



TRADE NOTES

BIODIVERSITY RELATED INTERNATIONAL INITIATIVES AND NATIONAL POLICY COHERENCE FOR DEVELOPMENT AND POVERTY REDUCTION IN KENYA

Kenya is involved in several international initiatives that affect the manner in which trade transactions are undertaken. These include: the World Trade Organization (WTO) Trade-Related Aspects of Intellectual Property Rights (TRIPs) Agreement; Convention on Biological Diversity (CBD); International Union of Protection of New Plant Varieties (UPOV); Food and Agriculture Organization (FAO); International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA); the Economic Partnership Agreements (EPAs) between the European Union (EU) and the African Caribbean and Pacific (ACP) countries; the Common Market for Eastern and Southern Africa (COMESA); the East African Community (EAC) Customs Union Protocol; and the African Growth Opportunity Act (AGOA) among others. These conventions are implemented by different Ministries and Parastatals. In some instances, implementation is done through different legislation or policies leading to weak coordination.

This bulletin is based on proceedings of the Traditional Knowledge and Development (TDP) Workshop held in Nairobi, Kenya in June, 2008 and examines the various international initiatives and legislations relating to biological resources and their degree of domestication in Kenya. The bulletin concludes that there is need for coordination of various implementing lead agencies in Kenya in conservation and use of biodiversity for national development and poverty reduction as promised in the Vision 2030.

INTRODUCTION

International Conventions and Treaties

Kenya is party to various International Conventions and treaties relating to biodiversity but has not ratified all of them in a manner to contribute to socio-economic development of her people. Several treaties and conventions concerning biological resources have not been debated exhaustively. For instance, the relationship between the WTO-TRIPs Agreement and the CBD on the scope of patent protection has been debated since 1999 but is yet to be concluded.

The synergies between UPOV and FAO-ITPGRFA on farmers' rights and

farm saved seeds are issues of international debate in terms of bio-prospecting and benefit sharing. In all these conventions, no proper mechanisms have been put in place to complement one another, which is a major challenge to implementing parties.

There are several gaps, loopholes, overlaps and disconnect in the implementation of CBD related Conventions and Treaties in Kenya. In particular, there is no proper coordination in implementation of the Environmental Management and Coordination (Conservation of Biological Diversity and Resources, Access to Genetic Resources and Benefit Sharing) Legal Notice No. 160 of 2006.

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Biodiversity

The term "Biodiversity" was coined in late 1980s as short form for biological diversity and describes variability in species, ecosystems, habitats and genetic make-up. Biodiversity is often understood in terms of the wide variety of plants, animals and microorganisms and includes genetic differences within each species - for example, between varieties of crops and breeds of livestock. Globally, about 1.75 million species have been identified including small creatures such as insects. Scientists reckon that there are about 13 million species in the world most of which are yet to be identified. It is estimated that up to 90%, 80% and 10% of living animals, plants and microbes respectively have been described. Figure 1 below illustrates percentages of discovered and described species in the world.

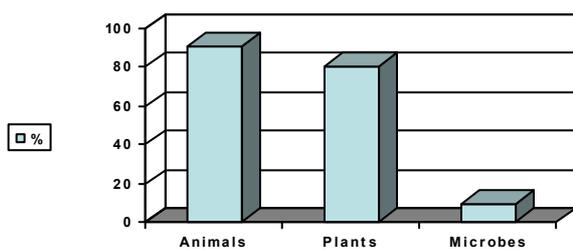


Figure1: Percentage of identified species in the world

Kenya is a mega diverse country with millions of important plant, animal and microbial species. The country covers an area of approximately 582,900 Km² and its biodiversity is closely related to the country's unique topography, notably: the Great Rift Valley, the Lake Basin, the Highlands, the Coastal and Mount Kenya regions. Only 1.7% of the Kenyan land is covered with forests and about 8% of the country is under protected area. About 34,000 species had been recorded by 1992 out of which about 24,000 are animals, 7,000 are plants and only 3,000 are microorganisms. Millions have not been recorded. However, hundreds of species are being lost annually through extinction, over exploitation, bio-piracy, natural attrition, climate change and human settlements.

Although the value of biodiversity cannot be

estimated easily, different estimates have been developed to calculate the value of biodiversity. Kate (2002) estimates that the global sales of products derived from genetic resources are between USD 500-800 billion a year. The potential of biodiversity can be realized through various means including regulated bio-prospecting programmes.

