

**The Role of Patents in promoting Economic Development in Zambia**

**By**

**Francis C. Mandumbwa**

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**A directed research essay submitted to the University of Zambia Law Faculty in Partial fulfillment of the requirements for the Award of the Bachelor of Laws (LLB) Degree.**

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Being a directed research essay submitted to the University of Zambia Law Faculty in Partial fulfillment of the requirements for the Award of the Bachelor of Laws (LLB) Degree.

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## **ABSTRACT**

This essay is aimed at examining the role that the law can play in bringing about economic development to Zambia. Specifically, the study looks at the role patent protection plays in bringing about development to a developing country like Zambia. The essay is set in motion by giving a synopsis of the law of intellectual property. Then the background of the concept of patent protection is described. The paper shows how patent protection found its way into Zambia and how the country has been an active player in international and regional treaties advancing the frontiers of patent protection.

The essay then indicates what relationship exists between stronger patent protection and FDI and between the former and public health. Further, the paper considers the effect that stronger patent protection has on economic development from viewpoint of a developing country. Then the essay considers the relationship between strong patent protection and technological transfer to Zambia.

Ultimately it was found that there is no clear relationship between stronger patent protection and economic development to a developing country in this case Zambia. Critical analysis shows that the relationship between sturdy patent protection and economic development is said by economists and lawyers to be represented by a U-shaped curve. That is to say stronger patent protection will initially have a negative relationship with development, especially if the country involved is a developing country. But eventually stronger patent protection pays off. It has finally been recommended that if patent protection should contribute significantly to the economic development of Zambia, the government should among other things increase the budgetary allocation for R&D, embark on student exchange programs with developed countries, encourage local research institutions such as Universities by sponsoring developmental projects.

## **DEDICATION**

This work is dedicated to my mother. *Nana, mwalingi chipangi mwane!*

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## TABLE OF STATUTES

The PACRA Act No. 15 2010

The English Law (Extent of Application) Act, Cap 11 of the Laws of Zambia

The Patents Act Cap 400 of the Laws of Zambia

The Trademarks Act Cap 401 of the Laws of Zambia

The copyright and performance Rights Act Cap 406 of the Laws of Zambia

## **LIST OF INTERNATIONAL INSTRUMENTS**

Patents, Designs and Trade Marks Act of 1883

Paris Convention for the protection of Industrial Property (1883), as amended on 28 September 1979.

The Patents Act 1902

The Patent Cooperative Treaty (PCT) of 1970

The Berne Convention for the protection of Literary and Artistic Works Paris of 24 July, 1971 as amended on 28 September 1979

The Convention Establishing the World Intellectual Property Organization (WIPO)

The TRIPS Agreement, 1994

WIPO Patent Law Treaty, June 2000

## LIST OF ABBREVIATIONS

AIDS	Acquired Immune Deficiency Syndrome
ARIPO	African Regional Industrial Property Organization
ART	Antiretroviral Therapy
DfID	Department for International Development
DPP	Director of Public Prosecutions
EPC	European Patent Convention
ESARIPO	Industrial Property Organization for English – Speaking Africa
FDI	Foreign Direct Investment
FNDP	Fifth National Development Plan
GDP	Gross Domestic Product
HIV	Human Immunodeficiency Virus
IP	Intellectual Property
IPRs	Intellectual Property Rights
JCTR	Jesuit Centre for Theological Reflection
LCDs	Least Developed Countries
MDGs	Millennium Development Goals
OECD	Organization for Economic Cooperation and Development
PACRA	Patents and Companies Registration Agency
PACRO	Patents and Companies Registration Office



PCT	Patent Cooperation Treaty
PLT	Patent Law Treaty
PSPR	Poverty Reduction Strategy Paper
R&D	Research and Development
TERI	The Energy Research Institute
TRIPs	Trade Related Aspects of Intellectual Property
UNCTAD	United Nations Convention on Trade and development
WIPO	World Intellectual Property Organization
WTO	World Trade Organization
ZDA	Zambia Development Agency

## **CHAPTER 1**

### **A SYNOPSIS OF THE LAW OF INTELLECTUAL PROPERTY**

#### **1.0 INTRODUCTION**

The fight against poverty is a very serious one hence all possible avenues should be employed to bring about economic prosperity. Zambia is classified as a developing country because the poverty situation in the country is very alarming. This research is aimed at finding out the nexus between intellectual property (IP) and development. The question that will (or at least that should) be answered is: How does patent protection promote economic development in Zambia? It is important then in this chapter to understand what the law of intellectual property (IP) is about.

#### **1.1 STATEMENT OF THE PROBLEM**

The problem of poverty is a widespread phenomenon more especially in developing countries and cannot be overemphasized. Zambia is not an exception. Poverty is a situation where a population or a portion of it is, at most, able to meet only its bare subsistence essentials of food, clothing and shelter to minimum levels of living.<sup>1</sup> Poverty is reflected in circumstances where a population or a section thereof is hardly able to meet its basic needs such as food, shelter, health, water and clothing. This is the situation in Zambia. The majority of the population lives below the poverty line. They can hardly afford a meal per day. The few that are educated cannot get decent employment.

Development means the eradication or at least reduction of poverty, availability of employment and equality: if these elements are not improving then, beyond doubt the country concerned is

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<sup>1</sup> M P Todaro and S C Smith, Economic Development, Pearson Education Ltd., India, 2008. Page 821

not developing.<sup>2</sup> The Zambian government has put up a lot of measures to improve the situation. The results of such endeavors have been but only on paper.

The measures employed by the government include the making of national development plans since independence. Currently the Sixth national development plan is almost ready to carry on from the Fifth National Development Plan (FNDP). The poverty Reduction Strategy Paper (PRSP) was embarked on but not much positive results were felt by ordinary Zambians. Further Zambia joined other countries in embarking on the Millennium Development Goals (MDGs). Instead of improving the situation, poverty levels are going higher. The gap between the rich and the poor is widening. Even after employing the aforementioned measures among others, the poverty situation is still as bad if not worse. The poverty conditions in Zambia call for measures from all sectors to be taken to bring about the much wanted economic prosperity.

## **1.2 OBJECTIVES OF THE STUDY**

The overall aim of the research is to uncover the nexus between intellectual property and economic development in Zambia. The study is homed in on establishing the impact that patent protection has on national development. The specific objectives of this paper are:

- a) To critically analyze patent protection in Zambia;
- b) To establish the impact, if any of stronger Patent protection on Foreign Direct Investment (FDI); and
- c) To uncover the upshot of patent protection on transfer of technology from developed countries to Zambia.

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<sup>2</sup> D Seers, The meaning of development, Paper presented at the Eleventh World Conference of the Society for International Development, New Delhi, 1969. Page 3

### **1.3 METHODOLOGY**

This study utilized both primary and secondary sources of information. The primary source was mainly composed of interviews with relevant institutions. The secondary source included a review of literature on the subject. In very restricted cases unpublished literature were consulted. The research also involved academic visits to relevant institutions to observe and get first hand information on the subject. With use of the foregoing methods the objectives of the study will be achieved.

### **1.4 RESEARCH QUESTIONS**

- a) What is the law of Intellectual Property about?
- b) How well established is this branch of law in Zambia?
- c) What is the relationship between stronger patent protection and economic development?
- d) To what extent does patent protection enhance the flow of FDI to a developing country such as Zambia?
- e) How does stronger patent protection impact on public health?
- f) What connection exists between stronger patent protection and transfer of technology to a developing country like Zambia?

### **1.5 SIGNIFICANCE OF THE STUDY**

The research is very important and could not come at better time than this when the nation is in urgent need of economic development. Today poverty levels are rampant. Both rural and urban poverty are common cause in the country. There is need therefore to resort to other means of fighting this blight, such as the law and in this case patent protection. This study is very useful as it critically analyses the role intellectual property can play in the fight against poverty.

## 1.6 INTELLECTUAL PROPERTY

Defined very broadly, intellectual property (IP) means the legal rights which result from intellectual activity in the industrial, scientific, literary and artistic fields<sup>3</sup>. IP is said to refer to a legal entitlement which sometimes attaches to the expressed form of an idea, or to some other intangible subject matter. The subject matter of IP is the product of the mind or the intellect. When fully established, such rights are treated as being equivalent to tangible property, such as real property, and are enforceable by the courts of law. The Convention establishing the World Intellectual Property Organization (WIPO) defines IP as follows:

“Intellectual property shall include the rights relating to:  
literary, artistic and scientific works; performances of performing artists, phonograms and broadcast; inventions in all fields of human endeavor; scientific discoveries; industrial designs; trademarks, service marks, and commercial names and designations; protection against unfair competition, and all other resulting from intellectual activity in the industrial, scientific, literary or artistic field.”<sup>4</sup>

From the foregoing it can be noted that IP aims at conserving rights of creators and other producers of intellectual goods and services by granting them certain time limited-rights to control the use made of those productions.

## 1.7 RATIONALE FOR INTELLECTUAL PROPERTY

IP is little understood even by lawyers. Yet, a closer assessment of the subject reveals that almost every activity of our daily lives, in many ways, is affected by IP. For example, the music we listen to, the medicine we take when we are unwell, the television we watch, the books we read and the alcoholic beverages we take to refresh ourselves all have an element of IP at least in one way or another.

Kanja<sup>5</sup> identifies a number of justifications for IP. He says it is an incentive for creativity. The production of IP products calls for a lot of investment in terms of time, money and skill. These resources must be rewarded for more creators, innovators and inventors of IP products to come up with initiatives. In order that such creators, innovators and inventors are encouraged to take

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<sup>3</sup> World Intellectual Property Organization (WIPO) Reading Material, (1998)

<sup>4</sup> Article 2 (iii) of the Convention as amended on 28<sup>th</sup> September 1979 (the WIPO Convention)

<sup>5</sup> G M Kanja, Intellectual Property Law, UNZA Press, Lusaka, 2006. pages 9-10

the risks involved in the investment, they must be rewarded by being granted exclusive rights to control the use or exploitation of their investments.

