of these resources but which unfortunately remains underutilised for national development in some of the countries, Kenya included. What role then can the military play in dealing with some of the challenges and how has it been utilised in both Kenya and South Africa?

1.3 Objectives

1.3.1 General Objective

To assess the role of the Military in development in Kenya and South Africa.

1.3.2 Specific Objectives

1. To examine how militaries have contributed to development globally.
2. To identify main areas of development in which African militaries can participate.
3. To carry out a comparative analysis of military contribution to national development in Kenya and South Africa.

1.4 Hypotheses

1. The military plays a key role in national development in Kenya and South Africa
2. The military does not contribute to development in South Africa and Kenya.
3. The military industry is a key driver of industrialization in Kenya and South Africa.

1.5 Justification of the Study

Kenya has a well-trained, equipped and disciplined military force that has been able to perform its duties with dedication since independence. The country has obviously spent a significant portion of its resources to maintain the force, making it one of the best in the third world. The focus of Kenya Defence Forces, as stipulated in the constitution, is to defend and protect the sovereignty and territorial integrity of the Republic of Kenya, assist and cooperate with other civil authorities in situations of emergency and disaster; and restore peace in any part of Kenya affected by unrest or instability as assigned⁵. The country's sovereignty and integrity are the most important interests, and all efforts must as of necessity, be put in place to achieve it. However, alongside the external threats, there are other equally urgent threats within that the state cannot ignore if the country is to achieve its stated goals under Vision 2030: that of becoming a newly industrialized country. These threats, which exist mainly in the developing countries, Kenya included, are the human security threats.

According to the United Nations Trust Fund for Human Security, human security threats comprise “poverty, climate-related disasters, organised crime, human trafficking, health pandemics, and sudden economic and financial downturns”⁶. For the government to successfully deal with these threats, it requires a concerted effort of all its institutions, including the military. There is no denying that the military has now and again played a leading role in dealing with some of these threats when called upon, but this has largely been reactive rather than proactive. Kenya has no strategies in place to utilise military skills and equipment necessary to help deal with human security threats and spur national development. Even the Kenyan Vision 2030 surprisingly does not take into consideration the role the military can play towards its attainment.

⁵ The Kenya Defence Bill Article 241 (3) of the Kenya Constitution 2010 Op Cit

⁶ Human Security, 1 December 2011: Human Security Unit United Nations, New York.

<https://docs.unocha.org/sites/dms/HSU/Publications%20and%20Products/Human%20Security%20Tools/Human%20Security%20Presentation.pdf>. Accessed on 23 March 2015

This study will hopefully, invigorate policy makers to come up with strategies on how best to utilise the military for national development. Leaders should also be alive to the fact that militaries played pivotal roles in the expansion of economies of most of the developed and middle-income countries. It is therefore imperative that Kenya, as a country should come up with the necessary steps, (including a suitable role for the military), that will drive its development agenda. The military industry, if allowed to prosper, will likely have a spin-off effect on other industries, and hence spur economic growth. In the industrialised countries, military technology transfer helped transform economies by using the knowledge acquired in making weapons to stimulate industrialization. In England for instance, Mr Watt, a steam ship engineer, had to rely on John Wilkinson, a cannon-borer, to bore the condenser cylinders for his steam engines. In France, the navy provided the market that gave French entrepreneurs an opportunity to catch up with British advances in ferrous metallurgy. In the United States, what came to be termed the ‘American system of manufacturing’ emerged from the New England armoury system of gun manufacture⁷.

For Kenya to develop, it requires contribution from all public and private institutions, the military included. The country must therefore ignore those who argue that having the military participate in development interferes with its ability to carry out its primary function of defence against external aggression. The military can without doubt play a significant role in national development without affecting its ability to perform its primary role of defence. This concept has successfully been applied by some countries including Israel, Thailand, Pakistan Turkey, China and Vietnam. Kenya being a country constrained by inadequate funding, resources and skilled work force must diligently utilize the little available as fully as possible and therefore does not have the luxury to employ military personnel and resources in a standby role ready to defend the

⁷ Vernon W. Ruttan, *Is War Necessary for Economic Growth?: Military Procurement and Technology Development*, (New York, Oxford University Press, 2006), p 3

country against a threat that may never materialise. When the country is not involved in hostilities, the military should participate in national development.

1.6 Literature Review

Deployment of military forces on development tasks is not new and various countries including developing ones have used their militaries to carry out different types of national development tasks over the years. Many of the items that we enjoy today are as a result of military spin-off technology. Spin-off has many benefits to the citizens of a country including creation of employment, giving a boost to related industries, development of technical manpower, enlargement of knowledge base, strengthening of the infrastructure, and benefit to civilian technological development⁸. Whether to deploy the military for non-core developmental tasks however remains controversial with those who support it arguing that at a certain stage of development of an under-developed country, the military is one of the few institutions that can supply the necessary management skills for a commercial enterprise⁹. They also contend that the military may be relied upon for the effective functioning of certain industries considered critical for industrial development such as the steel industry, hence the need to control such industries to guarantee uninterrupted supply¹⁰. Those against the use of military for this type of work on their part argue that the military would be intervening in areas of production that could be conducted more efficiently by private enterprise, and that intervention in the commercial sector gives the military excessive power, placing it in direct competition with civil authorities¹¹. They also argue that, while it may be true that officers in the military acquire certain managerial skills through

⁸ Jong-Tsong Chiang, *Technological "Spin-Off": Its Mechanisms and National Contexts* Massachusetts Institute of technology 50 memorial drive Cambridge. Massachusetts, 1991

⁹ Lt A D Shaw, *the Military as a Contributor to National Development* : <http://scientiamilitaria.journals.ac.za/pub/article/viewFile/737/740>. Accessed 15 August 14

¹⁰ Ibid

¹¹ Todd Sandler and Keith Hartley, *The Economics of Defence*, Cambridge, (University Press, 1995), p200

their training and experience, there are considerable differences between the management of military resources and enterprise¹².

Militaries serve many positive roles for development so long as good civil-military relations are in place. For instance, they minimize violent conflict, provide security so that civilians can carry out productive activities, reduce insecurity and instability risks to increase foreign investment, create demand for domestic industries and Research and Development (R&D), and provide discipline and employment to a significant proportion of the population. Each of these military-development connections is inherent in the military's very existence, regardless of its function. To accelerate socio-economic development therefore, military tasks could be reconfigured to accommodate provision of both the traditional state-centric security, and human security, especially when few external conflict threats exist. This concept has worked well in Senegal where the Senegalese Armed Forces have constituted what they refer to as an 'Army-Nation' component, which conducts public health care, and infrastructure development.

Militaries have comparative advantages in form of resource, manpower, infrastructure, and technology. The military has human capital in a variety of skills, and has no security limitations in areas of operation, as it will ensure security its personnel engaged in development activities where civilian organizations cannot work due to insecurity. The military also has adequate means of transportation, which minimizes the need to acquire new equipment¹³. These are advantages that African countries can exploit for national development.

The other opportunity open to the military to participate in development is through military industries. This however is not without its controversies; the military and military industries to some, is a burden to the citizens, rather than a partner in national development. For instance, during the cold war, some argued that in the US, the defence and defence-related research and

¹² Ibid

¹³ Secure Nation, <http://securerelation.wordpress.com/2010/02/23/the-role-of-the-military-as-a-socioeconomic-development-implementer/> Accessed on 27 Aug 14

technology development crowded out scientific and technical capacity away from commercial application necessary for industrial growth. Commercial industries were on the other hand, seen as being sluggish in the uptake of the technological transfer opportunities resulting from military and defence-related R&D, while Defence contractors are often accused of regularly protecting their military and defence-related R&D from their commercially related R&D¹⁴.

In their two confrontational and key contributions, Emile Benoit (1973, 1978) discovered a net positive relationship between defence spending and economic growth for twenty-four developing countries for the period 1950-65. The research pointed to an apparently positive relationship between military expenditure as share of the GDP, in which an increase in military expenditure may have resulted in economic growth for the countries surveyed¹⁵.

Contrary to Benoit's assertion of positive relationship, the military expenditure by the superpowers during the cold war were found to have had the exact opposite outcome, negatively affecting economic growth by crowding out private and public investment. The military industry is also thought to divert R&D resources from civilian use¹⁶.

In their book, "*The Economics of Defence*", Todd Sandler and Keith Hartley argue that Defence expenditure can indirectly support growth by maintaining internal security, as this will create conducive investment environment, which will attract foreign investment and with it technology transfer. Military related development may also divert resources away from public and private sector which are more growth promoting than the military industry. Moreover, where resources meant for private investment are crowded out by military industry investment, economic growth is likely to be negatively affected in the long run. If, in addition, a nation imports much of its

¹⁴ Vernon W. Ruttan, *Is War Necessary for Economic Growth? Military Procurement and Technology Development*, New York, (Oxford University Press, 2006), p4

¹⁵ Todd Sandler and Keith Hartley Op Cit

¹⁶ Ibid 201

arms, then defence activities can lead to an adverse balance of payments that can have a negative impact on potential growth-promoting capital inflows¹⁷.

The defence production in some developing countries such as Brazil and India is in the export sector, thereby benefitting from technologically advanced methods. For these countries, Defence will channel rather than divert resources to the export sector and promote growth. Since defence can both stimulate and inhibit growth, the net impact of the defence depends on the relative strength of opposing influences. A net beneficial growth is likely to be achieved if defence has a net beneficial effect on growth, and this is most likely to happen in Least Developed Countries (LDCs) where there are more avenues from which benefits can be derived.¹⁸

Weapon engineering although not directly contributing to wealth has several benefits. By producing own military equipment, countries save on foreign currency thus freeing money that would otherwise have been used, for other developmental purposes. The industries also create employment opportunities for the citizens as well as developing the country's technological base. Some of the military industries have a dual purpose in that they also produce products for civilian use such as agricultural equipment and vehicles that contribute directly to economic growth. There is also the risk that countries that supply military wares could for one reason or another refuse to sell them or the necessary spare parts and ammunition when need, thereby compromising a country's ability to pursue its national interests.

The realism theory explains why states spend enormous national resources to establish and maintain a military force. It postulates that it is not enough for a country to depend on others for supply of goods and services it does not supply. Such high interdependency may subject the

¹⁷ Ibid 202

¹⁸ Ibid

country to unacceptable vulnerability that comes with such relationships; hence, states will take whatever action is necessary to achieve self-sufficiency.¹⁹

According to Kenneth Waltz, states have to do whatever they can to survive in the international system since there is no overarching authority they can rely on to guarantee their survival.²⁰ Because of this state of anarchy in the international system, Kenneth Waltz argues, “States must rely on means they generate and arrangements they can make themselves. Self-help is necessarily the principle of action in an anarchic order”.²¹

Hans J Morgenthau postulates that the relative power of nations depends on the quantity and quality of human beings, and quality of military establishment.²² This theory explains why countries should pursue policies that promote the quality of its citizens, while balancing with the need to maintain a well-resourced and equipped military force.

The technology of modern warfare transportation and communication has made the overall development of heavy industries an indispensable element of national power. The quality of and productive capacity of the industrial plant, the know-how of the worker, the skill of the engineer, the inventive genius of the scientist, and the managerial organization are the factors upon which the industrial capacity of a nation and hence power depend²³

Like the realist theory, the state in the liberal paradigm is dominant. Unlike the former, however, the latter does not consider the state as the only actor in the international system. The theory is characterised by a multiplicity of actors with a bias towards non-state actors, such as civil society institutions and the private sector²⁴. Although the military in this framework continues to occupy

¹⁹ Op cit, Kenneth Walt, p107

²⁰ Ibid Kenneth Walt , p109

²¹ Ibid Kenneth p111

²² Hans J Morgenthau, *Politics Among Nations: The struggle for Power and Peace*, (New Delhi, Kalayan Publishers 2001), p249

²³ Ibid Hans J Morgenthau p 137

²⁴ Laurie Nathan, *Stabilizing civil–military relations in Africa*, Conference on ‘Military and civil society’, Africa Leadership Forum, 23–25 September 1996

a coveted place as the ultimate protector of the state, liberal democratic principles are well respected and the role of civil society as well as a preference for the subordination of the military to civil authority, are regarded as intricate components of civil–military relations²⁵.