Bio-prospecting

Bio-prospecting is the search for biological material that will be examined for features of potential value such as medicine, food, chemicals and enzymes. It is a form of "prospecting", but unlike prospectors looking for gold, a bio-prospector is looking for something of value in biological material and associated knowledge. It is the search for previously unknown compounds in organisms, some of which have never been used in traditional medicine. Bio-prospecting projects are usually sanctioned by government authorities. It describes the entire process involved in removal or use of biological or genetic resources of any organism, or other organic substance for scientific research or commercial development with the consent of the owners, usually through mutually agreed Material Transfer Agreements (MTAs).

Bio-prospecting is expensive and may take as long as 15 years to realise its benefits. It may involve various steps including: identification, consulting holders of Traditional Knowledge, if any or the local communities, collection in-situ, screening for activity, patenting, clinical trials and marketing of the product as illustrated in Table 1 below.

Intellectual Property Rights (IPRs) issues cut across the entire bio-prospecting chain but those relating to patenting usually surface once active molecules are identified.

In Kenya, the International Centre of Insect Physiology and Ecology (ICIPE) has a Bio-prospecting Unit which conducts projects on development of medicinal products from plants found in Kakamega Forest, Western Kenya. This project has transformed the livelihoods of farmers and nearby communities over the past few years.

YEAR	STEPS	IPR Issues	EST. COST (USD)
11	In the Market Shelves	Package and Sell	1.0
10	Brand Names (Trademarks)	Secure Trade Name	0.2
9	Registration	Apply for Reg	0.3
8	Clinical Testing	Med Insurance	1.0
7	Patenting	Acquire Patent	0.5
6	Isolation for Active Compounds	File Patent	1.0
5	Further Harvesting		0.4
4	Screening	Trade Secret	0.3
3	Collection		0.2
2	Consultation	MTA	0.2
1	Searches		0.2
TOTAL			5 Billions

Table1: Steps involved in ideal Bio-prospecting Drug Programme - Source: Adapted from Hall, 2003

Farmers have since encouraged "outgrowers" to cultivate a plant, which is processed in a factory built with financial assistance from international donors. On average, a farmer makes KShs.35,000-40,000 [US\$ 437-500] when they cultivate the plant on a small plot (Dr. W. Lwande, 2009). The products from the project have been approved by the Pharmacy and Poisons Board of Kenya, trademarked at the Kenya Industrial Property Institute (KIPI) and standardized at the Kenya Bureau of Standards (KEBS). Currently, the products are available in most supermarkets across the country. However, very few such successful examples exist in Kenya. Bio-prospecting is subject to excesses and abuses if it is not well regulated.

However, when bio-prospecting is pursued without the knowledge or prior consent of the owners of the resources and without benefit sharing arrangements, it is called bio-piracy.

Bio-piracy

Bio-piracy is illegal bio-prospecting programme. It is access to genetic resources and associated Traditional Knowledge (TK) without the consent of the owners and without arrangements for fair and equitable benefit sharing mechanisms with the owners. It is theft of biological material and associated Traditional Knowledge. Bio-piracy takes place where there is no MTA or when MTA does not recognise the benefits to the resource owners. It is a practise where corporations from the developed world claim ownership of, free ride on, or otherwise take unfair advantage of the genetic resources, Traditional

Knowledge and technologies of developing countries. It describes a new form of "colonial pillaging" in which western corporations reap profits by taking out patents on indigenous plants, food, local knowledge, human tissues and drugs from developing countries and turning them into lucrative products.

In Kenya, biopiracy is rampant but only few cases have been reported. For instance, a German company called Bayer acquired a strain of bacteria from Ruiru Dam in Kenya, from which it has developed a drug that helps diabetes patients. The patented drug has generated at least \$ 380m in sales. Yet Kenya has received nothing in return. Bayer argues that the product had been developed from the Kenyan bacteria using biotechnology. It is said that the company is no longer using the original bacteria. What has been patented is the bio-tech product (P. Munyi, 2007). Also taken from Kenya were microbes discovered in the Rift Valley lakes in 1992 by California-based Genencor International and used in the manufacture of enzymes used to give jeans a faded look. The exploitation of Africa's natural resources in this manner breaches the 1992 Article 15 of the Convention on Biological Diversity (CBD) which encourages member states to put in place measures that will provide fair and equitable sharing of the benefits from the use of genetic resources.