He further argues that IP prevents piracy and counterfeit. Piracy and counterfeit pose a danger to both the IP right holders and consumers; right holders would not derive the optimum benefit they ought to as the products are replicated and sold by other people. Where the counterfeit goods are food, cosmetics or drugs, they pose a stern danger to the health of the consumers. When IP protection is frail or enforcement of these rights is not effective piracy and counterfeit flourish. This floods the market with mediocre and illegitimate products. As such the local industries are impeded and foreign IP owners would not invest in such a country because they do not want to risk their investment. Furthermore piracy and counterfeit make the government lose revenue as no taxes are paid where piracy is rampant.

In the case of patents, the granting of intellectual property rights (IPRs) to inventors is on condition that such inventors furnish information about the product or process. IPRs encourage the publication and dissemination of information which has the benefit of widening the hoard of available knowledge. For example, as a prerequisite for the granting of patent protection, the applicant is required to endow sufficient information about the invention. This information is open to the public for inspection and it can be used after the patent period expires.

IP provides the means for the right holders of IP products or works to obtain reward for the time, money, skill and patience invested in the production of the same. It is a reward for labor because the owner of the product or process is allowed to participate in all economic benefit arising from the use thereof.

It is further argued that IP encourages Foreign Direct Investment (FDI). By having strong protection of IPRs FDI is boosted or attracted. The veracity of this assertion will be tested and discussed in great detail in chapter three of this paper.

There is also another belief that IP protection increases investment into local research and development. Where an individual is granted monopoly of the rights inherent for example in a patent, many more researchers are motivated to invest in research and development.<sup>6</sup>

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<sup>6</sup> A Ngenda, 'The Role of Intellectual Property in National Development and the Global Quest for Stronger Intellectual Property Protection: Is the North South Debate still Necessary?' Law Association of Zambia Journal 2(1999/2000) Page 6

Stronger IP protection is said to promote transfer of technology from developed to developing countries. Technological transfer may take the form of trade in capital goods, transfer of knowledge and establishment of firms.<sup>7</sup> An in-depth investigation of this is in chapter four.

IP protection could further increase the flow of goods. It is argued that increased flow of goods follows increase in FDI and transfer of technology. It is worth of note that IP continues to play a significant role in the globalization of trade, which in turn increases the flow of goods.

To sum up the rationale and justification of IP Judge Aldous in *Chiron Corporation V. Organon Teknika Limited (No. 10)*<sup>8</sup> said this:

“It is generally accepted that the opportunity of acquiring monopoly rights in an invention stimulates technical progress in at least four ways. First, it encourages research and invention; secondly, it induces an inventor to disclose his discoveries instead of keeping them a secret; thirdly, it offers a reward for the expense of developing inventions to the state at which they are commercially practical and, fourthly, it provides an inducement to invest capital in new lines of production which might not appear profitable if many competing producers embark on them simultaneously.

It is inherent in any patent system that a patentee will acquire a monopoly giving him a right to restrict competition and also enabling him to increase or at least maintain prices. That affects the public and it is contrary to public interest, but it is the recognized price that has been accepted to be necessary to secure the advantage to which I have referred.”

## 1.8 BRANCHES OF INTELLECTUAL PROPERTY

From the definition of IP given on page 4, it must be noted that the subject can be divided into two broad branches namely copyright and industrial property. Copyright consists of literary, artistic and scientific works; together with performances of performing artists, phonograms and broadcast (also known as neighboring rights). Industrial property on the other hand consists of inventions in all fields of human endeavor, scientific discoveries, industrial designs; and trademarks, service marks and commercial names designations; and protection against unfair competition<sup>9</sup>

### 1.8.1 COPYRIGHT

Over and above copyright is one of the means of promoting, enriching and disseminating the national cultural heritage. Copyright is the branch of IP that deals with the rights of intellectual

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<sup>7</sup> A Ngenda, The Role of Intellectual Property, Page 7

<sup>8</sup> (1995) FRS 325 at 332

<sup>9</sup> World Intellectual Property Organization (WIPO) Reading Material, Page3

creators. It is concerned with particular forms of creativity, primarily to do with mass communications. Section 2 of the Berne Convention<sup>10</sup> provides that the subject matter of copyright is usually directed towards literary and artistic works. It is worthy of note that this branch of IP protects 'works', this represents the 'expression' of thoughts and ideas. Ideas and thoughts as such are not protected until they are expressed in a book or a recording. In simple terms, the owner of a copyright is granted exclusive rights for a period of time to enjoy the fruits of his creativity without interference and to prevent a distorted reproduction, which only he can exercise. Other rights such as the right to make copies can be exercised by other persons to whom the copyright owner grants such rights.

The first international convention on Copyright is the Berne Convention of 1896. The Convention has been revised and amended several times. In 1994 the TRIPS Agreement was signed within the trade related context of World Trade Organization (WTO). The WIPO Copyright Treaty is the most recent international instrument on this branch of IP. In Zambia copyright is governed by the Copyright and Performance Rights Act.<sup>11</sup>

## **1.8.2 INDUSTRIAL PROPERTY**

As has been indicated earlier, industrial property consists of trademarks, industrial designs, new plant varieties, protection against unfair competition and patents for inventions. The Paris Convention<sup>12</sup> provides that industrial property shall be understood in the broad sense and shall apply not only to industries and commercial property but likewise to agricultural and extractive industries and to all manufactured or natural products for example wines, grain, tobacco leaf, fruit, cattle, minerals, mineral water, beer, flowers and flour.

### **1.8.2.1 TRADEMARKS**

A trademark is a distinctive sign of some sort that is used by a business to identify itself and its products and services to consumers and to distinguish the business goods and services from those of other businesses. Trademarks serve to uniquely point at the source or origin of goods and

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<sup>10</sup> The Berne Convention for the protection of Literary and Artistic Works Paris of 24 July, 1971 as amended on 28 September 1979

<sup>11</sup> Chapter 407 of the laws of Zambia

<sup>12</sup> Article 1(3) of the Paris Convention



serves; a trademark properly so called identifies the source and acts as an insignia of origin. A trademark consists of a name, word, phrase, logo, symbol, design, image, or a combination of one or more of these elements. Trademarks in Zambia are governed by the Trademarks Act.<sup>13</sup>

### 1.8.2.2 PATENT

A patent is a limited monopoly that is granted in return for the disclosure of technical information.<sup>14</sup> A patent is also defined as a set of exclusive rights granted by a state to a person for a period of time in exchange for the regulated public disclosure of certain details of device, method, process or substance which is new, inventive and capable of solving a specific problem. In Zambia this protection is sixteen years long (until 2013)<sup>15</sup>. According to the Trade – Related Aspects of Intellectual Property rights (TRIPS) Agreement the duration of the protection is twenty (20) years. The TRIPS Agreement is the first international instrument that brought about uniformity in patent and other IPRs. It gives minimum standards of protection that member states should provide. In simple terms a patent is the monopoly granted by the state to an inventor for a limited period, in exchange for the disclosure of the invention, in order that others may gain the benefit of the invention. The disclosure of the invention is therefore very essential in the granting of a patent.<sup>16</sup>

When a patent has been granted it means that the patented invention may not be exploited in the country by persons other than the owner unless such owner agrees to the exploitation by others. Therefore, while the patent owner is not given a statutory right to practice his invention, he is given a statutory right to prevent others from exploiting his invention which is known as the right to exclude others from making, using or selling his invention. The right to take action against any person who exploits the patented invention in the country without the owner's agreement constitutes the patent owner's most important right, as it allows him to derive the material

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<sup>13</sup> Chapter 401 of the laws of Zambia

<sup>14</sup> L B S Bently, Intellectual Property Law (3<sup>rd</sup> Ed.), Oxford University Press, New York, 2009. Page 338

<sup>15</sup> The TRIPS Agreement in Article 66 makes provision that LDCs such as Zambia should be allowed to progressively reach the acceptable standards of patent protection.

<sup>16</sup> WIPO, Intellectual Property Reading Material, Geneva, 1998. Page 13

benefits to which he is entitled as a reward for his intellectual effort and labor, and compensation for the expenses which his research and experimentation leading to the invention have entailed.<sup>17</sup>

## 1.9 THE TRIPS AGREEMENT

The Agreement on Trade Related Aspects of Intellectual Property rights was concluded in 1994 as part of the Uruguay Round of the General Agreement on Tariffs and Trade (GATT). This agreement is administered by the World Trade Organization (WTO) and all its members are subject to WTO's dispute settlement system.<sup>18</sup> The TRIPS Agreement is the first international measure to harmonize substantive patent provisions pertaining to patents generally and patentability of inventions. This is clearly seen from Article 27 (1 & 2) of the Agreement. The Agreement among other things general provisions on principles concerning procedures for acquisition and maintenance of industrial property rights. As a conditional precedent for the acquisition or maintenance of the rights in the Agreement (except protection of undisclosed information), member states are required to comply with reasonable procedures and formalities that are consistent with the Agreement.<sup>19</sup> The Article further gives direction as to how procedures for acquisition, maintenance, administrative revocation and inter parte procedures are to be governed.

## 1.10 CONCLUSION

Intellectual Property is a limb of law that protects rights of creators, innovators and inventors of property that is a product of the mind. It safeguards interests of creators, innovators and inventors so as to ensure that no one reaps from what they did not sow. It has been seen that this branch has its subdivisions discussed in the chapter. It has further been seen that IP can be broadly divided into Copyright and Industrial Property. Industrial property has been shown also to have several branches, one of which, Patent, is of particular interest in this paper. The chapter finally identifies the TRIPS Agreement as the first international step to harmonize patent protection.

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<sup>17</sup> WIPO, Intellectual Property, Page 13

<sup>18</sup> H MacQueen et al, Contemporary Intellectual Property, Oxford University Press, New York, 2008. Page 376

<sup>19</sup> Article 62 (1) of the TRIPS Agreement.

## **CHAPTER 2**

### **AN INVESTIGATION IN THE HISTORY OF PATENTS IN ZAMBIA**

#### **2.0 INTRODUCTION**

The previous chapter introduced the concept of intellectual property. The various aspects of IP were described briefly. As it may have been seen in the objectives, the sole purpose of this paper is patents. This chapter looks at the very genesis of patent protection from as far back as is recorded to date; how it extended to Zambia. Further, the chapter considers the law governing patents in Zambia and assesses its compliance to international instruments. For patents to bring about economic opulence to any country there is need for other promoters of development to be enhanced. The law is a very cardinal instrument in this regard. This is so because inventors of technology will not wish to invest their technology in a country that has not got an effective legal framework to sufficiently protect such technology from exploitation by other people than the inventor. Factors that would attract investors to a country are political stability, favorable exchange rates and an effective legal system among others.