Military has been used to spur development in many countries in various ways, and the United States of America has done particularly well when it comes to innovation of military technology. This technology later became available for civilian use and has had a huge impact worldwide. This includes semiconductors, computers, nuclear power, aircraft and internet among many others²⁶. The United States ‘American system of manufacturing’ emerged from the New England armoury system of gun manufacture²⁷. The corps of engineers on the other hand has been instrumental in the construction of many dams and canals while the Special Forces have been operating assistance missions in the poorer areas such as the Appalachian. Before World War II, the German military was widely engaged in road, rail and bridge construction²⁸. In England, Mr Watt, a steam ship engineer utilized military technology by John Wilkinson, a cannon-borer, to bore the condenser cylinders for his steam engines²⁹. The British Army in addition played an important humanitarian assistance role in colonial India where they constructed irrigation canals such as the Ganges Canal. The canals were also used for transportation, and were quickly followed by works to provide portable water for the rapidly growing Indian cities, and hydroelectric power generation for the industry, all led by the military³⁰. This helped open up India and laid the foundation for development. In France, the navy

²⁵ H Born (ed.), *Parliamentary oversight of the security sector: Principles, mechanisms and practices*, Inter-Parliamentary Union and Geneva Centre for the Democratic Control of Armed Forces, Geneva/Belgrade, 2003, p3

²⁶ Jong-Tsong Chiang, *Technological "Spin-Off": Its Mechanisms and National Contexts* Massachusetts Institute of technology 50 memorial drive Cambridge. Massachusetts, 1991

²⁷ *Ibid*

²⁸ *H.R. Heitman*, *The Potential Role of the Military in National Development*: <http://scientiamilitaria.journals.ac.za/pub/article/view/782/0>. Accessed on 10 Sep 14

²⁹ Vernon W. Ruttan, *Is War Necessary for Economic Growth?: Military Procurement and Technology Development*, (New York, Oxford University Press, 2006), p 3

³⁰ *Op Cit.* Harry F. Waterhouse

provided the market that gave French entrepreneurs an opportunity to catch up with British advances in ferrous metallurgy³¹.

The involvement of the People's Liberation Army (PLA) of China exemplifies military participation in the manufacturing sector. Spin offs of some of the military products to civilian use and engagement of the military industry in broader liberalization of the Chinese economy played a key role in national development. Today the PLA runs farms, factories, mines, hotels, paging and telephone companies and airlines, as well as major trading companies, many of these which have become firmly involved in the global economy³².

In Africa, several countries have engaged their militaries in developmental activities ranging from weapon engineering to agriculture. The Egyptian military industry for example plays a key role in the country's development. Some of its products include laptops, flat-screen televisions, sewing machines, refrigerators, pots and pans, plastic table covers, butane gas bottles, olive oil, and bottled water, medical equipment, tourism, real estate, and gas and energy³³. The military is also in partnership with German and Danish companies for wind power technology, and with Chrysler for the assembly of the Jeep Wrangler for military use. The company also produces Jeeps for sale to the civil population on a parallel production line³⁴.

The Namibian military is involved in vehicle manufacture, fittings and repairs mainly for the defence market. The company also make other products such as trailers, tractors, trackers and fencing. The Ethiopian military has a defence industry with several organizations including the Hibret Machine Tools, which is a military-civil engineering complex specializing in the production of medium weapons for the Ethiopian National Defence Force. Bishoftu Motorization Engineering Complex repairs and overhauls heavy armament, tanks and military vehicles. The

³¹ Ibid

³² Ibid

³³ Sayyed Misha'al military production, as cited by Dr. Nimrod Raphaeli, <http://www.memri.org/report>. Accessed on 6 Nov 14

³⁴ Ibid

Dejen Aviation Engineering Complex (DAVEC) is a centre for overhauling and upgrading of military aircraft and Manufacture of various airframes, and military and civil boats from fibreglass and composite materials. In addition, it manufactures aircraft parts and accessories³⁵. The Ethiopian military industry is also involved in the \$5 billion Grand Ethiopian Renaissance Dam where it was contracted to build the electro-mechanical works. It is also building 10 sugarcane plantations and processors at a cost of about \$5 billion, and is the main contractor for a 50 billion-birr Coal Phosphate Fertilizer Complex³⁶.

The Sudan's defence industry- the Military Industry Corporation (MIC), is the third largest weapons manufacturer in Africa, after Egypt and South Africa. MIC main production categories are Ammunition, conventional weapons, armoured vehicles and main battle tanks, gear, outfits, and equipment, electronics, aviation, marine and vehicles. It also produces a variety of civilian products used for railway, electricity, cement, and car production. In 2009, the complex produced its first aircraft: a USD 15,000 two-seat propeller plane called the 'Safat 1'³⁷.

In Senegal, the military provides about 80 percent of medical care through the twenty-nine military medical establishments, and is involved in provision of health service including programs targeting AIDS, malaria, tuberculosis, and maternal and infant mortality³⁸.

The Ugandan military is involved in the construction of the Standard Gauge Railway that will connect Tororo to Nimule via Gulu, and from Kampala to Kasese and on to Mpondwe in Western Uganda, and also from Pakwach to the Democratic Republic of Congo (DRC) border³⁹.

³⁵ Ibid

³⁶ William Davison: <http://www.bloomberg.com/news/2013-02-18/ethiopian-military-run-corporation-seeks-more-foreign-partners.html>. Accessed on 6 Nov 14

³⁷ Military Industry Corporation Human Security Baseline Assessment (HSBA) for Sudan and South Sudan : <http://www.smallarmssurveysudan.org/>. Accessed on 20 sep 14

³⁸ Biram Diop: Civil-Military Relations in Senegal, http://www.ccd21.org/military_handbook/volume_two/12_senegal.pdf. Accessed on 9 Nov 14

³⁹ Uganda Media Centre: <http://www.mediacentre.go.ug/news/president-launches-standard-gauge-railway-line>. Accessed on 10 Nov 14

The South African military contributes to development through the military industry. Denel (Pty) Ltd, a state-owned company produces a variety of military equipment including artillery, munitions, missiles, aerostructures, aircraft maintenance, unmanned aerial vehicle systems and optical payloads⁴⁰. Between 1994 and 2009, South Africa sold arms worth more than US\$600 million to more than 90 countries⁴¹.

The South African military is also involved in concerted efforts to fight poverty and inequality but this, it has been argued poses dangers, both for civil and defence forces. According to Jacklyn Cock, prolonged exposure of the South Africa National defence Forces (SANDF) to such tassels will also have a politicising effect⁴².

There is no much documentation on the direct contribution of the Kenyan military in national development, with the only available data being that obtained from the Kenya Ordnance Factory Corporation (KOFC) website. The corporation manufactures military hardware under license from FN HERSTAL of Belgium and a wide range of domestic products including farm produce, bottled water, bakery products and flour milling as value addition of the farm produce⁴³. The Military has also been involved in a nationwide tree planting exercise in an effort to restore Kenya's forest cover. A privately owned UK-based military hardware manufacturer Osprea Logistics is set to open a Sh3.5 billion plant in Mombasa, and this is expected to create employment for over 200 people within the first-year of production⁴⁴.

The decision as to whether or not to deploy military forces for non-core tasks of national development ultimately lies with each individual country. Perhaps what countries should consider

⁴⁰ ARMSCOR: <http://www.armscor.co.za/Services/Services.asp>. Accessed on 15 Feb 15

⁴¹ *Business Day*, 14 April 1998 as cited by Peter Batchelor: South Africa's Arms Trade and the Commonwealth: A Cause for Concern?

⁴² Jacklyn Cock and Penny McKenzie, *From Defence to Development*, (Western Cape, National Book Printers, 1998), p33

⁴³ Kenya Ordnance Factories Corporation, <http://www.kofc.co.ke/>. Accessed on 11 Feb 15

⁴⁴ Rawlings Otini, Armoured car dealer to open plant in Kenya *Business Daily* Thursday March 26, 2015 <http://www.businessdailyafrica.com/Corporate-News/Armoured-car-dealer-to-open--plant-in-Kenya-/-/539550/1618520/-/10ajkkq/-/index.html> accessed On 6 Nov 14

is, which private companies normally perform these tasks, how efficient are they, and most importantly, who owns them and how do they help the country develop its capacity to carry out such tasks in the long term? This is because in most developing countries, foreign owned companies whose interests are primarily profits undertake most of these tasks. These multinational companies and their home countries will obviously resist any attempt to involve the domestic military in development tasks as they stand to lose once such a country develops its own capacity. The biggest resistance against deployment of military for such undertakings will therefore undoubtedly come from those who stand to lose; hence, they will go to any length to oppose it. As Kenneth Waltz put it, states must do whatever they can to survive in the international system since there is no overarching authority they can rely on to guarantee their survival.⁴⁵ The African states must be alive to this fact and take all necessary measures to safeguard their countries against exploitation from external forces⁴⁶. The anarchy inherent in the international system makes it necessary for countries to individually take responsibility for their survival in the self-help system we live in.⁴⁷ In any case, the relative power of nations depends on the quantity and quality of human beings, and quality of military establishment.⁴⁸ This is the reality of international relations and African leaders must therefore utilise all resources at their disposal for survival. The argument that involving the military in national development crowds out the private sector is therefore a self-serving one advanced by countries that own such companies.

1.8.1 Gaps in the Literature

It is evident from the literature review that studies have been done on the role played by the military in development in several countries but no study has yet been carried to establish how the

⁴⁵ Kenneth N Waltz, Op Cit p109

⁴⁶ Ibid

⁴⁷ Ibid

⁴⁸ Hans J Morgenthau, Politics Among Nations: The struggle for Power and Peace, (New Delhi, Kalayan Publishers 2001), p249

Kenyan military has contributed to development beyond its traditional task of national defence. This study is therefore justified in examining the role of military in development in Africa, with emphasis on a comparative case study of South Africa and Kenya.

1.7 Theoretical Framework

This study is anchored on the realist theory. The realist theory was considered relevant to the study based on its state-centric bias. It explains why states spend enormous national resources to establish and maintain a military force. It postulates that it is not enough for a country to depend on others for supply of goods and services it does not supply. Such high interdependency may subject the country to unacceptable vulnerability that comes with such relationships; hence, states will take whatever action necessary to achieve self-sufficiency.⁴⁹

According to Kenneth Waltz, states have to do whatever they can to survive in the international system since there is no overarching authority they can rely on to guarantee their survival.⁵⁰ Because of this state of anarchy in the international system, “states must rely on means they generate and arrangements they can make themselves. Self-help is necessarily the principle of action in an anarchic order”.⁵¹

Hans J Morgenthau suggests that the relative power of nations depends on the quantity and quality of human beings, and quality of military establishment.⁵² This fits in well in the study as it explains the need by countries to pursue policies that promote the quality of its citizens, while balancing with the need to maintain a well-resourced and equipped military force. The main proponents of realism are Thucydides, Niccolo Machiavelli, Hans J Morgenthau and Kenneth Waltz.

⁴⁹ Op cit, Kenneth Walt, p107

⁵⁰ Ibid Kenneth Walt, p109

⁵¹ Ibid Kenneth, p111

⁵² Hans J Morgenthau, *Politics Among Nations: The struggle for Power and Peace*, (New Delhi, Kalayan Publishers 2001), p249

1.8 Research Methodology

This section explored the methodology of the study in responding to the research objectives, the study sample and instruments for the study. The research relied on both the primary and secondary data. Secondary sources included books, Journals and periodicals from the NDC library; as well as government documents, policy reports, newspapers, and online sources. Primary data was sourced from senior military officers from Kenya and South Africa. The study however largely relied on secondary sources.

Nachmias and Nachmias argue that secondary data may be the only data available for the study of certain research problems.⁵³ Nachmias also argues that secondary data enables the investigator to search through a wide range of materials covering different areas and eras, which may result in greater scope and depth than is possible when using a single primary data⁵⁴. Secondary data can also simplify the study of comparative case studies.

The main sources of data used for this research were secondary sources including; books, journals, government publications, periodicals, International Agencies and International Non-Governmental Organizations (INGOs) publications and various reports from International Organizations such as UN, Bureau of Statistics, archival records etc.

This study employed the qualitative research approaches. The method was adopted because in data collection the researcher employed different methods such as interviews, which was presented qualitatively by describing data leading to content analysis.

1.8.1 Study design

This study used descriptive design and content analysis. Descriptive design has been chosen based on Donald Kisilu Kombo & Delno claims that descriptive design is not only restricted to fact findings, but may result in the formulation of important principles of knowledge and solution

⁵³ Nachmias D, *Research Methods in Social Sciences*, Fifth edition, Great Britain: St Martin's Press,(1996), p.305

⁵⁴ Ibid, p305

to significant problems.⁵⁵ According to Donald and Delno, descriptive design involves measurement, classification, analysis, comparison and data interpretation.

1.8.2 Study Site

The study site was South Africa and Kenya.

1.8.3 Target Population

The target population is a group from which the researcher is interested in gaining information and drawing conclusions. The target population encompassed respondents from the Kenya Defence Forces and members of the South African National Defence Forces holding relevant positions in these institutions. The target population was the sum total of military personnel in Kenya and South Africa. Kenya has a total 24, 120 active duty personnel while South Africa has 67,373. However, those likely to provide the required data are of the rank of major and above, which about 3% of this numbers; hence, the target population was about 720 and 2,000 for KDF and SANDF respectively.