#### **2.1 HISTORY OF PATENTS**

The earliest trace of patent protection is seen from Europe. Critical features of contemporary patent system originate from that part of the world as a form of state or monarch grace or favor. Initially monopolies over trade practices or production were used as a reward for loyalty or as a form of privilege, done through a letters of patent, which was an open letter used as proof that the privilege, the monopoly had been granted.<sup>20</sup>

The first ever recorded patent in England was for the method of making stained glass granted to John Utynam by King Henry VI in 1449.<sup>21</sup> However, the development of the patent system as a branch of law, in Britain started in the 16<sup>th</sup> century when the Sovereign granted privileges to subjects in return for the subject carrying out some corresponding duty. Unlike the current

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<sup>20</sup> H MacQueen et al, Contemporary Intellectual Property, Page 360

<sup>21</sup> H M Treasury, Gowers Review of Intellectual Property, December 2006. Paragraph 1.13

system, there were no formal checks or balances on the benefit granted by the Crown. As such, patents were frequently granted from activities that were already performed by individuals. As the Crown's grants of patents increased over the course of the sixteenth and seventeenth centuries, criticisms increased too.

Eventually the Crown's authority to grant patents was challenged by court action.<sup>22</sup> Later the discretion to grant patents was subject to Parliamentary intervention with the passage of the 1624 Statute of Monopolies, which imposed a general prohibition on the grant of patents by the Sovereign. While the statute of Monopolies imposed a general prohibition, on the grant of monopolies, an exception was provided in section 6 where the grant related to 'a manner of new manufacture. Not only did the Act limiting circumstances in which a patent could be granted, but it also limited the duration of the patent for new manufacture to a period of 14 years. This period corresponded to two apprenticeship terms and it was based on the idea that the patentee in return for the monopoly would teach the new art to two sets of apprentices.<sup>23</sup>

True to be told, there had been some form of patent system in many countries, but the system as it is known today traces its origin from the nineteenth century. It is worthy of note that it was only around the nineteenth century that procedural form and degree of certainty of process was introduced to the British patent system. The patent office was not established until 1852.<sup>24</sup> The patent office did not begin thorough examination of patent applications, in the sense of proper scrutiny of the existing fashion until 1905.<sup>25</sup> Prior to this it was sufficient merely to lodge a specification (a description of the invention) with the Patent Office to obtain protection.<sup>26</sup> Reforms brought about by the Patents, Designs and Trade Marks Act of 1883 introduced a more robust procedure for examining applications, but even then it was largely a matter of checking

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<sup>22</sup> Darcy V. Allin (1602) 74 ER 1131, this is a case where the grant of monopoly over playing cards was challenged on the ground that such an activity had been performed before.

<sup>23</sup> L B S Bently, Intellectual Property Law, Page 355

<sup>24</sup> Before then there were Commissioners who were replaced by the Patent Office in 1883.

<sup>25</sup> After the enactment of the Patents Act 1902

<sup>26</sup> H MacQueen et al, Contemporary Intellectual Property, Page 361

for deficiencies in the formalities of an application and for insufficiency in the description of the invention itself.

One of the most important changes that took place over the course of the nineteenth century was that patents changed from primarily being a creature of Crown prerogative to become a creature of bureaucracy. In spite of some of the trappings of the patent system's early ties with the Crown still remain; patents are better seen as creation of administrative process than a form of Crown prerogative. This budge from Crown to administration was armored with the passage of the Patents Act 1977 which saw Britain enter the European Patent Convention (EPC). Another important, yet frequently ignored change that took place in the nineteenth century was the crystallization of patent law. In reality it was only after the publication of the first text books on patent law and the first series of judicial decisions to consider the validity and infringement of patents that a distinct and relatively coherent law came into existence.

## **2.2 INTERNATIONAL AND REGIONAL CONVENTIONS**

Today patents have received international attention; a number of international and regional conventions have been created to regulate, harmonize and standardize the process of patenting. Most notable are the Paris Convention, the Patent Cooperation Treaty (PCT), TRIPS, WIPO Patent Law Treaty (PLT); and ARIPO among others.

### **2.2.1 PARIS CONVENTION**

The Paris Convention was born in 1883<sup>27</sup> as a result of the inevitable international interaction through trade. As countries needed to trade with one another, the need for an international convention to regulate such interactions was eminent. This convention was made to provide protection appropriately to a range of interests subsumed under the rubric of Industrial Property.

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<sup>27</sup> Paris Convention for the protection of Industrial Property (1883), revised at Brussels on 14<sup>th</sup> December 1900, at Washington on 2<sup>nd</sup> June 1911, at The Hague on 6<sup>th</sup> November 1925, at London on 2<sup>nd</sup> June 1934, at Lisbon on 31<sup>st</sup> October 1958, and at Stockholm on 14<sup>th</sup> July 1967 and as amended on 28 September 1979.

The Convention obliges its signatory countries to provide protection, yet it is silent about the substantive elements of the patent law. Article 2 provides for the national treatment principle. The principle provides that each signatory state should afford the same rights to foreigners of other signatory states as to its own nationals. National treatment is also extended to nationals of non-contracting states who are domiciled in contracting states or if they have a real and effective industrial or commercial establishment in any contracting state.<sup>28</sup>

The convention grants an applicant a 12 months right of priority from the date of first filling of a patent in a signatory country.<sup>29</sup> This right entails that no subsequent filling of related applications in other countries within this period will be invalidated by the earlier filling, nor will any publication or use of the invention affect patentability. It also means that the novelty of all applications will be tested by reference to the period before the first filling.

Article (4bis) of the Convention provides for the independence of each national patent. The granting of a patent in one contracting state does not obliged the other contracting states to grant a patent; a patent cannot be refused, annulled or terminated in any contracting state on the ground that it has been refused or annulled or has terminated in any other contracting state.

Further the convention emphasizes in article (4ter) that focus is put on the inventor who has the right to be named in the patent. The primary holder of a patent is the inventor. However this general rule may be validly varied by allowed modifications at domestic laws.

### **2.2.2 PATENT COOPERATION TREATY**

The Patent Cooperative Treaty (PCT) was signed in 1970 and came into operation in 1978. The key feature of this treaty is that it makes provision for a system of international application and preliminary examination procedure. As at 1<sup>st</sup> January, 2008 the PTC had a membership of 138 contracting states. It is worthy of note that this treaty only provides for an international application and search; but the power to grant patents remains with the patent office.

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<sup>28</sup> Article 3 of the Paris Convention

<sup>29</sup> Article 4 of the Paris Convention

### 2.2.3 TRADE RELATED ASPECTS OF INTELLECTUAL (TRIPS OF 1994)

It is clear from the provisions of the TRIPS that the Agreement is of dramatic beneficial impact to many developing countries. The impact of TRIPS may increase, however, as the jurisprudence of at the World Trade Organization (WTO) takes shape. The Agreement re-echoes the provisions of Article 2 of the Paris Convention.<sup>30</sup> The importance of the national treatment cannot be over emphasized.

The TRIPS Agreement introduces another important anti-discrimination provision in Article 4, commonly known as the Most Favored Nations rule. The article states as follows:

“With regards to the protection of Intellectual Property, any advantage, favor, privilege, or immunity granted by a Member to the nationals of any other country shall be accorded immediately and unconditionally to the nationals of all other Members. Exempted from this obligation are advantage, favor, privilege or immunity accorded by a Member:

- a) Derived from international agreements on judicial assistance or law enforcement of a general nature and not particularly confined to the protection of intellectual property;
- b) Granted in accordance with the provisions of the Berne Convention (1971) or the Rome Convention authorizing that the treatment accorded be a function not of national treatment but of the treatment accorded in another country;
- c) In respect of the rights of performers, producers of phonograms and broadcasting organizations not provided for under this agreement;
- d) Derived from international agreements related to the protection of intellectual property which entered into force prior to the entry into force of the WTO Agreement, provided that such agreements are notified to the Council for TRIPS and do not constitute an arbitrary or unjustifiable discrimination against nationals of other Members.”

From the foregoing provisions it is apparent that the TRIPS Agreement makes provision to ensure that discrimination has no place in international law pertaining to patents.

The Agreement gives special consideration for the needs of the least developed countries. Article 66 provides:

- 1. “In view of the special needs and requirements of least-developed country Members, their economic, financial and administrative constraints, and their needs for flexibility to create a viable technological base, such Members shall not be required to apply the provisions of this

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<sup>30</sup> Article 3 of the TRIPS Agreement

agreement, other than Articles 3, 4 and 5<sup>31</sup> for a period of 10 years from the date of application as defined in paragraph 1 of Article 65. The Council for TRIPS shall upon being duly requested by a least-developed country Member, accord extension of this period.

2. Developed country Members shall provide incentives to enterprises and institutions in their territories for the purpose of promoting and encouraging technology transfer to least-developed country Members in order to enable them to create a sound and viable technological base.”

#### **2.2.4 PATENT LAW TREATY**

In the previous decade or so WIPO has been engaged in an on-going program of reforming international patent law. The first successful fruit of the endeavor was the Patent Law Treaty (PLT) which was completed in June 2000.<sup>32</sup> This treaty aims at simplifying and streamlining procedures for obtaining and maintaining a patent. It is intended to harmonize patent procedures relating to national and regional patent applications and maintenance of patents. The PLT promises to reduce the cost of patent protection as a result of national patent offices sharing the results of search and examination procedures; and to make the process more user-friendly and more widely accessible.<sup>33</sup>

#### **2.2.5 AFRICAN REGIONAL INDUSTRIAL PROPERTY ORGANIZATION (ARIPO)**

ARIPO formerly known as the Industrial Property Organization for English-Speaking Africa (ESARIPO), which was established, under the former name, by an agreement adopted at Lusaka on 9th December, 1976. ARIPO was mainly established to pool the resources of its member countries in industrial property matters together in order to avoid duplication of financial and human resources. The founding fathers of ARIPO intended to form an organization that would

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<sup>31</sup> These Articles provide for National Treatment, Most Favored Nations and Multilateral agreement on acquisition or maintenance of protection respectively.

<sup>32</sup> WIPO Patent Law Treaty 2<sup>nd</sup> June 2000

<sup>33</sup> L B S Bently, Intellectual Property Law, Page 356



be responsible for the formation of industrial property legislations for the region and its various member countries.

## 2.3 PATENTS IN ZAMBIA

The origin of patent law, like many other laws in Zambia, can be traced from the laws of the United Kingdom (UK). This is because the UK patent laws were passed to Zambia at independence as Zambia was a British colony before attaining political sovereignty. Section 2 of the English Law (Extent of Application) Act<sup>34</sup> provides that subject to the provisions of the Constitution of Zambia and any other written law, the common law, and doctrines of equity, and the statutes which were in force in England on the 17<sup>th</sup> August, 1911 (being the commencement of the Northern Rhodesia<sup>35</sup> Order in Council 1911); and any statute of later date in force in England, now applied to the Republic, or which hereafter shall be applied thereto by any Act or otherwise shall be in force in the Republic.

The administration of patents in the Republic is under the Ministry of Commerce, Trade and Industry. Under this Ministry is the Patents and Companies Registration Agency (PACRA). The PACRA Act<sup>36</sup> replaces what was the Patents and Companies Registration Office (PACRO) with PACRA. The Act establishes the Agency and provides for the procedures for the granting of patents among other functions. The Act makes provision in part III for the application of international provisions. In accordance with the Paris Convention, the Act provides for the right of priority, independence of each national patent and the Most Favored Nations principle as well as the National treatment Principle.

A careful study shows that except for the term of a patent, which is 16 years in Zambia but is supposed to be 20 years according to the TRIPS Agreement, the local law on patents complies with the international Conventions and Treaties. After a careful study of the TRIPS, it has been

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<sup>34</sup> Cap 11 of the Laws of Zambia

<sup>35</sup> This is what Zambia was called before Independence.

<sup>36</sup> Act No. 15 of 2010

discovered that a least developed country like Zambia has 10 years, from the coming into force of the TRIPS, to apply the TRIPS Agreement.<sup>37</sup>

## 2.4 CRITERIA FOR PATENTABILITY

In order for a patent to be granted there are certain requirements that must be met. This is what is referred to as the criteria for patentability. These conditions include that the invention must consist of patentable subject matter; the invention must have industrial applicability, in other words it must be useful; it must be novel (new); it must show a sufficient inventive step, that means that the invention must not be obvious; and the disclosure of the invention must meet certain minimum standards.<sup>38</sup>

For an invention to qualify for patent protection it must fall within the class of subject matter that is patentable. The Authors of the WIPO Reading materials give the following as the examples of technology that may be excluded from the scope of patentable subject matter:

discoveries of materials or substances already existing in nature; scientific theories or mathematical methods; plant or animal varieties, or essentially biological processes for the production of such plant or animal varieties, other than microbiological processes; schemes, rules or methods, such as those for doing business, performing purely mental acts or playing games; methods of treatment for humans or animals, or diagnostic methods practiced on humans or animals (but not products for use in such methods).<sup>39</sup>

In the case of *Diamond v. Chakrabarty*,<sup>40</sup> the American Court had an opportunity to make a pronouncement on an issue to do with the patentable subject matter. The Court was to determine whether human-made micro-organisms are patentable subject matter. Facts of the case were that Chakrabarty filed a patent application directed to an oil-eating bacterium. The patents authority rejected a claim to the bacterium itself on the grounds that living matter is not patentable subject matter. The Board of Patent Appeals and Interferences upheld the examiner's rejection. The

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<sup>37</sup> Article 66 of the TRIPS Agreement of 1994

<sup>38</sup> WIPO, Intellectual Property, Page 14

<sup>39</sup> WIPO, Intellectual Property, Page 14

<sup>40</sup> 447 U.S. 303 (1980)

rejection was overturned on appeal to the US Court of Customs and Patent Appeals and the US Supreme Court granted certiorari.

It was held that living organisms are patentable subject matter under 35 USC 101 and Chakrabarty's micro-organism constituted a "manufacture" or "composition of matter" within the meaning of that statute. The Court held that the terms "manufacture" and "composition of matter" are to be given a broad construction. The court noted that the judiciary must be cautious when contemplating expanding patent law to new areas that Congress had not foreseen.

In order for an invention to be patented it must be industrially applicable, it does not have to be merely theoretical. This means that the invention should be replicable. The expressions "Industrial applicability" and "applicability" denote the carrying out or use in practice and the possibility of making and manufacturing it in practice respectively.<sup>41</sup>

Novelty is a very important requirement in any examination as to substance. The basic concept of novelty means that to be new and useful an invention should not have been known to the others in the public previously. An invention may be known by having been the subject of a prior patent or publication or by having been used or available on the market. Any prior knowledge is normally sufficient to challenge novelty, regardless of how long ago that may have been not withstanding that it was commercialized or not. An invention is new if it is not anticipated by the prior art. 'Prior art' simply means all the knowledge that existed before the relevant filing or the priority date of a patent application regardless of whether it existed by way of written or oral disclosure.<sup>42</sup>

Further, Even if an invention has not previously been known; meaning that it satisfies the "novelty" requirement, it will still not be patentable if the differences between the invention and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains. This condition is known as Inventive Step or Non-Obviousness.<sup>43</sup> Determining non-

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<sup>41</sup> WIPO, Intellectual Property, Page 14

<sup>42</sup> WIPO, Intellectual Property, Page 15

<sup>43</sup> WIPO, Intellectual Property, Page 16

obviousness is more subjective than determining novelty. For instance, in some technologies an ordinary mechanic may be the "person of ordinary skill in the art," while in others that person may be a doctoral level researcher. How a prior art disclosure is to be interpreted or what it actually teaches are often subject to substantial disagreement among skilled people in the technical field.

The final requirement is that before the granting of the patent is that the applicant must furnish the Patent office with sufficient information such that given the information any person skilled in the art can replicate the invention. The requirement of full disclosure of the invention is a benefit to the granting authority. In consideration for the protection granted by the patent office, the applicant is required to describe in detail including proportions and techniques where necessary in order that those persons skilled in the area of art can make and use the invention, as of the filing date of the application.<sup>44</sup> This, as has been stated above is provided for in Zambia under the Patents Act.

## 2.5 CONCLUSION

Having considered the history of patent law it is clear that this law has gone through a meticulous transmutation since it was first used. It has been seen that the modern patent law began as a system of grace or favor from the Crown, but the major features from early on has been the idea of the patents a form of a social contract between the patentee and the Crown with obligations on both sides. In return for the protection the patentee must make known his invention. This branch of law saw its major development in the nineteenth century. When Zambia got independent she had the patent law in England, her former colonial master, passed on to her with appropriate changes. The granting of patents is done by PACRA. It has been discovered that the local legislation complies with international instruments.

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<sup>44</sup> WIPO, Intellectual Property, Page 17

### **CHAPTER 3**

## **THE ROLE OF STRONGER PATENT PROTECTION IN PROMOTING ECONOMIC DEVELOPMENT**

### **3.0 INTRODUCTION**

There has been a lot of debate between two groups of lawyers and economists; one faction argues that there is a positive nexus between stronger patent protection and economic development while the other avers that there is no such connection, if anything it is a negative relationship that exists. As it shall be seen later in the chapter both positions are true depending on which region one is inclined to and at what level of development that region is. From the viewpoint of developed countries the first position is true, yet the second position is true in the case of developing countries and least developed countries (LDCs). This chapter seeks to discover the nexus between patent protection and economic development in Zambia. To measure development, the research uses three variables Foreign Direct Investment (FDI), Public Health and Technological Transfer.

The above variables are some of the indicators that economists use to measure development. The logic therefore, is that if stronger patent protection positively impacts on these variables then stronger patent protection will be said to promote economic development. If on the other hand a negative effect is discovered between stronger patent protection and each of the variables then it will be concluded that stronger patent protection is a deterrent to (or at least does not promote) development. The chapter will tackle two of the variables; FDI and public health. The third will be discussed in the next chapter.

### **3.1 EFFECTS OF STRONGER PATENT PROTECTION ON FDI**

A foreign direct investment enterprise is defined as an incorporated or unincorporated enterprise in which a direct investor resident in another economy owns 10 per cent or more of the ordinary

shares or voting power for an incorporated enterprise or the equivalent for an unincorporated enterprise.<sup>44</sup>

Lee and Mansfield<sup>45</sup> examined the relationship between business perceptions of the strength of a country's system of IPRs and the volume and composition of U.S. FDI in that country. They found that countries in which the IPR regimes were perceived to be weak tended to attract lower FDI volumes. Notwithstanding the possible costs of FDI for the home country and the host country, FDI is perceived often by policymakers to be an important engine for economic growth, especially in developing countries, as the Honorable Minister said in the excerpt on page 32 below. This perception has attracted increasing attention over the past decades, especially during the negotiations preceding the ratification of the TRIPS Agreement and subsequent use of bilateral agreements on IPRs in the TRIPS-plus era. The question then is: how do agreements aimed at strengthening IPRs in developing countries impact on FDI decisions by multinationals?

OECD argues that customarily, attracting FDI in general, and in R&D in particular, has been high on the policy agenda of many countries, as inward flows of R&D are believed to provide net earnings for the host country. The acquisition of modern technology may generate important spillovers for the host country economy, which result in more and better competition, increase R&D employment, give better training and support to education, upgrade domestic innovative capacity, and reverse 'brain drain' effects<sup>46</sup>. However, inward FDI may have negative effects on the host country, such as loss of control over domestic innovative capacity, potentially impacting the technological competitiveness of domestic firms and leading to job losses. In addition, outward FDI has negative effects on the home country, such as loss of jobs and technological capacity.<sup>47</sup>

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<sup>44</sup> Organization for Economic Cooperation and Development (OECD) 2008

<sup>45</sup> J. Lee, and E. Mansfield, "Intellectual Property Protection and U.S. Foreign Direct Investment." *Review of Economics and Statistics* (1996) 78(2):181–86.