1.8.4 Sampling method

The data sampling for this study used the Purposive/Judgmental Sampling method. This method is advantageous as it allows the researcher to select the key individuals with the relevant information based on their position.

1.8.5 Sample Size

The researcher interviewed 20 senior military officers from the Kenya Defence Forces, and 8 from South African Defence Forces and other experts with background information on the South African Defence Forces.

⁵⁵ Kombo DK & Tomp Delno L.A, "Proposal and Thesis Writing"(Nairobi GPO(Kenya): Paulines Publications Africa, 2006),p71

1.8.6 Data collection method

Data from secondary sources included books, internet, journals, Government publications and policy documents online, and newspapers, while primary data was collected through a short survey in the field. The researcher used questionnaires to obtain data from the respondents and computer was used to process the obtained data for analysis.

1.8.7 Validity and reliability of data analysis method

Validity is concerned with whether the statistical variable chosen is representative for the characteristic to be studied, and how well we measure the characteristic through the variables selected. Reliability on the other hand enables the researcher establish whether values of a variable are stable with respect to random influences (e.g. do repeated measurements yield identical observations). For this research, the responses were from senior military officers in key positions within the two establishments and therefore, the validity and reliability of the data was high.

1.8.8 Ethical considerations

The dignity, privacy and dignity of the respondents and their Identities were protected. Where necessary, approval of the relevant authority was sought prior to commencement of data collection. The researcher ensured protection of confidentiality and privacy of respondents by keeping all information received confidential; and consent was sought where such information was to be revealed. The survey was on voluntary participation basis and respondents were briefed beforehand as to the purpose of the study. The researcher also adhered to national requirements as required by law.

1.8.9 Scope and limitations

The distance from Kenya to South Africa is approximately 3750 kilometres and this made it difficult to access data sources. To overcome this limitation, the study relied on South African

military officers and experts based within Kenya, as well as sending questionnaires to some officers in South Africa. The study was conducted within a one-year period, from July 2014 to June 2015. The study also had limitation in accessing classified government documents in both countries. To overcome this limitation, the study focused on data from unclassified and declassified documents, and interviews.

1.9 Operationalization of concepts

The following concepts as applied in this study have the following meaning:

National Interests. Those issues a state values and considers important for its survival; including political, economic, cultural and military.

National Security. The ability of the state to defend its values from internal and external threats which include non-military actions, aimed at enhancing a state's capacity to survive as a political entity so that it can be able to exert influence both internally and externally in pursuit of its national interests.

Security. The absence of threats to an institution and individual citizens within a state.

National Security Policy. A framework that outlines the strategy for development, application and coordination of the instruments of national power (Diplomatic, Economic, Military and Information) to achieve national security.

State-centric Security. A realist perspective that views security in its traditional context where the state is the referent object of security and is the most central item of focus in security policy formulation and implementation.

Threat. That which has the ability or capacity to deny a state or an individual its objective of achieving its objectives, and undermine its sovereignty or its dignity, and poses in such a manner that it is likely to do so.

Military Technology Transfer. This refers to the conversion of military technologies to civilian use.

Spin-Off. Spin-off refers to civilian items that are the result of military technology transfer.

Development. This is the process of enlarging people's freedoms and opportunities and improving their well-being.

1.10 Chapter outline

This section provides the layout of the research study and gives the sequence of the chapters and flow of the whole research project. It gives the chapter titles and some detail of the contents as the researcher visualized them. The chapter outline for this study therefore is as follows:

Chapter one introduces the topic of the research study in a bird's eye-view by first setting the broad context of the research study, the statement of the problem, objectives, hypothesis, justification of the study, literature review, theoretical framework, and the research methodology.

The research project is structured in five chapters as follows: Chapter one covered Introduction, Background to the Research Problem, Statement of the Problem, Research Objectives, Hypotheses, Justification of the Study, Literature Review, Theoretical Framework, and Methodology. Chapter two is an overview of military contribution to national development. Chapter three assesses the military industry in Kenya and South Africa, and how it contributes to national development. Chapter four, is a comparative analysis of military contribution to national development in Kenya and South Africa, while Chapter five covers summary, conclusions and recommendations.

CHAPTER TWO

AN OVERVIEW OF MILITARY CONTRIBUTION TO NATIONAL DEVELOPMENT

2.1 Introduction

The history of humankind can be described as that of conflict as competing societies sought to fulfil their needs. As civilization emerged, so did societies that lived by strength, taking what they wanted from others by force. This forced different societies to form organized defences to protect themselves against marauding individuals. Militaries therefore primarily emerged to deal with conflict and without the protection it provides, civilization would not have been possible. The earliest militaries were born out of the need to create an enabling environment within which societies could be more productive and prosperous. The behaviour of the early societies can therefore be viewed through the realist lenses, which postulates that States must rely on means they generate and arrangements they can make themselves. It is therefore clear that from the onset, societies were aware that their survival depended not on the goodwill of others, but on their own initiatives.¹

To carry out its mandate of protecting society more effectively, the military had to adopt technology to improve its capability, most of which was later converted to civilian use. Today, there is hardly any aspect of modern life that did not originate from military technology. Some of these technologies include the internet and computer, certain items of clothing, furniture, some popular models of civilian vehicles and even certain modern building styles were spin-offs of military technologies. Nearly all consumer electronic products of today owe their existence to advancements in military technology. Similarly, the modern society of today originates from the Industrial Revolution, and industrialization itself is directly linked to changes in military technology. Industrialization began with the production of arms, and since the Industrial

¹ Kenneth N Waltz, *Theory of International Politics* First Edition (McGraw-Hill, inc.1979), p107

Revolution, military technology has remained the driving force in industrial production although military goods might not comprise the greatest percentage of output².

There are several reasons why military technology remains important in industrial production, the main one being that manufacturing has become an increasingly important factor in the outcome of war. The numerous wars that have been fought have also greatly contributed to industrialization as virtually all of the involved nations' industrial output went into the war effort. The military itself has been at the forefront of managing the development of new technology, leading to increased manufacturing capacity of States during wars. Furthermore, armament makers developed many basic industrial production techniques.

Militaries in many countries continue to be innovators as they strive to produce better and more effective weapon systems that enable them to gain strategic advantage over their enemies. In some cases, such innovations are carried out through award of defence contracts to independent entities. Many of the items that are a spin-off of military technology and are now in civilian use would probably not have received adequate funding if they were not in the first place meant for military use. Generally, weapon related Research and Development (R&D) is considered to be at least ten years more advanced technologically than comparable consumer products. As new technologies become declassified and less costly, they find new uses in consumer products³.

Today a considerable number of manufacturing processes and methods of production are the result of military technological development. Military items have consequently played an important role in the design of many types of manufactured things in civilian use today. Some of the items initially manufactured for military application have been converted for civilian use, while in some cases military technology has been modified for civilian use.

² Military Technology Transfer: <http://www.aeragon.com/>. Accessed on 2 Oct 14

³ Ibid

2.2 Military Technology Spin-Offs

Spin-off has many benefits to the citizens of a country, including creation of employment, giving a boost to related industries, development of technical manpower, enlargement of knowledge base, strengthening of the infrastructure, and benefit to civilian technological development⁴. Spin-offs involve technology transfer from military use for which the technology was initially intended, to civilian use through personal contact, R&D cooperation between military and civilian organizations, technical consultation, technology demonstration, technical data provision, publications, conferences, and the mobility of personnel to civilian industry. There are also instances where the military technology has dual use, meaning it has both military and civilian application. This could be the case either for the entire equipment or for certain components of the whole. In such circumstances, technological transfer could take place earlier than where such technology was purely for military application with few restrictions.

The United States of America has done particularly well when it comes to innovation of military technology. This technology later became available for civilian use and has had a huge impact on the world we live in today. This includes semiconductors, computers, nuclear power, aircraft and internet among many others. In semiconductors, both transistors and integrated circuits (ICs) were invented in the U.S. whose dominant position in the world market was not challenged until the 1980s. The United States introduced the world's first fully electronic computer model, and the military played a major role in its development. Semiconductors that is, transistors and integrated circuits, and electronic computers together triggered a technological paradigm shift⁵. Revolutionary miniaturization, data processing, digital communications, et cetera are all associated with the new information technology (IT) paradigm. The new computer-based automation and the integration of computing and communications initially developed for military

⁴ Jong-Tsong Chiang, Technological "Spin-Off": Its Mechanisms and National Contexts Massachusetts Institute of technology 50 memorial drive Cambridge. Massachusetts, 1991

⁵ Dosi, Giovanni Technological Paradigms and Technological Trajectories, Research Policy 11, 1982

application have led to techno-economic paradigm shift, laying the foundation for a modern information society⁶.

2.3 Military Contribution to Aviation Industry

The contribution of military in the aviation industry began with the U.S. Army Signal Corps award of a contract to the Wright brothers for the manufacture of a “heavier-than-air flying” machine in February 1908. This marked the introduction of aircrafts to the military in both the U.S. and Europe, which was later adopted for commercial use. Further developments in the aviation industry were only possible due to the need by the military to have superior equipment during the Second World War and the Cold War era. This is because the research and development costs were simply too high for private enterprises given the uncertain prospects of a commercial market. For the military on the other hand, it was a matter of live-and-death, hence all risks and costs were considered worth taking. This effort led to the development of the jet engine and the modern airframe technology and the new technology was later adopted by private companies to produce commercial aircrafts. Boeing was one of the beneficiaries of this modern technology and by 1957, only 2 percent of the company sales were non-military, but following military led R&D, this figure had jumped to 52 percent in 1966, and 77 percent by 1971⁷.

2.4 The Computer Technology

The U.S military had a pivotal role in the development of the computer during the Second World War. In 1944, the U.S navy commissioned the Harvard Mark I to compute complex tables based on a series of proposals from Howard Aiken in the late 1930's. The navy was also instrumental in the programming of the Mark I and II, leading to the development of the first compiler, A-0. It

⁶ Freeman, Christopher and Carlota Perez, The Diffusion of Technical Innovation and Changes of "Techno-Economic Paradigm," paper presented at Conference on "Diffusion of Innovations" in DAEST, Venice, Italy, 1986

⁷ Kathleen Broome Williams: A Brief History of the U.S. Federal Government and Innovation:
<http://www.todaysengineer.org/2011/aug/history.asp> . accessed on 2 Nov 14

also contributed to the establishment of COBOL, one of the first major computer languages that allow programs to work in machines from different manufacturers⁸.

The U.S army Ballistics Research Laboratory sponsored Electrical Numerical Integrator and Calculator (ENIAC) I of John Mauchly and John Presper Eckert to develop a computer for calculating artillery-firing tables in 1943. Unfortunately, the project took too long to finish, and by the time it was complete, the war was already over. The ENIAC was then given another task of designing a hydrogen bomb calculations machine, weather prediction, and a few other tasks⁹.

Immediately after the Second World War, the U.S. government, through the Army and Navy funded and guided the creation of a national competence in digital computer technology. The two services alongside the Atomic Energy commissioned John Von Neumann to design and build one of the first, post-ENIAC generation of computers. The new computer technology, which was referred to as AIS, was quickly adopted in the national laboratories as well as other defence related R&D centres¹⁰. The military related research was then kept secret while the unclassified work on the IAS computer was circulated widely, greatly contributing to the development of computer design knowledge in key universities and industries¹¹.

Separately, the U.S. Navy sponsored another computer research project immediately after the Second World War referred to as the Whirlwind computer project. This project led to the first breakthrough in random access memory known as the magnetic core-memory, which later became critical for the commercialization of computers¹². From the Whirlwind also came the development of graphic displays using cathode ray tubes (CRTs) to visualize the movement of airplanes in real-time. The Whirlwind team later integrated with the much larger project called

⁸ The Early History of Computers <http://campus.udayton.edu/hume/Computers/comp2>. Accessed 29 Oct 14

⁹ Jong-Tsong Chiang, Technological "Spin-Off": Its Mechanisms and National Contexts. June 1991 <http://dspace.mit.edu/bitstream/handle/1721.1/49318/technologicalspix00chia.pdf?sequence=1>. Accessed 29 Oct 14

¹⁰ Op Cit A Brief History of the U.S. Federal Government and Innovation

¹¹ Ibid

¹² Ibid

the Semi-Automated Ground Environment (SAGE) air defence system. This system merged communications and computer technology as parts of an air defence system against Soviet attack. IBM benefitted from its role in the SAGE and from this experience, it was able to develop SABRE, one of the world's first computerized airline reservations systems for American Airlines in the early 1960s. The SABRE system is still in use to date, although it is now highly transformed¹³.