<sup>46</sup> R. Veugelers, and B. Cassiman, 'Foreign Subsidiaries as a Channel of International Technology Diffusion: Some Direct Firm Level Evidence from Belgium'. *European Economic Review* (2004) 48(2): 455–76.

<sup>47</sup>(OECD) 2008

Arguably, FDI has a positive impact; but the question to be addressed is who benefits ultimately when developing countries strengthen their IPRs? In an interview with a Chief Economist<sup>48</sup> from the Ministry of Finance and National Planning it was discovered that in fact as a developing country, Zambia does not need a strong IP regime so as to allow her copy technology from the more industrialized economies. According to him, it is only highly industrialized economies that would want to have strong patent rights as they are the ultimate beneficiaries of such a step.

In another interview with a Mr. Mwamba,<sup>49</sup> it was revealed that patent grants in Zambia are relatively low. The maximum number of grants in the passed 9 years was recorded in 2006 when 58 letters of patent were issued. Yet the year 2008 recorded the lowest number of grants (8) in this period. This information is illustrated figure 1 below. When asked whether patent grants impacts on FDI in any way, Mr. Mwamba said it is difficult to establish a link between the two especially in a developing country.

Year	2001	2002	2003	2004	2005	2006	2007	2008	2009
<b>Patents Granted</b>	47	38	28	22	46	58	51	8	47

Figure 1; Source: Studies by author, obtained from PACRA, Lusaka.

When probed further the officer revealed that all the grants were for foreigners except in the recent past when locals have accounted for a 2% of the grants. This means that it is mostly foreign highly industrialized countries that are granted patents, as such a larger chunk of the money they recoup from their inventions is sent back to their home countries.

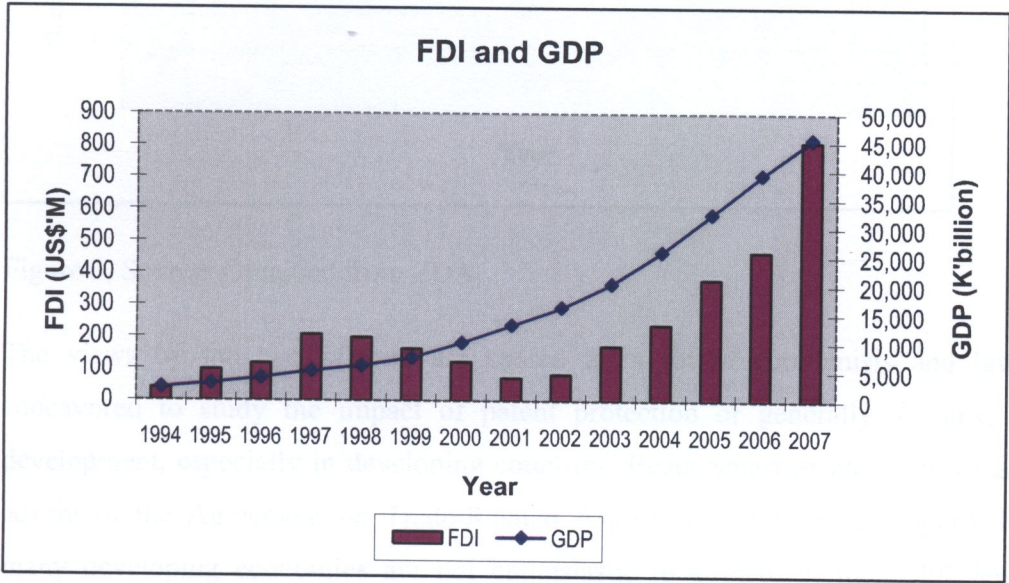
<sup>48</sup> Mr. Lupunga interviewed on 20<sup>th</sup> January 2011

<sup>49</sup> An Examiner from PACRA interviewed on 14<sup>th</sup> January 2011



The World Investment Report<sup>50</sup> shows that generally in Africa FDI inflows rose to \$88 billion in the year 2008 despite the global economic crisis. The top 10 recipient countries<sup>51</sup> of FDI accounted for nearly 82 per cent of the sum. The report further indicates that the 33 least developed countries (LDCs) in Africa which include Zambia, received only US\$ 30 billion, while the top 10 had US\$ 72.16 billion. Zambia and the 32 other (LDCs) had to share the US\$30 billion. This clearly shows how low FDI flows are into LDCs. Figure 2 below shows FDI flows into Zambia and GDP over the period.

Figure 2. Source: Adopted from ZDA



From the statistics indicated in figure 1 and 2 it is very hard to establish any relationship between the patents granted and FDI flows into the country. This is so because in 2001 when 47 patent letters were issued FDI was at one of its lowest levels; at only US\$72 million. Figure 3 below

<sup>50</sup> UNCTAD, World Development Report 2009

<sup>51</sup> These are: Morocco, Sudan, Congo, Algeria, Tunisia, Libyan Arab Jamahiriya, South Africa, Egypt, Angola and Nigeria; in ascending order, with Nigeria and Morocco receiving \$20 billion and \$2billion respectively.



shows the county's GDP growth for the period given. Comparing this graph and figure 1 shows no prima facie connection.

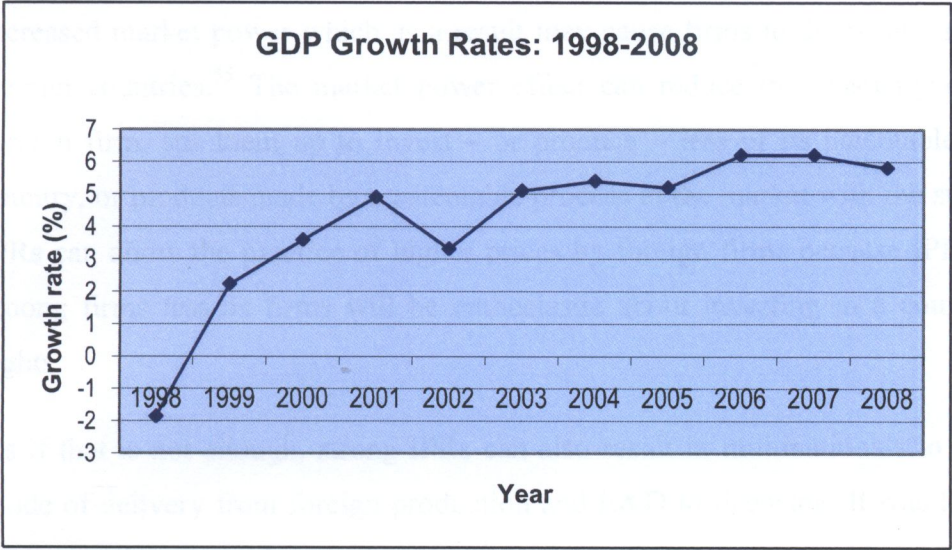


Figure 3, Source: Obtained from ZDA.

The views by the two officers are shared by a lot of economists and lawyers that have endeavored to study the impact of patent protection or generally a sturdy IP regime and development, especially in developing countries. Beata Smarzynska<sup>52</sup> argues that in spite of the advent of the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS), many developing economies are not enthusiastic to strengthen their IPR legislation and its enforcement, fearing that the losses resulting from this action would outweigh the benefits.

<sup>52</sup>B Smarzynska, "The Composition of Foreign Direct Investment and Protection of Intellectual Property Rights: Evidence from Transition Economies," In Intellectual property and development: lessons from recent economic research. World Bank and Oxford University, New York, 2005.

Studies demonstrate that developed countries are the major beneficiaries of strong IP rights<sup>54</sup>. In this study it was found that the strength of IPRs positively affected FDI decisions only for more developed countries.

It was further found that strong IPRs negatively influence FDI by providing rights holders with increased market power which as a result may cause firms to divest and reduce their service to foreign countries.<sup>55</sup> The market power effect can reduce the elasticity of demand facing the foreign firm, stir them up to invest – or produce – less of its patentable products in the host country, or products made by a patentable process in the market with the stronger IPRs. Stronger IPRs can allow the practice of higher prices by foreign firms because IPRs reduce competition among firms less as firms will be enthusiastic about investing in a country with stringent IP rights.

As if that is not enough, strong IPRs can also result in multinationals to switch their preferred mode of delivery from foreign production and R&D to licensing. It was found that firms prefer FDI over licensing when protection is weak, as firms are more able to maintain direct control over their proprietary assets through internalized foreign production or in-house foreign R&D. In this case, strengthening IPRs diminishes the incentive for FDI at the margin for R&D-intensive industries.<sup>56</sup> It follows therefore from the above studies that brawny patent protection has no immediate positive benefit on the FDI of a developing country.

### **3.2 STRONGER PATENT PROTECTION AND PUBLIC HEALTH**

The debate of patent protection in developing countries is incomplete if the issues of public health and pharmaceuticals are not addressed. When considering public health the first issue that comes to mind is that of the HIV and AIDS and access to drugs thereof. However, as it has been

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<sup>54</sup> DfID and UK IP office, Technical Report on Intellectual Property and Developing Countries, RAND Corporation Europe, 2010.

<sup>55</sup> B C A Primo and C. Fink, 'Relationship between Intellectual Property Rights and Foreign Direct Investment', *Duke Journal of Comparative & International Law* (1998a) 163(9): 163–88

<sup>56</sup> WIPO SMEs Newsletter, September 2010

said above this paper uses public health as one of the variables for measuring economic development. A question may be posed as to how public health could be an indicator of economic prosperity. The answer is not hard to detect; when there is economic opulence, people are able to access good medical care; those that are very well off would afford to go to fee-paying hospital yet the rest of the people would be attended to by government hospitals with adequate drugs and qualified personnel. This will mean that the life expectancy of the country will be higher. The infant mortality rate<sup>57</sup> reduces as the other effects of below par health care do. As a result there will be generally an adequate health care. Therefore if there is a positive link between stronger patent protection and public health then it can be concluded that the former promotes economic development. How then does a stronger patent protection impact on public health?

At the same time as IPRs may support markets for information, there is often a counter-argument that proliferation of patents could suffocate biomedical innovation by raising transaction costs.<sup>58</sup> Studies have shown patents to have negatively affected researchers' access to knowledge, as measured by citations.<sup>59</sup> In another counter-argument some scholars have noted that in history, R&D departments have remained close to production and promotion departments, and that this is fundamental reflection of innovation process. Hopkins<sup>60</sup> argues that separating these functions of production and promotion across the markets is likely to have contributed to the recession in pharmaceutical innovation and exacerbated the myth of the biotechnology revolution.

Emerging pharmaceutical industries respond no differently to changes in IP protection than established pharmaceutical industries. This concept is supported by case study evidence. The TRIPS Agreement is not injurious if seen from the standpoint of a growing Indian

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<sup>57</sup> The number of children who die before their first birthday out of every 1000 live births (M P Todaro and S C Smith, *Economic Development*, Page 87)

<sup>58</sup> M A Heller, and R S Eisenberg, 'Can Patents Deter Innovation? The Anticommons in Biomedical Research', *Science* 280(5364)(1998) 698–701

<sup>59</sup> DfID and UK IP office, *Technical Report on Intellectual Property and Developing Countries*, RAND Corporation Europe, 2010

<sup>60</sup> M Hopkins, 'The Myth of the Biotech Revolution: An Assessment of Technological, Clinical and Organizational Change', *Research Policy* 36(4) (2007) 566–89

pharmaceutical industry, yet it is detrimental to consumer welfare in terms of availability and access. The Indian pharmaceutical industry provides the message that strengthening IP protection increases domestic R&D expenditure significantly and patenting in developed economies<sup>61</sup>. However, this finding needs to be qualified. It is likely that educational and broader economic development have played an important part. In a study across 26 countries over two decades, it was discovered that strengthening IP protection in the pharmaceutical sector does not significantly increase domestic R&D expenditure, patenting and innovation<sup>62</sup>. Indeed, there is a point in development at which IP regulation actually reduces innovative activities and simply serves to increase rents to established companies<sup>63</sup>. These results raise the prospect that low and middle-income countries have gained little in terms of domestic innovation, which could offset the new and higher flows of royalty payments to foreign firms.

The price of antiretroviral therapy (ART) across 34 countries was found to be higher where there were product patents<sup>64</sup>. Introducing generic manufacturers to the market is one way to reduce the cost of accessing medicines. It follows that creating IP conditions that are favorable for generic competition will reduce prices, and the empirical evidence supports this. Generic manufacturers are not encouraged by strapping patent protection.

The impact that IPRs have on Price, specifically, is one factor among the copious that affect poor people's access to healthcare. Weaknesses in country-level physical, medical, financial and political infrastructures mean that many existing products needed by people in developing countries are not being purchased by patients, but by healthcare facilities, governments or non-

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<sup>61</sup> A Dutta, and S Sharma 'Intellectual Property Rights in Developing Countries: Evidence from India', unpublished paper 2008.

<sup>62</sup> Y Qian, 'Do National Patent Laws Stimulate Domestic Innovation in a Global Patenting Environment? A Cross-country Analysis of Pharmaceutical Patent Protection, 1978–2002'. *Review of Economics and Statistics* 89(3) (2007) 436–53

<sup>63</sup> L D Qiu, and H Yu 'Does the Protection of Foreign Intellectual Property Rights Stimulate Innovation in the U.S.?' Hong Kong University of Science and Technology

<sup>64</sup> J R Borrell, 'Pricing and Patents of HIV/AIDS Drugs in Developing Countries', *Applied Economics* 39(4) (2007) 505–18

governmental organizations. Thus, for example, there is the prospect that many patients with AIDS in Africa would not benefit automatically from ART, even at dramatically lower, affordable prices. ART require diagnosis, monitoring and long-term maintenance of demanding treatment regimens (in order to minimize drug resistance) that are difficult to sustain without adequate infrastructure and support. In many developing countries, access is a particularly complex problem, requiring political will and commitment of new resources.

### **3.3 ROLE OF PATENT PROTECTION IN PROMOTING ECONOMIC DEVELOPMENT IN ZAMBIA**

The effect that patent protection may have on the national economic development is not free from debate. Diverse findings have been discovered in different countries. Looking at the Zambian situation will make this paper different. Being a developing country, Zambia needs to view patent protection carefully. The Zambian government through the Minister of Commerce, Trade and Industry Hon. Felix Mutati said this on the subject:

"Intellectual Property is steadily being recognised as a tool for promoting socio-economic development of nations. Development of nations is gradually becoming dependant on creations of the human mind and the application of such knowledge and ideas as intellectual capital in various areas of development which has significantly contributed to the creation of wealth in these nations. Industrialised countries have effectively utilised Intellectual Property as a tool for social and economic development while developing countries including Zambia have continued to lag behind in this area."<sup>65</sup>

With great optimism the Honourable Minister commented thus about the expected outcome of the policy:

"... This policy is aimed at encouraging inventors, innovators and creators to work diligently knowing well that their works will not only give them benefits in form of recognition and royalties but also contribute to national development. The economic development of Zambia will therefore rest on her ability to provide effective legal protection to Intellectual Property and knowledge generated by human intellectual activity and reward inventors, innovators and creators for their efforts.

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<sup>65</sup> The Honorable Minister said this in the Foreword to the National Intellectual Property Policy of 2009.

... Indeed, I am greatly honored and privileged to present the National Intellectual Property Policy as a critical step towards deriving benefits from National Intellectual Property for the economic development of Zambia.<sup>66</sup>

From the above quotation it is more apparent that the government of Zambia is of the view that stronger IP protection will almost automatically result in economic development and that once Zambia implements the policy she will grow economically like the countries in the west that took advantage of IPRs earlier.

As can be seen from the government's statement, one aspect which has generated much debate is the role that intellectual property rights (IPRs) can play either as enabler or inhibitor of the learning processes of knowledge acquisition, absorption and diffusion. On the one hand, investors, creators and innovators are unwilling to transfer their expertise if they cannot be guaranteed protection against unauthorized and uncompensated use of the inventions developed as a result of their investment. IPRs, which include patents, are a tool for providing such protection and, as such, a strong patent protection regime is likely to improve the prospects of attracting more investors. On the other hand, by restricting who can utilize the acquired knowledge and on what terms, IPRs can also result in limiting the absorption and diffusion of technology, for example by preventing reverse engineering, or by imposing high costs on use of incremental innovations based on the acquired technology. This means that the benefits of accessing the technology are diluted. However, as acquired technology is mastered, technological capabilities are built up locally, facilitating increased indigenous innovation, which is in turn incentivized by IPRs.<sup>67</sup>

Generally, international, country-level, and company-level studies show that innovation, as measured by R&D or patenting, has a positive association with economic productivity and enhances market share and profitability at the company level. Hence, IP protection is important to sustain competitive advantage and allow the creators, innovators and inventors to capture the benefits of their investment. Effective management of innovation and IP should be a fundamental

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<sup>66</sup> Foreword to the National Intellectual Property Policy of 2009.

<sup>67</sup> R Wolson, "Intellectual Property Tools, Innovation And Commercialization Of R&D: Options To Assist Developing Countries In Positioning Themselves To Reap The Benefits Of A Stronger Intellectual Property Regime, With Special Reference To The Role Of Intellectual Property Management In Research Organizations "

Presented at the UNCTAD Regional Dialogue held in Cape Town, South Africa from 29 June to 1 July 2004;

strategic objective for countries and companies, particularly in knowledge-based and innovation-intensive economies.<sup>68</sup> That paper analyzed policy initiatives in the US, Japan, China and the EU aimed at increasing innovation, IP, and competitiveness.

Earlier studies that analyzed benefits of patenting and how those benefits created incentives for companies to invest in R&D and innovation, produced mixed results<sup>69</sup>, while other studies found that rigid patent protection regimes could hinder innovation<sup>70</sup>. But in most contexts patent regimes allow researchers to use IP for research purposes, and more recent studies substantiate the value and benefits of IP and patents to developed countries. Ngenda<sup>71</sup> was generally of the view that strong patent protection is necessary for economic development but argued that developing countries are reluctant to strengthen their IP systems because the benefits resulting from such a move would benefit developed countries more than it would benefit LDCs.

### **3.4 CRITICISMS OF INTELLECTUAL PROPERTY**

Notwithstanding rationale and justification of IP, a number of scholars have advanced criticisms of IPRs. It is submitted that IP may bring about abuse. The owner of an important item protected by IP law might be tempted to use his position to control a market to the disadvantage of products similar to his own and he can charge a high price for the product under the guise of recouping expenses and profit on investment over the product work or brand.<sup>72</sup> Furthermore the IPRs owner may abuse his position by threatening potential competitors of legal action. Such threats may sometimes be groundless. The victim of the threat would in most cases avoid court action by complying with the demands of the IPRs owner.

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<sup>68</sup> A Rifat, I Havey and J wild, *Innovation, Patents and Economic Growth*, Discussion paper 5, Imperial College of London, London, 2006.

<sup>69</sup> E Mansfield, *Patents and Innovation: An Empirical study*, *Management Science* 1986 32: 173 - 81

<sup>70</sup> S Scotchmer, *Standing on the shoulders of giants: Cumulative research and the patent law*. *Journal of Economic Perspectives* 5(1991) 29 - 41

<sup>71</sup> A Ngenda, 'The role of Intellectual Property, Page17

<sup>72</sup> H Mwakyembe and G M Kanja, 'Implications of the TRIPS Agreement on the Access to cheaper Pharmaceutical Drugs by Developing countries: case study of South Africa V. The Pharmaceutical Companies,' *Zambia Law Journal*. Vol. 32 (2002), Pages 111 - 147

Some IP rights such as copyright, perpetuates unjustified monopoly by denying the public access to information which should otherwise be freely available. Through the royalty system, IP represents a tax on knowledge and increases the price of books and music among other things that are essential to the promotion of education and dissemination of culture.<sup>73</sup>

It is sometimes argued that IP acts as a disincentive to least developed countries (LDCs). This is so because developed countries, which happen to be the major exporters of patents, trademarks, designs and copyright products, exploit LDCs that are dominantly importer of the IP products in order to drain money there from. Most importantly, IP protection allows foreign firms to exercise control over the availability and affordability of the protected items. Developed countries use trade threats and sanctions on LDCs to get their way. For example this happened in 1998 when the United States of America (USA) perceived Brazil and India to deny adequate and effective protection of IP rights of US companies, in particular pharmaceutical patents.<sup>74</sup> Additionally developed countries refuse to allow tradition based innovations or traditional knowledge to be protected by IP thereby denying royalties to developing countries that may result from the exploitation of traditional knowledge.