2.5 The Development of the Semiconductor

Just like the computer, the semiconductor owes its early development to military research and development in the United States of America. The Semiconductor history can be traced to the work of John Bardeen, William B. Shockley, and Walter H. Brattain in 1947 at Bell Labs when they invented what is considered “the most important invention of the 20th Century”¹⁴. The new technology however proved expensive; hence, the vacuum tubes remained popular, outselling the transistors 13 to 1 in the 1950s. In the meantime, the U.S. military found the new invention essential for its weapon and mobile communications systems. The military weapon and communication systems at the time were increasing in complexity, and an increasing number of components were being connected to circuits to do tasks that were increasingly more sophisticated. This translated into physically larger systems, and correspondingly higher energy demands and heat dissipation issues for electronic systems. For example, the sophistication required in an aircraft or missile meant the transistors were not suitable to perform the tasks, so new technology to miniaturize the semiconductors was essential. Increased complexity also brought problems of reliability. The government, through the military therefore invested heavily in R&D for the production of miniaturized vacuum tubes and transistors. By so doing, the

¹³ Ibid

¹⁴ Alaina G. Levine: <http://www.aps.org/programs/outreach/history/historicsites/transistor>. Accessed 4 Nov 14

military made it possible for the development of the miniaturized transistor, a technology that was later passed on to the private sector to revolutionize electronics industry¹⁵.

2.6 Lithium Battery

The U.S. Army played a key role in the lithium battery technology as it sought for a cost-effective source of power for its electronic equipments. The military contribution in the development of this technology started in the 1980s when it funded research towards the technology. This new technology resulted in the production of lithium batteries primarily for military use. The technology became available for civilian use in the early 1990s when Sony collaborated with the Asahi Chemical Company to produce the Lithium-ion battery. In 1995, the U.S. Army first introduced the rechargeable BB-2847 lithium-ion battery for Night Vision equipment¹⁶.

2.7 Global Positioning System (GPS)

The history of the GPS can be traced to Transit, a satellite system deployed by the U.S. Navy in 1964 for the navigation of its ships and ballistic submarines. The U.S. Air Force saw the advantages offered by the new technology, which unfortunately was not suitable for air navigation as it was two-dimensional while aircrafts operate in a three-dimensional environment. It therefore embarked on a research for a similar system, but one that suited its needs, however, due to the high cost of the project, and the need for inter-service operability, the Department of Defence (DOD) called for a coordinated approach. In 1968, DOD established a tri-service steering committee called the Navigation Satellite Executive Group (NAVSEG), and in 1974, the project to build the NAVSTAR GPS started. The project was completed in 1994 when the 24th and final GPS satellite was put in orbit. This project cost the DOD a staggering \$8 billion to develop and operationalize. The GPS is to date owned and operated by the U.S military.

¹⁵ Op Cit, Kathleen Broome Williams

¹⁶ Ibid

Following the downing of the Korean Air flight 007 in 1983, the then U.S. President Ronald Reagan authorized the GPS technology to be made available to civilian aircrafts in the U.S., and in 1991, the technology became available on a continuous basis for civilian use around the world. Due to security concerns, however the U.S military purposely reduced the accuracy of the GPS available to the civilian sector, but this changed in 2000, when President Clinton ordered for discontinuation of “intentional degradation”¹⁷.

2.8 The Egyptian Military in National Development

According to Dr. Nimrod Raphaeli, a senior analyst at Middle East Media Research Institute (MEMRI), the Egyptian military plays a key role in the country’s economy. The military industry products include items such as laptops, flat-screen televisions, sewing machines, refrigerators, pots and pans, plastic table covers, butane gas bottles, olive oil, and bottled water, medical equipment, tourism, real estate, and gas and energy¹⁸.

The military also owns and operates petrol stations, maritime transport, and heavy equipment, leasing, and cleaning services. It is also involved in the agriculture sector where it grows strategic crops, such as barley, corn, wheat, and clover, as well as mango trees, oranges, and lemons, and runs dairy and livestock farms as well as a modern slaughterhouse¹⁹. The military, according to a study done by Marshall and Stacher, is involved in "maritime and air transport, oil and gas, and industrial-scale environmental projects like wastewater treatment and renewable energy generation and computers among others."²⁰ The military is also in partnership with German and Danish companies for wind power technology, and with Chrysler for the assembly

¹⁷ Ibid

¹⁸ Sayyed Misha'al military production, as cited by Dr. Nimrod Raphaeli, <http://www.memri.org/report>. Accessed on 6 Nov 14

¹⁹ Ibid

²⁰ Shana Marshall and Joshua Stacher, "Egypt's Generals and Transnational Capital," Middle East Research and Information Project. www.merip.org/mer/mer262/egypts-generals-transnational-capital. Accessed 5 Nov 14

of the Jeep Wrangler for military use. The company also produces Jeeps for sale to the civil population on a parallel production line²¹.

2.9 The Namibian Military August 26 Holding (PTY) Ltd

The Namibian military plays an important role in national development through its company, the August 26 Holding (PTY) Ltd, which was incorporated on the 14th of August 1998. The company has several subsidiaries that are open for joint ventures with other companies or private individuals. The company may also buy and hold shares in any viable business for the benefit of the shareholder and the country's economy in general. The State-owned company objectives are geared towards the achievement of the national Vision 2030, the medium-term planning National Development Plans I, II and III (NDPI, II & III) and other development initiatives aimed at improving the social and economic welfare of the citizens²²

The subsidiaries include Windhoek Maschinen Fabrik, which is wholly owned by the August 26 Holdings. The company is involved in vehicle manufacturing, fittings and repairs mainly for the defence market. The company also make other products such as trailers, tractors, trackers and fencing. Sat-Com (PTY) Ltd is another subsidiary in which the military company has 74.5% share holding.²³ The subsidiary is in the telecommunication industry in Namibia and the region and is involved in manufacturing, installation and servicing of electronic and telecommunications equipment such as two-way radios, satellites and radio transmitters, as well as Internet Technology (IT). The company undertakes significant research and development activities in the electronic communication industry on behalf of the Namibian Defence Force.

Another subsidiary, August 26 Industries (PTY) Ltd which is solely owned by August 26 Holding operates a shoe factory and is charged with the manufactures of footwear for the

²¹ Ibid

²² August 26 Holding Company (PTY) Ltd: <http://www.august26.com.na/>. Accessed on 6 Nov 14

²³ August 26 Holding Company (PTY) Ltd Op Cit

Namibian Defence Force and other uniformed services. The company manufactures boots for industrial use as well. August 26 Textile and Garment on the other hand manufacture different types of garment including, combat fatigues, trousers, jackets, shirts, protective clothing, school uniforms, other uniforms and linen. The initial focus is on the domestic market but this is expected to expand to the regional market with time.²⁴

Recently, the company joined the construction industry with the aim of speeding up execution of government projects in the country. The company plan is to revolutionize the industry by introducing non-conventional building materials and methods that are expected to bring down the cost of construction by 40%. The company is also expected to resolve some of the current infrastructural delays in the construction industry. The first task for the new company will be the construction of barracks for the Namibian Air Force followed by other military related projects.²⁵

2.10 The Ethiopian Defence Industry

The Ethiopian military has not been left behind in national development initiatives. This, it does through the Ministry of Defence, which is responsible for administering the several defence industries. The objective of these industries is to provide for and support the Ethiopian National Defence Force (ENDF). Currently, there are eight organizations administered by the defence industry including the Hibret Machine Tools, a military-civil engineering complex specializing in the production of medium weapons for the ENDF. The company also produces tools and spare parts for medium weapons and a variety of mortars.²⁶

Gafat Armament Engineering Complex is another military production facility of the Ethiopian Defence Industry. This company specializes in producing a wide range of infantry equipment

²⁴ Ibid

²⁵ Namibia's defence ministry joins construction industry to quicken delivery of public projects: <http://www.hypenica.com/about-us/news/item/173-http-constructionreviewonline-com-2014-10-01-namibias-defence-ministry-joins-construction-industry-to-quicken-delivery-of-public-projects>. Accessed on 6 Nov 14

²⁶ The Ethiopian Defence Industry/Production sector: <http://mereja.com/forum/viewtopic.php>. Accessed on 6 Nov 14

that meet the requirement of the ENDF. Initially, it only produced AK-47 automatic rifles and light machine guns, but following expansion, it now manufactures PK machine guns, and automatic weapons attached on iron-wear vehicles and helicopters. It also produces 40mm grenade launchers; anti-tank launchers; handguns, strike dispensing guns and sniper scopes.

Homicho Ammunition Engineering Complex specializes in the production of a wide range of ammunition for use by the ENDF. The Complex was established in 1987 under the name Tatek Engineering Factory to produce ammunition for medium and heavy weapons. In addition, the light weapons ammunition production line was transferred from Hibret Machine Tools Engineering Complex in a restructuring to house all ammunition production under one organization. The new organization was renamed Homicho Ammunition Engineering Complex in 2004 and now produces a wide range of ammunition ranging from light weapons to heavy mortars and artillery.²⁷

Bishoftu Motorization Engineering Complex is a repair and overhaul centre for heavy armament, tanks and military vehicles. The complex is composed of the following five sections: Tanks and Armoured Vehicle Overhaul section that rebuilt tanks and armoured vehicles; Military Vehicles Overhaul section for the maintenance of light and heavy military trucks; Motor Repair and Mechanical Workshop section for the overhaul of engines and production of spare parts for tanks, armoured vehicles and military trucks; Medium and Heavy weapons repair and electroplating section that repair and overhaul medium and heavy weapons; and the Communications Apparatus Repair and Maintenance Section, for the repair and maintenance of communications and electronic equipment in use by the Ethiopian forces.²⁸

The Dejen Aviation Engineering Complex (DAVEC) is a centre for overhauling and upgrading military aircraft. Its primary objective is to provide depot level maintenance and carry out

²⁷ Ibid

²⁸ Ibid

upgrading and modification of the Ethiopian Air Force fleet. The company has the capacity to overhaul and repair various types of aircraft and their systems including Combat aircraft (MiG-21, MiG-23 fighters, L-39 jet trainer); Transport and Attack helicopters (Mi-8, Mi-17, Mi-24, Mi-35); Transport and Light Aircraft (Antonov 12 and various light aircraft); and Manufacture of various airframes, and military and civil boats from fibreglass and composite materials. In addition, it manufactures aircraft parts and accessories.²⁹ Other companies are the Nazareth Canvass and Garment Factory; Zuqualla Steel Rolling Mill, and Branna Printing Enterprise.

The defence ministry formed a new company by the name Metals & Engineering Corporation (METEC) in June 2010 with a capital of 10 billion birr. The company was created by grouping all the nine businesses previously owned by the Defence Ministry, including Dejen Aviation Industry and Gafat Armament Industry. Six other industries, including plastic, tractor and vehicle spare-parts manufacturing companies were also incorporated into METEC and it now operates 75 factories nationwide.³⁰ METEC is collaborating with various foreign companies including Alstom SA, Europe's second-largest power-equipment maker, U.S.-based solar-panel manufacturer Spire Corporation, and China Poly Group Corporation on engineering and manufacturing projects. It is estimated that some of the company's budding industries, like vehicle-assembly and engineering businesses, generate more than 20 billion birr (\$1.1 billion) of revenue annually.

Ethiopia operates a state-led development model that targets public and private investment in value-adding industries in order to diversify an economy in which agriculture accounts for 46

²⁹ Ibid

³⁰ William Davison: Ethiopian Military-Run Corporation Seeks More Foreign Partners, 18 Feb, 2013: <http://www.bloomberg.com/news/2013-02-18/ethiopian-military-run-corporation-seeks-more-foreign-partners.html>. Accessed on 6 Nov 14

percent of total output.³¹ The government is pursuing a five-year plan at a cost of 569 billion birr, including the \$5 billion Grand Ethiopian Renaissance Dam, which is set to be the site of Africa's biggest hydropower plant. METEC has been contracted by the Ethiopian Electric Power Corporation to build the electro-mechanical works for the Renaissance Dam on the Blue Nile River in partnership with Alstom. METEC is also building the 50 billion-birr Coal Phosphate Fertilizer Complex Project in Illubabor Zone of Oromia region for the Privatization and Public Enterprises Supervising Agency. The company is also the main contractor for the Sugar Corporation, a government enterprise building 10 sugarcane plantations and processors across the country at a cost of about \$5 billion.³²

METEC employs about 13,000 people, among them more than 1,000 engineers. In September 2013, Ethiopia opened a 200 million-birr factory in Modjo, 70 kilometres southeast of Addis Ababa that will make turbines, generators and high-voltage electricity- transmission cables and this contract was awarded to METEC³³. At the same time, a Chinese company, Poly Technologies Plc, part of the Beijing-based China Poly Group, is building truck-assembly plants in Modjo and Bishoftu for METEC. The ultimate plan of the country is to be self reliant in vehicle manufacture and stop imports except for engines.³⁴

2.11 The *Armée-Nation* of Senegal

The concept of *Armée-Nation* is to have the military contribute to national development by carrying out specific tasks in support of the society. To avoid the notion of militarization of the Senegalese society, the *Armée-Nation* framework defines the conditions and requirements that enable the military participation in national development. In this concept, the military is engaged in development projects deemed urgent, when the public sector is incapable of performing such

³¹ Ibid

³² Ibid

³³ Ibid

³⁴ Ibid

tasks, or when the private sector shows no interest in undertaking them. The involvement of the military is not intended to compete with, but to complement the public and private sectors. The concept has widespread acceptance by the Senegalese population, and initial successes have led to initiatives designed to improve people's living conditions and develop key sectors such as infrastructure, health, environment, agriculture, and education.

In infrastructure, the military has been involved in opening up the rural areas by constructing roads and bridges, drilling wells, constructing airfields, and wharfs, and rehabilitation of school infrastructure. In the health sector, the military plays a key role of availing medical care to the society. The military provides about 80 percent of medical care through the twenty-nine military medical establishments in Senegal. The Defence Ministry regularly signs protocols with the Ministry of Health to involve the military health service in prevention campaigns including programs targeting AIDS, malaria, tuberculosis, and maternal and infant mortality³⁵.

The military health service also participates in vaccination drives organized by the Health Ministry. Military doctors occupy key positions in the health system and in the Faculty of Medicine of the University of Dakar, where they conduct research. Souleymane M'boup, a pharmacist and colonel in the Senegalese military health service led the team of researchers who found, described, and isolated, for the first time, the human immunodeficiency virus (HIV)-2 in 1985. M'boup and his team of researchers have played a key role in the organization and implementation of a successful program for HIV prevention in Senegal. This program has been able to provide, at no cost, antiretroviral medicines to more than 12,000 patients since 2004. Senegal has one of the lowest prevalence rates of HIV in Africa (0.7 percent).³⁶

³⁵ Biram Diop: Civil-Military Relations in Senegal, http://www.ccd21.org/military_handbook/volume_two/12_senegal.pdf. Accessed on 9 Nov 14

³⁶ World Bank, "Reproductive Health at a Glance: Senegal," April 2011, <http://www.worldbank.org/INTPRH/.../Senegal41811web.pdf>. Accessed on 9 Nov 14

The military is also involved in protecting and safeguarding the environment. This it does in support of forests and parks services by building firebreaks in several parts of the country. The military in conjunct with the Ministry of Water and Sanitation has played an important role in the construction of retention basins and artificial lakes. The military is leading reforestation efforts in Senegal as part of the fight against drought and desertification. In agriculture, the military has contributed by constructing retention basins and artificial lakes, drilling of wells and in partnership with Morocco; Senegal's Air Force has participated in a cloud seeding program.

The military, through the Agency for the Social Reinsertion of Retired Service members and the Foundation for Invalids and Wounded Military personnel, has enlisted retired and disabled veterans to assist with agricultural projects.³⁷ Hundreds of retired military personnel have so far been trained in irrigation techniques, and seven agricultural projects initiated in different areas of the country. With these projects, retired armed forces personnel and civilian employees hired locally cultivate thousands of acres.

In terms of education, the armed forces contribution is through the *Ecole Militaire* of Saint Louis, from which well-known military officers and civilian officials have graduated. The armed forces are equally engaged in the training and education of Senegalese students at the university level. The military is entrusted with the administration of the *Ecole Polytechnique de Thies* which is responsible for training both military and civil engineers. At the Cheikh Anta Diop University of Dakar, military professors are deployed on the faculties of medicine and pharmacy, where they serve as both lecturers and researchers. Another area where the military makes an important contribution to education in Senegal is in the National Civic Service (NCS), which is responsible for civic education for Senegalese youth under the supervision of the Youth Ministry.³⁸

³⁷ ARSM, "Programmes", [Http://Www.Arsmsenegal.Com/Index](http://www.arsmsenegal.com/index). Accessed on 9 Nov 14

³⁸ Op Cit Biram Diop: Civil-Military Relations in Senegal

2.12 Uganda Military in National Development

The Ugandan government is making deliberate efforts to involve her military in national development. Key in this plan is in the construction sector, in which the military engineers will take part. On 4 February, the Ugandan President Yoweri Museveni presided over a pass out parade of 47 Uganda People's Defence Force (UPDF) railway engineering students from the National University of Science and Technology at Lugazi. The military railway engineers will construct the Mbale-Soroti railway line on the 503 Tororo-pakwach lines, which has been out of service for more than twenty years. According to the college head Brigadier Timothy Sabiiti Mutebile, the ultimate plan is to make the institution a fully-fledged university of science and technology.³⁹

The university will specialise in military engineering sciences, development and research. The army in 2007 started renovating 162 flats at the Fourth Division headquarters at a cost of 4.7 billion Uganda Shillings. The Ministry of Defence's strategic plan is to improve structures in the army barracks countrywide to improve soldiers' accommodation facilities.⁴⁰ The government aims to have the UPDF Engineering Brigade compete for construction contracts locally and in other African countries in the future.

On 8 October 2014, President Yoweri Museveni launched the construction of the Standard Gauge Railway-line, which is part of the Northern Corridor Integrated Projects. The Ugandan part of this East African project will traverse the Tororo - Gulu to Nimule, and from Kampala to Kasese on to Mpondwe in Western Uganda, and also from Pakwach to the Democratic Republic

³⁹ Railways Africa, Uganda Passes out Army Rail Engineers, February 14, 2011:

<http://www.railwaysafrica.com/blog/2011/02/14/uganda-passes-out-army-rail-engineers/>. Accessed on 10 Nov 14

⁴⁰ Daily Monitor Monday November 10, 2014 <http://www.monitor.co.ug/News/National/-/688334/1094830/-/ciq4e9z/-/index.html>. Accessed on 10 Nov 14

of Congo (DRC) border. The UPDF Engineers Brigade and the Chinese Harbour Engineering Company (CHEC) will construct the Railway line.⁴¹

2.13 Nigeria Defence Industries Corporation

The Nigerian Defence Industries Corporation of Nigeria (DICON) was established in 1964 to produce arms and ammunitions for Nigerian military and other security agencies. The Corporation also uses its excess capacity to produce machinery spare parts for industries and other products for civilian use. It operates an Ordnance Factory in Kaduna where it manufactures small arms and ammunitions including assault rifles, machine guns and sub-machine guns. It has a Special Vehicle Plant that refurbishes and upgrades the Scorpion light tanks and Setyr tracked Armoured Personnel Carriers. The company has also developed 60mm and 81mm mortars.⁴² President Goodluck Jonathan recently commissioned a ballistic vest factory complex at the DICON in Kaduna for the production and sale of military ancillary products including bulletproof vests and night vision goggles. The corporation is in a partnership with MAROM-DOLPHIN, an Israeli company that specializes in military and security textile products. This undertaking will enable the country save much needed foreign exchange, and generate more by exporting its products to neighbouring countries.⁴³

2.14 Tanzania Automotive Technology Centre

The Tanzania Automotive Technology Centre (TATC) was inaugurated in 1985 to bridge the technological gap in Tanzania and to make the country self-reliant in technology. The objective of TATC was the production of technological equipment suitable for economic and social needs of the country to stimulate growth. The centre is under the national Ministry of Defence and

⁴¹ Office of the President Republic of Uganda, Uganda Media Centre:

<http://www.mediacentre.go.ug/news/president-launches-standard-gauge-railway-line> . Accessed on 10 Nov 14

⁴² DAILY TRUST editorial 26 JULY 2012

⁴³ Nigeria: Defence Industries Corporation Can Do More, July 26, 2012

<http://beegeagle.wordpress.com/2012/07/26/nigeria-defence-industries-corporation-can-do-more-2/> . Accessed ON 6 Nov 14

National Service who operate it on behalf of the Government of Tanzania. The government in cooperation with Timoney Technology Limited of the Republic of Ireland funds the technical requirements.⁴⁴ TATC is currently involved in manufacture of vehicles and agricultural machinery as well as quality assurance on machinery acquired by the government. It is also involved in research on the best materials for use in mechanical engineering, manufacture of various products, and consultancy services for electro-mechanical engineering firms and individuals, and serves as a training centre for technology.

2.15 Conclusion

The military has played a key role in innovation and although the research and development was initially intended for military use, most of it was eventually passed on for civilian use. The U.S. military particularly played a crucial role by funding R&D for the development of the technology that humanity enjoys today. This includes computer technology, the Global Positioning System, the semiconductor, and aircraft technology among others. The pressure to stay ahead of their enemies pushed the U.S. government to engage in some expensive ventures in research, which the private sector was unable to invest in due to the associated financial risks and costs. Today, many militaries around the world are engaged in R&D and other development activities.

In Africa, several countries have engaged their militaries in developmental activities ranging from weapon engineering to agriculture. The Ethiopia military is involved in production of military equipment ranging from repair and overhaul of heavy armament to upgrading and overhauling of military aircraft. METEC, an Ethiopian military company apart from production of ammunition, and manufacturer of tractor and vehicle spare-parts is involved in electro-mechanical works for the Renaissance Dam which is set to be the site of Africa's biggest hydropower plant. It also set to earn about \$5 billion from construction of ten sugarcane

⁴⁴ Tanzania Automotive Technology Centre. www.tatcnymbu.org. Accessed on 25 Oct 14

plantations and manufacture of turbines, generators and high-voltage electricity transmission cables. It employs about 13,000 people, among them more than 1,000 engineers. The Ugandan military is involved in the construction of the country's standard-gauge railway line while the Tanzanian military runs a factory that makes vehicles and agricultural equipments. Weapon engineering although not directly contributing to wealth has several benefits. By producing own military equipment, these countries save on foreign currency thus freeing money for other developmental purposes. The industries also create employment opportunities for the citizens as well as developing the country's technological base. Some of the military industries have a dual purpose in that they also produce products for civilian use such as agricultural equipment and vehicles that contribute directly to economic growth. There is also the risk that countries that supply military wares could for one reason or another refuse to sell them or the necessary spare parts and ammunition when needed, thereby compromising a country's ability to pursue its national interests.

CHAPTER THREE

MAIN AREAS IN WHICH THE MILITARY CAN PARTICIPATE IN DEVELOPMENT

3.1 Introduction

The military is one of the elements of national power of a state, the others being Information, Diplomacy, Economy and Psychology¹. The fact that we live in an anarchical world means that force and threat of force is a necessary instrument of foreign policy should diplomacy fail. Having a military force is part of the conventional wisdom of statecraft, and military forces of a country therefore exist to defend it against external threat. Threats to State security while still relevant in international relations, is not the only concern in the contemporary world. The focus of security must be therefore be broadened to include human security. Human security involves the protection of vital freedoms, which means protecting people from critical and pervasive threats and situations, building on their strengths and aspirations, as well as creating systems that give people the building blocks of survival, dignity and livelihood.² The United Nations Development programme report of 1994 identified these threats as environmental, economic, political, community, health and food insecurity. For the state to effectively deal with these threats, all government and non-governmental agencies need to work together. The military being one of the State instruments is well suited to perform these tasks as it posses the necessary skills and equipment. The militaries' versatility in terms of unique capabilities and skills that they possess make them suitable to perform a variety of tasks including infrastructure development that contribute to national development. Many countries are now taking advantage of these capabilities to deploy the military for tasks and projects not only for the defence of the

¹ Elements of National Power:

http://jfsc.ndu.edu/Portals/72/Documents/library/Bibliographies/Elements_of_National_Power.pdf

² Outline of the Report of the Commission on Human Security:

<http://www.unocha.org/humansecurity/chs/finalreport/Outlines/outline.pdf>. Accessed on 30 Aug 14

nation, but also national development projects infrastructure development, health and hygiene and agriculture.

Many Governments are today including their militaries in their development strategies, with the recognition that development brings peace and stability³. The US army for example played a key role in opening up the West during the great depression of the 1930's. This can be replicated in African countries where military forces have capabilities that can be shared with the civil administration for the mutual benefit the government, the citizens and the military itself. While security remains the primary responsibility of any military force, security threats in Africa are internal mostly as a result of unmet expectations, hunger, disease, and underdevelopment which leads to unemployment and crime. Military forces can provide incentives, guidance, training and necessary support, and can assist in selected mutual ventures. Greater accomplishment will however be achieved through provision of planning, administrative and technical assistance to civil community effort. The military can be utilised in support of national development for many tasks including: agriculture, education, administration, health and hygiene, engineering and construction, transportation, commerce and trade, and industry among many others.