It has also been argued that availability of IP and its implementation are two different things. Implementation and enforcement of IP depend on the ability, willingness and effectiveness of the legal and administrative structures of any given country. There must be mutual willingness to legislate and implement, otherwise the statute books will be dead letter law. Other pitfalls of IP are the lack of preliminary or final injunctive relief, inadequate remedies, delays in the procedures of enforcement and bias against foreigners inter alia.<sup>75</sup>

### 3.5 CONCLUSION

Having considered the above indicators, it is clear from the evidence of the present and previous studies consulted in this chapter that there is no clear link between strong IP rights and FDI or public health. The study has actually shown that there is a negative relationship. The Chief

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<sup>73</sup> G M Kanja, Intellectual Property Law, Page 10

<sup>74</sup> G M Kanja, Intellectual Property Law. Page 11

<sup>75</sup> A Ngenda, 'The role of Intellectual Property. Page17



Economist from the Ministry of Finance and National Planning and the other researches consulted in this chapter confirm that for a developing country, like Zambia, a lower patent protection would be more helpful. The reverse is true for industrialized countries.

To sum up the foregoing it is worth of note that the concept of development is a complex and multifaceted process. Therefore narrowing this complex process to discover the link between it and a single aspect like patent protection is not an easy task. This is probably why it has been hard to pin point the relationship between them. The process of development requires a whole set of factors including, political will, a stable government, a disciplined government with investment and others like legal, cultural and economic factors.

## **CHAPTER 4**

### **PATENT PROTECTION AND TECHNOLOGY TRANSFER**

#### **4.0 INTRODUCTION**

In the previous chapter it was seen that stronger patent protection does not benefit developing countries, at least not directly, on the contrary it benefits developed countries. To finish up the study this chapter considers the impact of strong patent protection on the flow of technological transfer into developing countries like Zambia. The concept of technology transfer is defined first. The paper goes on to establish the link if any between stronger patent protection and technology transfer.

Technology transfer may be defined as the transfer of technology developed or initially discovered in the public sector (for example universities and government agencies) to private industry for further development and commercialization.<sup>76</sup> In the current case the paper is investigating the transfer of technology from developed countries to developing countries. In an interview, the Chief Economist from the Ministry of Finance and National Planning disclosed that technology may be transferred in four main ways namely, Imitation; Stealing; through Trade and transfer of human capital or Joint venture<sup>77</sup>. Mr. Lupunga was of the view that not withstanding the fact that the first two options are illegal, they are the most practicable for a developing country like Zambia. This is so because of the argument that patent protection is tailored to benefit developed countries at the expense of LDCs.

Mr. Lupunga averred that imitation is a lot easier to do when dealing with technology that is not very sophisticated. This is because it could involve dismantling the product and learning how to rebuild it (also known as reverse engineering). Of course this may not be the most legal approach to take as it involves infringing the intellectual property rights of the manufacturer. Further he

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<sup>76</sup> <http://www.med.unc.edu/tibbs/career-info/technology-transfer-and-patent-law> visited on 3<sup>rd</sup> February 2011

<sup>77</sup> Mr. Lupunga, a chief economist from the Ministry of Finance and National Planning, interviewed on 20<sup>th</sup> January 2011.

said that theft of the technology is another method that though illegal, is feasible for developing countries and LDCs. These two ways are possible yet illegal so they are not advisable. He argued that these two methods of transferring technology do not arise with the strengthening of patent protection; on the contrary technology would be transferred in this fashion where there is an extremely weak patent regime. According to him then, if there should be any technology transferred to Zambia, the government should formulate policies to ensure that patent laws are very weak until the country has copied enough of the technology. This, according to Mr. Lupunga is what happened to China before it started developing steadily. This may be true for China, but from a lawyer's standpoint, all ventures aimed at development should be legal at all costs.

In another interview with Zambia Development Agency (ZDA), the Research Officer<sup>78</sup> indicated that of the four methods of technology transfer, the last two are the most legal and as such should be encouraged. He described the third way as involving sending someone to school or on attachment to a foreign firm where they can learn how the technology operates. They can then return to their home country and share the expertise. He gave examples of mines that have sent their employees to school as good examples of this type of technology transfer. Mr. Chibwe however, said that this method is not very effective as the trained personnel from outside are in most cases not relevant to the local needs of the country. He gave examples that some people may go China to train as engineers yet their training is often not responsive to the immediate needs of Zambia. As such even after a number of people have gone to train from developed countries no impact has been felt of any transfer of technology into the country.

Finally he commended joint venture as certainly a good way of obtaining technology for a developing country. A joint venture agreement between the state and the owner of the technology can take many forms. What is important is that there is a valid contract between the state and the technology owner. Ideally it is thought that this agreement will enable the receiving state to benefit from the technology, for example through the people that get employed in ventures that arise from such agreements. All things being equal, it is believed that in such a way technology is transferred to the receiving country. As a matter of fact with a strong patent

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<sup>78</sup> Mr. Chibwe Kaunda, Research officer from ZDA interviewed on 25<sup>th</sup> January, 2011.

regime, investors may be willing to enter into such ventures but the question still remains as to how such a venture would benefit Zambia? Though investors may invest in the country there is no real improvement in the lives

Technology transfer is very important as it provides jobs which may be found on either end of this transfer, that is to say, in the institutions seeking to bring their technology to market or in the companies that will develop the technology. In addition, jobs are also found in go-between organizations such as non-profit technology transfer centers that facilitate the transfer of technology from public sector to private. Jobs may be a direct effect of investment in a country like Zambia, yet it is imperative to investigate as the chapter seeks, and discover whether there is any technology being transferred. Unless such a transfer is exposed, it will be hard to maintain that there is any true long term impact on the economy of the receiving country. Without such an effect then, like in the case of FDI, it can be argued that strong patent protection will only benefit *developed countries at the expense of developing countries.*

#### **4.1 EFFECTS OF PATENTS ON TECHNOLOGY TRANSFER INTO ZAMBIA**

To understand the impact patents have on the transfer of technology into Zambia it is helpful to consider studies that have been done in other developing countries on the similar subject. The question that this chapter seeks to address is: what effect does patent protection (weak or strong) have of technology transfer?

In a study five Asian research institutes collaborated to evaluate the domestic status and transfer of three key mitigation technologies namely clean coal, solar power and bio-fuels to China, India, Indonesia, Malaysia and Thailand. Preliminary results presented in New Delhi on 21 October 2009 revealed that the argument advanced by developed countries that strong patent laws in developing countries ease technology transfer is not true.<sup>79</sup> For example, Malaysia which has a strong IPR regime is a member of the World Trade Organization (WTO) and therefore

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<sup>79</sup> <http://www.scidev.net/en/climate-change-and-energy/climate-change-in-india/news/link-between-patent-law-and-tech-transfer-not-proven.html>. Visited on 3<sup>rd</sup> February 2011

subscribes to the Agreement on Trade Related Intellectual Property Rights (TRIPS) under which members of the WTO agreed to a minimum standard of IP laws. But the country has benefited little from the transfer of clean technologies. Retno Gumilang Dewi a researcher at the Bandung Institute of Technology found that Indonesia, too, has had a similar experience.<sup>80</sup>

The research further found that sturdy IPR regimes could even hinder developing countries' access to technology; Dewi submitted that if a developing country is able to uphold patent law, patents are often held by foreign investors or corporations. She said monopoly rights held by such corporations stifle local research by preventing local firms from adapting technology to local needs. This is not only true for Asia. It holds a lot of water in the case of Zambia as well.

As it was established in the previous chapters the extent to which international technology flows would increase depends importantly on the state of access to such information; which access is determined by a diversity of factors. Barriers may come from many sources in the recipient country, including poor infrastructures, weak domestic absorption capacities, restrictions on inward technology, trade, and investment flows, and inadequate regulatory systems. In this context, IPRs could play a positive and important role in mitigating the costs such factors raise for investors and thereby expanding technology flows. It should however, be apparent from this brief description, that simply strengthening IPRs alone cannot suffice to improve access notably. Rather, the IP regime needs to be strengthened by appropriate infrastructure, governance, and competition systems in order to be effective.

At the same time, however, patents can block technology transfers under certain circumstances. Firms may choose to withhold technological information from particular countries for competitive reasons, a strategy that is facilitated by globalized IPRs. The specter of anticompetitive deployment of patents and patent pools in order to discourage local firms from learning technologies through imitation and reverse engineering surely looms large in the context of weak competition enforcement in most developing economies. Thus, as ever in the area of

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<sup>80</sup> <http://www.scidev.net/en/climate-change-and-energy/climate-change-in-india/news/link-between-patent-law-and-tech-transfer-not-proven-html>. Visited on 3<sup>rd</sup> February 2011

IPRs, there is a balancing act to pursue in linking policy on technology protection to the needs of economic development.<sup>81</sup>

Developing country opponents further assert that stronger IPRs may retard the process of industrial development. According to this view, weak IPRs function as a kind of infant industry policy that allows indigenous firms to learn from, absorb, and experiment with foreign technology at low cost. If one believes that local firms must build a capacity to imitate before they can innovate, then it is possible that premature imposition of a strong IP regime could actually hold back economic development rather than promote it.<sup>82</sup>

In another study it was confirmed that indeed there is a relationship between IPRs and development in general and between patent protection and technology transfer in particular. This research involved 64 developing countries in the period from 1975 to 2000. It was found actually that IPRs have a positive effect on innovation (patenting in US). This study Confirms that a U-shaped curve relationship exists between IP strength and development levels (the curve first decreases, then eventually increases).<sup>83</sup>

The central premise of the developing country position is that a strong IP regime can hinder access of developing countries to technology. Transfer of technologies to developing countries is thought to come in a number of ways. Firstly, where most patents in a developing country are held by foreign inventors or corporations, monopoly rights conferred by patents could stifle R&D by local researchers. Secondly, a strict IP regime makes it difficult for local firms or individual researchers to develop and make use of the patented technology, as this could be prohibited or expensive. Also, should a local firm wish to 'legally' make use of patented technology; it would usually have to pay significant amounts in royalty or license fees. Further, even if a local firm is willing to pay the commercial rate for the use of patented technology, the

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<sup>81</sup> K E Maskus, Patent Rights and International Technology Transfer through Direct Investment and Licensing Department of Economics, University of Colorado at Boulder Revised on 30 June, 2003.