3.2 Engineering and Construction

Military forces have been involved in civil engineering and construction of key civilian infrastructure for many years. The British Army engineers for instance played a key role in road construction in colonial India in the 1830's. The grant Trunk Road for instance that runs from Calcutta to Peshawar, and which was later extended all the way to the border with Afghanistan was done by military engineers. Others roads across the country soon followed, contributing to the success of the railway hence opening up the economy of India⁴. The British Army engineers

³ Waris Ali: Peace and Collaborative Development Network
<http://www.internationalpeaceandconflict.org/profiles>. Accessed on 25 Aug 14

⁴ Harry F. Waterhouse, A Time to Build: Military Civic Action-Medium for Economic Development and social reform, (University of South Carolina Press, Columbia, 1964) p 43.

were in addition responsible for the construction of a telegraph line from India to Persia, for which they were also responsible for maintenance and operation of the communication system linking the colonies⁵.

The British Army in addition played an important humanitarian assistance role in colonial India where they constructed irrigation canals such as the Ganges Canal. The canals were also used for transportation, and were quickly followed by works to provide portable water for the rapidly growing Indian cities, and hydroelectric power generation for the industry, all led by the military⁶. The British engineers were equally involved in the construction of railways, Telegraphs, docks, canals, and harbours in colonial Egypt and Sudan. The reason the military took the lead in construction works in these countries is probably because civilian engineers could not surmount the hostile communities and terrain, especially in India. In some African countries including Kenya, similar scenarios still exist and military engineers could be the best suited to carry out construction works in such areas including Northern and North-eastern parts of the country, which are prone to banditry attacks.

The Egyptian military as alluded earlier remains deeply involved in construction works. Some of the projects the military is involved in include construction of wind power plant in conjunction with German and Danish companies, construction of residential houses, and a sports city in eastern Cairo⁷. Ethiopia military on the other hand is involved in the construction of the \$5 billion Grand Ethiopian Renaissance Dam, a Coal Phosphate Fertilizer Complex Project and 10 sugarcane plantations.⁸ Other African Militaries involved in construction include Uganda, Senegal and Namibia.

⁵ Op Cit. Harry F. Waterhouse

⁶ Op Cit. Harry F. Waterhouse

⁷ Shana Marshall and Joshua Stacher, "Egypt's Generals and Transnational Capital," Middle East Research and Information Project. www.merip.org/mer/mer262/egypts-generals-transnational-capital. Accessed 5 Nov 14

⁸ William Davison Op Cit

The Thailand military has been involved in civil projects in aid of the citizens of that country for many years. Engineering projects, under the Civil Assistance and Civil Relations components are probably the most visible. In these projects, the military engineers built over 4,000 kilometres of roads between the year 1966 and 1978, most of which are development and feeder roads to the rural areas⁹. There is however one outstanding quality that the military engineers demonstrated in the tasks that they had accomplished whereby, compared to their civilian counterparts in the Bureau of Public Highways, the military engineers accomplished more at a lesser cost. In the construction of the Manila North Diversion Road in the early sixties, the military was contracted to construct one lane and the civilians the other. The military engineers did not only finish their portion ahead of schedule, but also at a cost lesser by seven percent that of the civilian contractor¹⁰.

3.3 Manufacturing Industry

The involvement of the People's Liberation Army (PLA) of China exemplifies military involvement in the manufacturing sector. The industries started during Mao Tse-tung's rule in the era of Sino-Soviet tensions. The army established the factories mainly inland in remote mountain regions, far away from transportation routes and power sources to protect them against possible Soviet attack. The products manufactured at the time were purely for military use including arms, ammunition, electronics, plastics and metals. The establishment of the industries was of immense benefit to the military, which could now easily access weapons, ammunition and other related military and domestic stores at subsidized prices.

Following the death of Mao Tse-tung in 1976, the new leadership encouraged spin offs of some of the military products to civilian use and engagement of the military industry in broader liberalization of the Chinese economy. To take advantage of the opening of China's economy to

⁹ MG Piti Kumppong, *New Roles of the Thai Military: Readjusting for the 21st Century*: http://www.nids.go.jp/event/other/arf/pdf/thailand_paper.pdf. Accessed On 15 Jan 15

¹⁰ Ibid

the international market, PLA created trading companies including China Xinxiang, China Poly and China Songhai¹¹. The PLA also formed banks, holding companies and international trading companies such as Everbright to market these goods worldwide. Today the PLA runs farms, factories, mines, hotels, paging and telephone companies and airlines, as well as major trading companies, and many of these companies have become firmly involved in the global economy¹². A research conducted by David Whelker of the Multinational Monitor reveals that most of the companies are listed on capital markets in Hong Kong and elsewhere. For example, China Poly Group has two listed companies: Continental Mariner Company Ltd and Poly Investments Holdings Ltd both of which have a large number of subsidiary companies in mainland China, Hong Kong, Liberia, the British Virgin Islands and Panama. Macau Holdings Ltd is listed in Hong Kong and its subsidiary, the HMM China Investments Ltd in the Toronto Stock Exchange while HMM Gold Mining is listed in the Australian Stock Exchange. Also listed in Hong Kong exchange is 999 Enterprise Group, another company controlled by the PLA General Logistics Department that owns Sanjiu Pharmaceuticals Group, the largest pharmaceuticals manufacturer in China. In 1994, with \$382 million worth of import-export trade, China Poly Group was the fifty-ninth largest import-export company in China, according to China State Statistical Bureau¹³.

African countries can learn from China's experience on how the military can be utilized to take the lead in national development instead of allowing the country to be exploited by Western Multinational Companies, whose sole aim is to maximize profits. The Chinese PLA companies have not only saved the country foreign currency in military hardware imports, but also created jobs for millions for Chinese. In African, some States are already utilizing their militaries along

¹¹ Dr. Gary K Busch, The Chinese Military-Commercial Complex:
http://www.ocnus.net/artman2/publish/Editorial_10/The_Chinese_Military-Commercial_Complex.shtml. Accessed on 12 Jan 15.

¹² Ibid

¹³ Ibid

the same lines. These include Ethiopia, Egypt and Uganda as earlier stated in, as well as South Africa.

3.4 Agriculture

Members of the armed forces may be used to pioneer agricultural settlements that can then be handed over to the locals before moving on to start new project. Israel is one of the countries in which pioneer agricultural work is done, which is carried out by members of the '*Nahal*' Corps.¹⁴ The '*Nahal*' brigade is a program that combines military service and the establishment of agricultural settlements, often in marginalized areas. Volunteers of the '*Nahal*' corps work for a year in '*kibbutz*' (a collective agricultural settlement in modern Israel, owned and administered communally by its members and on which children are reared collectively), under the control of the country's Defence Force¹⁵. The volunteers then relocate to new sites after gaining the necessary agricultural experience to commence the necessary pioneer work and get the project going before moving on to the next. The presence of the '*Nahal*' corps forces also ensure security within areas of their deployment as they have the requisite military training to protect these settlements, which are often in remote areas especially close to borders with hostile neighbours, against attack. A similar scheme for establishing agricultural settlements is pursued by the military in Pakistan.¹⁶ The conscripts who complete the agricultural course offered by the Pakistan military are entitled to a plot in areas designated for settlement. In these farms, scientists carried out intensive laboratory and field tests to determine suitability of various crops before cultivation commences. Military involvement in national development also exists in several other countries, either directly or indirectly in other types of economic enterprises such as

¹⁴ T. Bowden: *Army in the Service of the State* (Tel Aviv, 1976) p75 as cited by Lt A. D. Shaw, *The Military as a Contributor to National Development* in <http://scientiamilitaria.journals.ac.za/pub/article/viewFile/737/740>. Accessed on 16 Jan 15.

¹⁵ Ibid

¹⁶ H. R. Heitman, *The Potential Role of the Military in National Development* p9, as cited by Lt A. D. Shaw, *The Military as a Contributor to National Development* in <http://scientiamilitaria.journals.ac.za/pub/article/viewFile/737/740>. Accessed on 16 Jan 15.

engineering, trade, finance and management. The Burmese military authorities for instance control enterprises as diverse as steel production, pharmaceutical, manufacture and shipping through the Burmese Economic Development Corporation¹⁷.

3.5 Medical

Militaries the world over are also deployed quite often to deal with emergencies and crises of varying types and magnitude. Some of such emergencies and crises include floods, epidemics, hurricanes, Tsunamis and earthquakes among many others that leave behind a trail of destruction hence interrupting lives of the affected population. The Kenyan military for example has previously been deployed in various parts of the country to provide Medical and veterinary services otherwise referred to as MEDICAP and VETCAP respectively. The military medical support in such cases is only temporary, and on completion of their tasks, the military goes back to their working stations. The most effective and enduring support would be for the military to provide a lasting solution to some of these problems facing the population, especially those who reside in remote and insecure parts of the country. One of the fields in which the military forces could provide solutions with lasting impact is the promotion of hygiene among the affected populations. This could for example include tasks such as digging of drainage trenches and the de-infestation of areas affected by insect pests (as troops do not require specialized training to undertake such work). Such tasks could be performed by soldiers when deployed in these areas on field training, thereby giving back to the local community and winning their hearts and minds. This approach has been used effectively in various countries across the globe with varying degree of success. In Guatemala for example, the military used its medical clinics as centres of operation from which they conducted research on nutrition in rural areas previously under the control of insurgents. The research findings were then utilised to improve the general health

¹⁷ M. Janowitz: *The Military in the Political Development of New Nations*, (London, 1964) p 76

standards of the people in these areas thereby bringing down nutrition deficiencies cases.¹⁸ In 1965 a Health Corps was established in the Iranian Army to deal with medical matters along similar lines to those described for the Guatemalan army above.¹⁹ In contributing to the promotion of health and hygiene, the military plays a valuable role, as health is not only desirable for the citizens, but also contributes to economic growth, over all national development and security.

Conclusion

Africa should borrow a leaf from countries that have used their militaries effectively in improving the well-being of their people. These countries include China, Israel, The Philippines, Thailand, Cambodia, Vietnam, and USA especially after the civil war. Kenya, for example could deploy her military to construct roads, dams, boreholes and irrigation trenches as well as other forms of civic-military action in remote arid and semi-arid regions. This will not only help improve the living standards and food security in such areas, but will also contribute to security, as the presence of the military will serve as deterrence against conflict, while the now more economically empowered communities will have no reason to attack their neighbours. This worked very well in the Philippines during and after the end of the insurgency, where the military moved in to the marginalized regions that were earlier under rebel control and established agricultural schemes. The initiative opened up the areas, leading to rapid development, hence lasting peace. The image of the military, which hitherto was not trusted in such areas, changed drastically and so did the government image, thus helping bring lasting peace to these areas.

¹⁸ H. R. Heitman, op cit, p 9.

¹⁹ T. Bowden, op cit, p 44.

CHAPTER FOUR

COMPARATIVE ANALYSIS OF MILITARY CONTRIBUTION TO NATIONAL DEVELOPMENT IN KENYA AND SOUTH AFRICA

4.1 Introduction

In this chapter, the study seeks to compare military contribution to national development in Kenya and South Africa. To do this, the researcher relied on both primary and secondary data sources and in presenting the findings, tables under different headings have been used. The researcher first looked at the existing information on the role of the military in both Kenya and South Africa, followed by presentation and analyses of the primary data. The chapter discusses the research hypothesis to establish whether:

1. The military plays a key role in national development in Kenya and South Africa.
2. The military does not contribute to development in South Africa and Kenya.
3. The military industry is a key driver of industrialization in Kenya and South Africa.

4.2 Kenya

The military in Kenya plays a critical role in national development by playing its primary duty of protecting the country against external aggression, thus creating an enabling environment for national development. The direct contribution by the military to national development in Kenya is however not much documented. The primary role of the Kenya Defence Forces as stated in the constitution is the defence and protection of the sovereignty and territorial integrity of the republic, assistance and cooperation with other authorities in situations of emergency or disaster, and restoration of peace in any part of Kenya.¹ The defence of the sovereignty and territorial integrity is an overriding responsibility that cannot be understated, but there are other threats to national wellbeing that are equally critical. Moreover, in peacetime, the military is normally

¹ The Kenya Defence Bill Article 241 (3) of the Kenya Constitution 2010

unengaged save for occasional deployment in support of civil authority, internal security duties and peace support operations, while training is a continuous process.

There are many threats other than war to people's security including poverty, hunger, disease and many more that require a State's response. Kenya, being a developing country requires input from all government institutions to play their role in national development. The researcher therefore sought to establish whether the military as a state agent plays any role in national development.