<sup>82</sup> K E Maskus, Intellectual Property Rights in the Global Economy, Institute for International Economics, Washington, 2000.

<sup>83</sup> B H Hall, Patent Protection and technology transfer – help or hindrance? University of California and University of Maastricht, Berkeley, 2010.

patent holder can withhold permission to the firm or impose onerous conditions, thus making it extremely difficult for the firm to use the technology.<sup>84</sup>

The cross-border movement of persons possessing a particular type of knowledge is a means of international technology transfer or diffusion. Countries may either gain or lose from the permanent (or long-term) international migration of skilled persons. International migration of skilled persons in principle contributes to building the recipient countries' skills endowment, while entailing a loss in the origin country's stock of human capital (at least immediately). Those two processes are commonly referred to as "brain gain" and "brain drain" respectively. The most important issue for countries' long-term development is the net effect of migratory flows. LDCs have a low skill endowment. Therefore, the international migration of skilled persons from and to those countries can have a strong impact on their human capital stock. The human capital endowment of an economy is a fundamental determinant of its long-term growth performance, its absorptive capacity and its performance in technological learning. It is also a requirement for the effective working of trade, FDI, licensing and other channels as means of technology diffusion. In LDCs the major migratory flow of qualified professionals is that of skilled people settling mainly in developed countries.<sup>85</sup>

The empirical literature on IPRs and international technology transfer has concentrated mainly on market-based channels of technology transfer, that is to say licensing. However, little is known on the effects of stronger IPRs on non-market channels of international technology transfer, namely reverse engineering and imitation. The empirical literature on IPRs and domestic innovation has established the existence of a U-shaped relationship between IPRs and economic development at the country level, suggesting that weak protection may ease economic development.<sup>86</sup>

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Discussion paper, *Emerging Asia contribution on issues of technology for Copenhagen* The Energy Research Institute (TERI) of China and the Norwegian Ministry of Foreign Affairs September 2009

UNCTAD: The Least Developed Countries Report 2007

DfID and UK IP office, *Technical Report on Intellectual Property and Developing Countries*

ND Corporation Europe, 2010

In a study set out to find out the role of patents in transfer of technology and economic development to Zambia generally, Mr. Ngenda advised that patent protection being, but just one factor that may bring about development depending on the level of economic advance, it is not true to argue that strong patent protection promotes technological transfer which in turn promote economic opulence. This is so because a lot of factors bring about economic growth.<sup>87</sup>

## 4.2 CONCLUSION

To sum up the foregoing chapter it is interesting to note that there seems to be a negative relationship between patent protection and the flow of technology to a developing country like Zambia. This is so because as it was seen from the interview with the specialists that strong patent protection which in most cases protects interests of developed countries and hinders the transfer of technology by copying or reverse engineering. Such methods of acquiring technology are illegal in a jurisdiction that has stringent patent protection. Studies show that generally strong patent protection may encourage investors to bring their technology to such destinations with high patent protection but the developing country in the end gets nothing.

Some studies have shown that the nexus between patent protection and technology transfer is represented by a U-shaped curve relationship. This means that at the beginning a strong patent regime will have almost no noticeable effect. But as time goes on the relation becomes more positive and more visible. This may explain the finding in this study that a strong patent regime has a negative impact on FDI, Public Health and technology transfer.

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<sup>87</sup> A. Ngenda, 'The role of Intellectual Property, Page 20



## **CHAPTER 5**

### **CONCLUSION AND RECOMMENDATIONS**

#### **5.0 CONCLUSION**

From the finding of the study discussed right from chapter one to this point, a number of lessons have been learnt, different views of different experts and researchers have been found. It is from such finds that a conclusion should be drawn. In chapter one it was established that intellectual property is a branch of law that protects rights and interests of inventors, innovators and creators. It was also found that the law of intellectual property (IP) has two branches namely copyright and industrial rights. Under the latter are the following branches: inventions in all fields of human endeavor, scientific discoveries, industrial designs, trademarks, service marks and commercial designs and protection against unfair competition. Though the area of interest in this study is patent protection, it can be concluded on the basis of the findings in the first chapter that IPRs are essential as they protect interests of inventors, innovators and creators. IP rewards the work of the mind and investment on the innovation, invention or creation as the case may be.

In the second chapter it was found that the issue of patents is not only a matter of international law but it is a concern for Zambia as well. This is so because the branch of law in question is very important in any society, regardless of the level of development. Zambia is an international player in patents as it is a member to a number of international instruments regulating that branch of law. One such instrument which has managed to standardize the law on IP is the TRIPS Agreement. This agreement requires all member of WTO to comply with it. It gives the minimum standard of IP protection that should be provided by member states. In Zambia patent matters are governed by the Patents Act Chapter 400. This Act makes provision in part III for the application of international provisions. After a careful study of the local law governing patents, Zambia can be said to have satisfied almost all its obligations under the TRIPS, except for the allowed exception of the term of a patent which is supposed to be 20 years. It is safe to wrap up that Zambia has made quite sufficient strides towards standardizing the law on patent protection.

In the third chapter it was hard to discover a relationship between strong patent protection and FDI and consequently on economic development. This is so because scholars have divergent

views on the point. On the hand there is a faction that believes that stronger patent protection brings about FDI which in turn results in economic opulence. This bloc of scholars agree that FDI inflows provide net earnings for the host country. The acquisition of modern technology may generate important spillovers for the host country economy which results in more and better competition, increased expenditure in R&D, better training and support to education, upgrade domestic innovation capacity and reverse the 'brain drain' effects.

The other faction avers that there is at least no relationship between patent protection and development. They argue that if anything, there exists a negative relationship between these two factors. They argue that even if strong patent protection has a positive effect on FDI the ultimate beneficiary is the developed country that invests and not the developing country. This may be a sound conclusion in the case of Zambia. The country has a good patent law regime, arguably, and there are investors that have invested in there but there seems to be no real economic development. It was found that inward FDI flow has the potential of to negatively affect the host country in areas such as loss of control over domestic innovative capacity, impact on the technology competitiveness of domestic firms and lead to job losses. The World Investment Report showed that in 2008 the 33 African LDCs to which Zambia belongs received only US\$ 30 million. Zambia with a good enough patent regime would have received a better percentage of the investment into Africa. With this and other factors illustrated in chapter three, it is very hard to succinctly say that there is a *prima facie* relationship between sturdy patent protection and FDI. When patent grants over a period of time were compared to the Country's FDI, no relationship could be discerned from the statistics.

To understand the findings in chapter 3 and 4, it is very important to remember an issue that came to light in chapter 4. This is that there exists a U-shaped curve relationship between IPRs and economic development. This means that as the IPRs protection is strengthened a negative effect is experienced; but as time goes on the economic situation improves. This explains why those states with very strong IPR regimes are usually developed and those with the weakest IPR protection are often poor.

To sum up the foregoing, it is very important to note that for Zambia to develop there is need to improve a number of factors including the political stability, financial accountability and

discipline, economic social stability and an effective legal regime. The role of patent protection in promoting economic development is important but should not be exaggerated. Patent protection alone can not yield the desired results.

## 5.1 RECOMMENDATIONS

With the above findings, the following recommendations are given if the patent and IP regime generally has to be helpful in Zambia's endeavor to economic development:

The enforcement rules should be tailored to the conditions and needs of the country, consistent with the requirements of the TRIPS Agreement. Such rules should not constitute, in particular, a threat to local competitors nor deter local innovative initiatives. This would make the regulations responsive and alive to the peculiar needs of Zambia while complying with the TRIPS Agreement.

In the enforcement of the rights courts and administrative bodies (including customs authorities) should not substitute right holders in the exercise and defense of their IPRs. Actions should be taken, when appropriate, upon request of the right holder. This is hard to envisage in criminal offences as all crimes are prosecuted by the DPP. When the host country spends its resources on defending the rights of investors the host state may in the final analysis benefit nothing from investor.

There should be a balance in the enforcement of the law: IPRs enforcement need not be given priority over other law enforcement functions. Further, direct beneficiaries should bear enforcement costs, particularly; patent registration fees should take into account enforcement-related costs.

There is need for coordination among different areas of government, including customs authorities. This should be done to in order that the government can consistently deal with enforcement issues in different international fora.

The government should find a way of encouraging local research institutions to patent their discoveries. This will make the country enjoy the benefits of local research. The money recouped from such would remain in circulation in the country.

The government is further recommended to increase the budgetary allocation for Research and Development (R & D). This will promote innovation that will lead to a lot of local researchers coming up with new products and services. Since these will be local investments, the direct benefit on the Zambian economy is not far fetched.

The government should seriously embark on student exchange programs with the countries with whom there is a lot of trade in technical goods so that when the students return home they will be able to operate such imported machinery and possibly do some reverse engineering.

It is hoped that if the above recommendations are taken into consideration patent protection will be one of the important factors promoting economic development in Zambia.

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Zambia National Intellectual Property Policy of 2009

## **PRESENTATIONS**

Wolson, R. "Intellectual Property Tools, Innovation And Commercialization Of R&D: Options To Assist Developing Countries In Positioning Themselves To Reap The Benefits Of A Stronger Intellectual Property Regime, With Special Reference To The Role Of Intellectual Property



## INTERVIEWS

Mr. Chibwe Kaunda, Research officer from ZDA interviewed on 25<sup>th</sup> January, 2011.

Mr. Lupunga, a chief economist from the Ministry of Finance and National Planning, interviewed on 20<sup>th</sup> January 2011.

Mr. Mwamba, an Examiner from PACRA, interviewed on 14<sup>th</sup> January 2011 at the Head Office.

## WEBSITES VISITED

<http://www.scidev.net/en/climate-change-and-energy/climate-change-in-india/news/link-between-patent-law-and-tech-transfer-not-proven.html>. Visited on 03/02/2011

<http://www.med.unc.edu/tibbs/career-info/technology-transfer-and-patent-law>. Visited on 03/02/2011