The involvement of the military in national development in Kenya outside its traditional of defence is through the Kenya Ordnance Factory Corporation (KOFC). KOFC is a strategic parastatal that enhances national security, transfer technology and provide a base for national industrialization under the Ministry of Defence². The corporation manufactures military hardware under license from FN HERSTAL of Belgium. The military hardware is for the local security agencies, arms dealers and foreign customers including the UN and other African nations. The ammunitions include 7.62x51 mm Ball SS-77/1, 7.62X51 mm Ball-Linked, 7.62x51mm Blank Star, 7.62x39mm Ball, 9x19mm Parabellum, 5.56x45mm Ball SS-109, 5.56x45mm Ball linked and 5.56x45mm Blank Star. The aim of KOFC operations is to enhance security in Kenya and the region; generate Kenya's and the region's development and reliability by reducing lead-time in the acquisition of ammunition and spares. According to the Managing Director, the corporation also manufactures a wide range of products including farm produce, bottled water mainly for the Kenya Defence Forces (KDF), piped water to the local community at a subsidized cost, and a wide range of bakery products and flour milling as value addition of the farm produce. KOFC also manufactures tools for internal and external consumption such as weapon spare parts for Artillery Guns, machine spare parts for use in the sugar industries and farm implements for tractors and planters. The sales of the products for the financial year

² Kenya Ordnance Factories Corporation, <http://www.kofc.co.ke/>. Accessed on 11 Feb 15

2013/14 stood at KShs 1.16 billion³. The corporation is further diversifying to other projects including fabrication of metal containers to make mobile homes, offices, computer laboratories and classrooms with solar power options, dehydration project for vegetables and new calibres of ammunition. KOFC is currently cultivating a total of 1,600 acres of farmland, 1140 of which is under maize, 400 acres under hay while another 60 acres are under wheat⁴. It also produces environment friendly diesel field kitchen, the *DEFKITCH* that is fuel efficient, thus saving forests. The corporation has over 100 acres of land under both exotic and indigenous trees for forestry farming. Plans are underway to start manufacture of Meals Ready to Eat (MRE), repair and assembly of small arms, fabrication of steel helmets and body armour, and manufacture of apparels among others⁵. All this, although quite modest compared to established military industries such as Egypt and Ethiopia, contributes to national development in terms of food security, revenue and employment. The Military has also been involved in a nationwide tree planting exercise in an effort to restore Kenya's forest cover. Between the year 2003 and February 2015, a total of 20,263,130 tree seedlings had been planted⁶.

Osprea Logistics, a privately owned UK-based military hardware manufacturer is set to open a Sh3.5 billion plant in Mombasa. In 2012 the company started construction of the plant to assemble armoured cars and military trucks under the Mamba brand. This is expected to create employment for over 200 people within the company's first-year of production⁷

4.3 South Africa

The South African military plays a key role in national development through defence of the country against external threats. The military also contributes to development through the

³ Lecture by Maj General Tumbo, the Managing Director to course participants of course 17-2014/15 in December 2014.

⁴ Ibid

⁵ Ibid

⁶ Data KDF Headquarters.

⁷ Rawlings Otini, Armoured car dealer to open plant in Kenya Business Daily Thursday March 26, 2015 <http://www.businessdailyafrica.com/Corporate-News/Armoured-car-dealer-to-open--plant-in-Kenya-/-/539550/1618520/-/10ajkkq/-/index.html> accessed On 6 Nov 14

military industry, whose origin dates back to the 1970s after the UN imposed an arms embargo against the then apartheid regime. The reason for the arms industry was to produce the necessary weapons for the country's Defence Forces. South Africa entered the international arms market in the early 1980s as it sought to catch in on the surplus capacity from the arms industry, and within a few years, it had become a major arms supplier to a number of developing countries. Following the end of the apartheid in May 1994, the UN arms embargoes were lifted and this saw South Africa become one of the developing world's leading arms exporters. Between 1994 and 1998, South Africa sold arms worth more than US\$600 million to more than 90 countries, mostly in Africa, Asia, Latin America and the Middle East.⁸ Details of the exports are as shown on table 1.

Table 1 **Details of Military Equipment Exports**

Country	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Angola	–	620	756	–	25 000	–	14 948	–	4 997	450
Benin	–	–	–	–	–	–	9 297	765	–	771
Botswana	10 266	367	1 125	66	229	547	586	20	12 508	30 051
Burkina Faso	–	–	–	–	–	–	6 168	4 656	–	34 579
Burundi	–	–	–	–	–	–	–	–	15 179	22 439
Cameroon	3 757	871	2 529	3 646	1 068	1 068	–	–	–	–
Chad	–	–	–	–	–	–	–	–	15 234	2 000
DRC	–	–	912	–	–	–	–	–	–	3 371
Congo	–	–	–	–	–	–	–	1 501	–	–
Djibouti	9 180	–	–	–	–	2 877	405	–	–	–
Gabon	–	–	–	–	–	–	17 458	16 314	5 220	721
Ghana	–	–	–	29 120	17 922	400	–	811	45	25 036
Guinea	–	–	–	12 516	–	–	–	–	–	–
Côte d'Ivoire	–	–	5 639	2 866	–	–	–	–	–	–
Kenya	141	8 005	8 284	1 184	630 13	298	–	358	–	55 739
Lesotho	281	–	143	236	58	744	3 661	345	3 330	1 578
Madagascar	–	–	–	–	–	–	–	–	–	600
Malawi	–	–	–	–	–	–	–	–	14 530	–
Mali	–	–	13	377	–	–	–	–	–	–
Mauritania	–	–	–	–	–	–	–	–	–	64
Mozambique	59	–	3 300	15 399	185	240	375	57	230	–
Namibia	–	–	–	–	768	64	–	9 538	–	5 264
Niger	–	–	–	–	–	–	–	7	600	–
Nigeria	–	20 790	–	1 647	–	33 129	11 183	126 021	51 029	12 526
Rwanda	–	6 095	–	–	873	873	40 094	40 547	4 694	2 435
Senegal	–	–	–	–	–	2 666	20 673	–	32 690	84 579
Somalia	–	–	–	–	–	–	–	793	–	4 577
Sudan	–	–	–	–	–	–	–	2 065	64 025	–
Swaziland	254	21 654	–	237	–	–	–	–	2 070	12 461
Tanzania	–	–	–	–	416	1 408	–	6 296	11 246	9 394
Uganda	–	–	16 202	–	5 480	4 719	10 878	3 150	2 150	169 015
Zambia	–	–	24 089	60 335	–	6 435	36 350	11 036	18 920	32 141

Sources: *National Conventional Arms Control Committee annual reports for the years 2002–2009*, http://www.sipri.org/research/armaments/transfers/transparency/national_reports. Accessed on 14 Feb 15

⁸ *Business Day*, 14 April 1998 as cited by Peter Batchelor: South Africa's Arms Trade and the Commonwealth: A Cause for Concern?

Armcor, the state-owned Armaments Development and Production Corporation was established in 1968. Its objectives and tasks included, (as defined by the Armaments Development and Production Act no. 57 of 1968) promotion and coordination of the development, manufacture, standardization, maintenance, acquisition, or supply of armaments . . . utilizing the services of any person, body or institution or any department of the state'⁹. The corporation expanded its production activities by acquiring private companies and establishing new subsidiaries¹⁰.

With the change of government in 1994, government spending priorities changed from defence to social development. Armcor in recognition of the new development drew up a three-point plan that saw emergence of the manufacture of civilian products alongside the military ones. Since the Act under which Armcor was formed prohibited it or any of its subsidiaries from manufacturing civilian products that compete with the private sector, Armcor split into two separate entities on 1 April 1992 when a new company, Denel (Pty) Ltd, was established under the Minister of Public Enterprises. The role of the new company was the manufacturer and supply of products and systems while Armcor was to focus on programme management and acquisition¹¹.

Denel is a state-owned commercially driven company and strategic partner for innovative defence, security and related technology solutions and it has under it several defence and aerospace divisions and associated companies. The company and its subsidiaries provide turnkey solutions of defence equipment to its clients by designing, developing, integrating and supporting artillery, munitions, missiles, aerostructures, aircraft maintenance, unmanned aerial vehicle systems and optical payloads based on high-end technology. The company is a key supplier to

⁹ Lipton, M., *Capitalism and Apartheid* (David Philip: Cape Town, 1986).

¹⁰ Brzoska, M., 'Arming South Africa in the shadow of the UN arms embargo', *Defence Analysis*, vol. 7, no. 1 (1991), pp. 21–38

¹¹ ARMSCOR: <http://www.armcor.co.za/Services/Services.asp>. Accessed on 15 Feb 15

the South Africa National Defence Forces (SANDF) both as original equipment manufacturer (OEM) and for the overhaul, maintenance, repair, refurbishment and upgrade of equipment¹².

4.4 Presentation, Discussion, and Analysis of findings

The researcher issued a questionnaire to military officers from Kenya and South Africa, who occupy key positions of command, staff and training. The responses are as follows.

4.4.1 Age of Respondents

The ages of the respondents are as shown on tables 2 below.

Table 2 Ages of Respondents

Years	Kenya		South Africa	
	Frequency	Percentage	Frequency	Percentage
18-30	-	-	-	0
30-40	-	-	1	12.8
40-50	7	35	1	12.8
50 and above	13	65	6	74.4

Source: Survey data 2015

The ages of the respondents for the two countries indicate that they are all above thirty years of age, with 35% of Kenyans being in the 40-50 years category while 65% are fifty and above. On South Africa, those in the age category of 30-40 constitute 12.8%, same with those in the 40-50 category while 75% are fifty and above. The relatively advanced ages of the respondents is due to the fact that those interviewed are senior officers holding key appointments as commanders, senior staff officers, and senior trainers at senior colleges, who would normally have served for more than twenty years.

Table 3 Education Level of Respondents

Education Level	Kenya		South Africa	
	Frequency	Percentage	Frequency	Percentage
Primary	-	0	-	0
Secondary	-	0	1	12.5
Diploma	11	55	3	37.5
Degree	9	45	4	50

Source: Survey data 2015

The education levels of the respondents as shown on table 3 indicate that the majority have a diploma and above. The levels of education coupled with work experience (considering all those

¹² Ibid

interviewed are of the rank of Lieutenant Colonel and above) means the officers are well placed to explain military involvement in national development. The levels of education however cannot be said to have a direct correlation with the level of awareness of military involvement in national development.

Table 4 Gender of Respondents

Gender	Kenya		South Africa	
	Frequency	Percentage	Frequency	Percentage
Male	20	100	6	75
Female	-		2	25

Source: Survey data 2015

The Kenyan respondents are predominantly (100%) male while there is some representation of both gender in the case of South Africa, where the ratio of male to female is 3:1 as shown on table 4 above. The Kenyan case is due to the fact that female officers of the target ranks (Colonels and above, with few exceptions for Lieutenant Colonels in key appointments or directing staffs at senior colleges), and work experience are still very few. South Africa on the other hand has a better gender ratio, given their security sector reforms and affirmative action for the black military officers (including female) after the end of apartheid. There is no evidence that the response by those interviewed is dependent on the gender of the respondent.

Table 5 Military Service

Service	Kenya		South Africa	
	Frequency	Percentage	Frequency	Percentage
Army	9	45	4	50
Air Force	6	30	1	12.5
Navy	5	25	2	25
Other	-	0	1	12.5

Source: Survey data 2015

The data from table 5 above indicates that the respondents were drawn from all the services of both the KDF and the SANDF. The respondents from all the respective services of the two countries gave their input and therefore contributed to the findings of the study.

4.4.2 The Role of the Military in National Development

When asked whether the military has a role to play in national development of a country outside its traditional role of defence, all the respondents from both countries said yes. They were then asked to give reasons for their answer and the responses the respondents generally concur that the military has the necessary skills and equipment to take the lead in national development. Some of the areas in which the military can participate in development include construction, manufacture, Research and Development (R&D) and Military Aid to Civil Authority (MACA). The respondents were senior military officers occupying key policy appointments and have a wealth of experience on military capacity and limitations. Their responses therefore can be said to have been based on their vast experience and knowledge of military matters.

4.4.3 Military Industry

The respondents were asked if there is a military industry in their country to which all the South African respondents and 95% of Kenyan respondents, said there is. They were further asked to state whether the military industry is privately owned. All the respondents from Kenya, who had said the country has a military industry, indicated that the only one in the country is government owned. For the South African respondents on the other hand, all except one stated that some of the military industries are private. The military industries in South Africa manufacture products ranging from aircrafts, tanks, armoured personnel carriers, artillery guns, vehicles, to rifles and handguns. For Kenya, products include bullets for small arms, field kitchen, farm produce, food processing and water bottling. Respondents were asked to indicate how successful the military industries are; to which on South Africa, the responses were as follows: successful– 62.5%, above average– 12.5 %, and average– 25 %. The Kenyan respondents rated the industry as follows; average– 30%, above average– 10%, successful– 45 %, very successful– 5% and 10% did not respond. Table 6 below has the details. The Kenyan participants seem to have been unaware of a new privately owned company, Osprea Logistics, a UK-based military hardware

manufacturer that began constructing its workshop in Mombasa in 2012. The rating of the military industry in Kenya is understandably low compared to the one in South Africa. This can be attributed to the fact Denel, a South African company manufactures more advanced products including armoured cars, aircrafts, vehicles and drones, while Kenya's KOFC products include ammunition for small arms, weapon spares and processed food. The South African industry is also more established compared to the Kenyan one, having been in existence for more than sixty years.

Table 6 **Successfulness of military industries**

Service	Kenya		South Africa	
	Frequency	Percentage	Frequency	Percentage
Somewhat	0	0	0	0
Average	6	30	2	25
Above Average	2	10	1	12.5
Successful	9	45	5	62.5
V. Successful	1	5	0	0
No Response	2	10	0	0

Source: Survey data 2015

The respondents were then asked if they thought the military industry had made a positive impact in industrialization of the country and the following are their responses; on South Africa, 62.5% said yes while 37.5% said no. As for Kenyan respondents, 55% said yes, 35% no and 10% did not respond. The responses are as tabulated in table 7 below.

Table 7 **Impact of Military in Industrialization**

Service	Kenya		South Africa	
	Frequency	Percentage	Frequency	Percentage
Yes	11	55	5	62.5
No	7	35	3	37.5
No response	2	10	-	-

Source: Survey data 2015

Those who said yes (from both countries) when asked to state how the military industry had an impacted on industrial development, they said it had created employment, earned the country foreign exchange from export, savings on foreign currency by producing locally, created

independence from external suppliers of military equipment, innovation and technological advancement. The responses here can be based on the company's contribution in terms of its products, export earnings and employment opportunities. Denel being more established, and producing high-end products compared to KOFC contributes more to development.

The respondents were then asked if the military competes for contracts. For South Africa, 62.7% of the respondents said yes while 37.5% said no. On Kenya, 25% said yes, 70% no and 5% did not respond. As to whether the military industry products are exported to other countries, 100% of respondents on South Africa said yes. The Kenyans responded as follows; 60% yes, 35% no and 5% did not respond. The responders on South Africa explained that the military equipment and weapons are exported to most African countries, Middle East and some Asian countries while the Kenyan products are sold within the East African region and to the UN. The responses are based on the fact that while Denel has to compete for bids to supply to the SANDF, KOFC was established with the sole purpose of serving the KDF and other security agencies in Kenya, hence it gets first priority for supply of ammunition. It however competes to supply other non-military equipment for domestic use such as beds. Both Denel and KOFC export their products to external markets, although due to the nature of its products, Denel exports more than KOFC.

4.4.4 Involvement of Military in Non-Core Tasks

The respondents were then asked if they thought involving the military in non-core tasks compromises its ability to perform its primary duty of defending the country against external threats. Of those responding on South Africa, 87.5% said no while 12.5% said yes. The Kenya respondents on the other hand had 95% saying no while only 5% said yes. Those who said yes explained that military training could be compromised as personnel concentrated on non-core tasks. Personnel fatigue was also given as the other reason that could lead to compromise of military ability to perform primary tasks of defence. Finally, the respondents were asked if they thought the military industry is likely to contribute to industrial development in their countries.

For those responding on South Africa, 100% said it contributes while 95% of those on Kenya said yes and 5% no. There is general consensus that deploying the military in non-core tasks does not therefore affect their ability to respond to core duties of national defence. The senior officers from both countries also concur that the military indeed has a role to play in national development. The significance of this is that the senior military management is in support of engaging the military in socio-economic development in the two countries.

4.4.5 Summary of the findings

The findings of this chapter are that the military plays a key role in national development in Kenya and South Africa. These findings are based on both secondary and primary data. The respondents from both Kenya and South Africa concur that the military indeed has a role to play in national development outside its traditional role of defence, with 100% of the respondents agreeing. As to whether military involvement in human security development could compromise its ability to perform its primary role of defence against external aggression, 87.5% of the respondents on South Africa said it does not while 12.5% said it does. For Kenya, 95% said it does not while only 5% said it does. The researcher also established that the military industry is a key driver of industrialization in Kenya and South Africa with 100% of respondents on South Africa saying it is while on Kenya, 95% said it is a key driver with only 5% saying it is not.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Summary

A number of key findings related to the role of the military in development arose in this study. These include the contributions of various militaries to development. The defence industry in the US led to technology spin offs in aviation technology, computer, the semiconductor, the lithium battery and the GPS. In Africa, countries such as Egypt, Sudan, Ethiopia and South Africa have relatively advanced military industries, while Namibia, Senegal, Nigeria and Tanzania are developing capacity in this area. Kenya is still in infancy stage in military industry and the use of military capacity for national development, but efforts are being made to enhance this capacity. Areas in which militaries have been used for development include engineering and construction, Industrial development, Agriculture and Medical.

5.2 Conclusion

The role of the military in any state is primarily to protect it against external threat alongside other secondary functions that collectively contribute to a peaceful environment necessary for nation building. The contemporary focus of national security is a more holistic one that moves away from state-centric security to human security. The United Nations Trust Fund for Human Security identifies human security threats as “poverty, climate-related disasters, organised crime, human trafficking, health pandemics, and sudden economic and financial downturns”.

The resources available to provide comprehensive national security needs are inadequate and therefore to succeed, the government should utilise all means at its disposal including the military to spur national development. So far, not much has happened towards this end and even the Kenyan development blue print, the Vision 2030, does not factor military participation in the

country's development agenda unlike Namibia, which has identified a role for the military in its Vision 2030 development strategy.

Kenya, being a developing country requires input from all government institutions to play their role in national development. The country should follow the example of Developed countries including the United States of America, Britain and France that used the military to spur national development. Other countries that used their militaries to develop include China, Thailand and India. In Africa, Egypt, Ethiopia, Sudan, Namibia, South Africa and Senegal are some of the countries whose militaries have contributed immensely to national development.

The argument often advanced that involving the military in national development crowds out private sector is self-serving by countries that own such companies. The foreign owned companies are primarily profit driven, and the host country stands to gain very little in the long run in terms of technology transfer and capacity building.

Kenya, for example could deploy her military to construct roads, dams, boreholes and irrigation trenches as well as other forms of civic-military action in remote arid and semi-arid regions. This will not only help improve the living standards and food security in such areas, but will also contribute to security, as the presence of the military will serve as deterrence against conflict, while the now more economically empowered communities will have no reason to attack their neighbours. This worked very well in the Philippines during and after the end of the insurgency where the military moved in to the marginalized regions earlier under rebel control and established agricultural schemes. The initiative opened up the areas, leading to rapid development, hence lasting peace.

Kenya should borrow a leaf from fellow African countries such as South Africa, Egypt and Ethiopia among others whose militaries have relatively advance military industries. These military industries are involved in developmental activities ranging from weapon engineering to

agriculture. Weapon engineering although not directly contributing to wealth creation has several benefits. By producing own military equipment, these countries save on foreign exchange thus freeing money that would otherwise have been used, for other developmental purposes. The industries also create employment opportunities for the citizens as well as developing the country's technological base. Some of the military industries have a dual purpose in that they also produce products for civilian use such as agricultural equipment and vehicles that contribute directly to economic growth. There is also the risk that countries that supply military equipment could for one reason or another refuse to sell them or the necessary spare parts and ammunition in times of crisis, thereby compromising a country's ability to pursue its national interests. The Ethiopian military industry for example is involved in production of military equipment ranging from repair and overhaul of heavy armament, tanks and military vehicles, to upgrading and overhauling of military aircraft. METEC, an Ethiopian military company produces a wide range of ammunition and manufactures tractor and vehicle spare-parts, earning the country more than \$1.1 billion per year from the vehicle-assembly and engineering businesses alone. The company is also involved in the installation of electro-mechanical works for the Renaissance Dam, which is set to become Africa's biggest hydropower plant. Other contracts include construction of ten sugarcane plantations and processors across the country at a cost of about \$5 billion, and manufacture of turbines, generators and high-voltage electricity transmission cables. The company employs about 13,000 people, among them more than 1,000 engineers. In Uganda, the military is involved in the construction of the country's Standard Gauge Railway line as well as construction of military barracks.

The military can pioneer agricultural schemes that they could then hand over to the locals as part of food security initiatives. This method has been used in Israel whereby the military carry out the pioneer agricultural work especially in marginalized areas. Similar agricultural schemes are also carried out by the Pakistani and Burmese militaries. In Kenya, such projects could be

preceded by construction of dams in arid and semi-arid regions, which the military can also undertake.

KOFC is a strategic parastatal that manufactures military hardware for local consumption and export in the region and the UN. The corporation also manufactures a wide range of products such as farm produce, bottled water mainly for the KDF, and is also involved in farming and food processing and manufacture of the DEFKITCH. KOFC also manufactures tools for internal and external consumption such as weapon spare parts for Artillery Guns, and farm machine spare parts. Plans are underway to diversify products to include fabrication of metal containers for mobile homes, offices, computer laboratories and classrooms, vegetables dehydration, packaging of MREs, and manufacture of new calibres of ammunition. This is quite modest compared to established military industries in the continent such as Egypt, Sudan and Ethiopia but it is a good start.

5.3 Recommendations

The capacity of the KOFC should be expanded to increase volumes of its current products as well as enable it engage in diverse military and non-military projects. The increased capacity will enable it compete for development projects. The corporation should also consider expansion of its export market of existing products such as the DEFKITCH to new markets as well as sell of domestic products to the public through super markets and malls.

The military should attach key personnel to relevant industries both locally and abroad for technology transfer after which they will train others. This will ensure institutional memory and even when personnel retire, there will be others to carry on. All contracts for new equipment should include a clause for technology transfer. Personnel who gain this technology should then be bonded for a period of five years to ensure that such technology is passed to others. The

military should also consider additional remuneration as part of the strategy for retention of such personnel, whose retirement age should also be reviewed upwards, to may be 60 years of age.

The military should be involved in development programs such as the ongoing Lamu Port-Southern Sudan-Ethiopia Transport (LAPSET), the Standard Gauge Railway line and other major transport infrastructure. Where the contracts are awarded to foreign companies because the requisite technical knowhow is not locally available, the military should attach personnel to such companies to obtain the necessary skills. This will enable the military take lead in similar projects in the future, thereby saving the country foreign exchange.

The Military should take lead in R&D and make deliberate efforts to fund R&D to promote innovation. This should be done in collaboration with local universities to build capacity within the military. Some of the areas of research that the KDF could consider include mechanical engineering, civil engineering, medical, computer science, aviation, energy, automobile industry and armament.

The military should be involved in water development projects such as dams and boreholes in the arid and semi-arid regions of the country. This will contribute to food security and improve access to clean water for human consumption, livestock and crop farming in such regions thereby improving nutrition and subsequently the health of Kenyan citizens.

5.4 Recommendations for Further Research

Further study is necessary as the findings were based on a relatively small sample that may have influenced the results. There is therefore need to expand the sample size and carry out similar research with a different focus. Further research on the cost implications of military technology spin-offs in comparison to civilian institutes' led R&D is also recommended.

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UNIVERSITY OF NAIROBI

INSTITUTE OF DIPLOMACY AND INTERNATIONAL STUDIES

ROLE OF MILITARY IN NATIONAL DEVELOPMENT IN AFRICA: A CVASE STUDY OF KENYA AND SOUTH AFRICA

QUESTIONNAIRE

PERSONAL DETAILS (Please tick in the appropriate box)

1. Age bracket

- 18-29 30-39 40-49 above 50

Others please specify.....

2. Education

Primary level

Secondary level

Diploma level

Degree level

Others specify.....

3. Sex

a. Male.....

b. Female.....

4. Nationality

5. **Under which service are you employed?**

Army

Air Force

Navy

Other

Question 1: Do you think the military has a role to play in national development outside its traditional responsibility of defence? Yes No

Question 2: Please explain.....
.....
.....
.....
.....

Question 3: Does your country have a military industry? (Please tick in the appropriate box) Yes No

Question 4: Are companies in the military industry privately owned in your country? Yes No

Question 5: If yes to question 4 above, what type of Industry: weapon Vehicle Agricultural
Construction Medicine Other (Please state any other).....
.....

Question 6: In your opinion, is the industry Successful? Somewhat Average Above Average
Successful Very Successful

Question 7: Do you think the military has made a positive impact on industrial development? Yes
No

Question 8: Please explain.....
.....
.....
.....
.....

Question 9: Does the military industry compete for contracts in your country? Yes No

Question 10: Does the military industry export its products? Yes No

Question 11: Please explain.....
.....
.....
.....

.....

Question 12: Do you think involving the military in non-core tasks compromises its ability to perform its core tasks of defending the country against attack? Yes No

Question 13: Please explain.....

.....
.....
.....
.....

Question 14: Do you think military industry will contribute to industrial development in your country? Yes No