Other documented cases of bio-piracy in Kenya include:

- Kikuyu grass patented as lawn grass in

Australia

- Maasai red sheep germplasm through collaborative research with an Australian firm
- Traditional Zebu cattle germplasm through collaborative research in Australia
- Soil microbes through collaborative research through a local university

For along time, scientists, researchers and other people have been collecting biological material including associated indigenous knowledge from different parts of the world, add value patent and commercialise it for their own benefits. Intellectual property rights were not subject to TK holders and local communities that conserve the material. In 1992, the world signed the Convention on Biological Diversity (CBD) to provide for conservation and sustainable use of biological resources including Access and Benefit Sharing (ABS) measures, which would address bio-piracy and promote legal bio-prospecting programmes.

ACCESS AND BENEFIT SHARING

Over time, man has collected and shared genetic resources among communities. Genetic resources are part of biological material that is capable of self-replication and of potential value. Genetic resources are utilized by different types of users (e.g. academics, scientists, private companies), in different sectors (e.g. pharmaceuticals, biotechnologies, seed and crop), for different purposes (e.g. basic research, commercialization). Article 15 of CBD requires parties to institute measures for fair and equitable benefit sharing arising from utilization of genetic resources. In 2002,

countries party to CBD developed Bonn Guidelines on access to genetic resources and the fair and equitable sharing of the benefits arising from their utilization to guide members while establishing their national laws on ABS. In Kenya, CBD was ratified through enactment of the Environmental Coordination & Management Act, 1999 that is administered by the National Environment & Management Authority (NEMA). Section 53 of the Act provides for ABS measures whose implementation is contained in the Legal Notice No. 160 of 2006. Although there is no formal ABS Case Study involving the NEMA ABS Regulations, the collaboration between the Kenya Wildlife Service (KWS), International Centre for Insect Physiology and Ecology (ICIPE); and Novozymes and Diversa (now Verenum) presents a notable case study on ABS as shown in the box below.

International Treaties and Agreements on Biological Resources

There are several international convention and treaties that have issues related to ABS and biological resources in general. Kenya is a party to the following biodiversity related conventions which have different objectives:

1. Convention on Biological Diversity (CBD), 1992 - to conserve biodiversity, sustainable use of its components and provide measures for access and benefits of profits from genetic resources and associated TK
2. WTO- TRIPs Agreement, 1994 - provides minimum standards for protection of IPRs and has a provision for protection of new plant varieties through an effective *sui-generis* system

Case Study on ABS.

Kenya Wildlife Service (KWS), International Centre for Insect Physiology and Ecology (ICIPE), and Novozymes and Diversa (now Verenum)

In Kenya, the industrial process biotechnology companies Novozymes (Denmark) and Diversa (USA) have signed separate agreements with the Kenya Wildlife Service, and ICIPE (in the case of Diversa), for collection of microorganisms in protected areas. Both provide support for laboratories and other infrastructure, training, and capacity-building. This case highlights arrangements based on microorganism sourcing and ABS in the industrial biotechnology sector. It explores ABS partnerships led by in-country conservation institutions and the benefits that result for conservation. KWS facilitates issuance of permits for research in protected areas. Companies do not need to pursue additional negotiations with government. In the material transfer agreement, Diversa retains IPRs over the products that are developed. (Robert Lettington, 2007). Source: ABD, TS. No. 38, 2008

3. The International Treaty on Plant Genetic Resources for Food and Agriculture (ITGRFA) of FAO, 2004 - Creates a framework for national strategies and international cooperation regarding the conservation, use and exchange of PGRFA
4. Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), 1973 - regulates the international trade in species of wild fauna and flora based on a system of permits and certificates
5. World Intellectual Property Organization (WIPO), 1974 - Administers 23 IP related treaties and conventions involving patents, copyright and trademarks
6. International Union of Protection of New Varieties of Plants (UPOV), 1991 - Provides for the Protection of New Varieties of Plants
7. RAMSAR: The Convention on Wetlands of International Importance especially as waterfowl habitat - provides a framework for international cooperation on wetlands
8. MIKE – The Lusaka Agreement on Co-operative Enforcement Operations Directed at Illegal Trade in Wild Fauna and Flora, 1997 - directed at illegal trade in wild fauna and flora
9. The Convention on the Conservation of Migratory Species, 1979 - Conservation of Migratory Species
10. International Regime on Access to Genetic Resources and Benefit Sharing - proposed regime for disclosure of origin/source/legal provenance of genetic resources and associated TK in applications for intellectual property rights
11. United Nations Convention on the Law of the Sea, 1982 - establishes property rights for coastal states within which they have sovereign rights
12. The Cartagena Protocol on Bio-safety, 2004 - promoting safety of living modified organisms, risk assessment and risk management in biotechnology
13. Convention for the Protection of World Cultural and Natural Heritage, 1972 - Protection of World Cultural and Natural Heritage
14. The Agreement on Sanitary and Phytosanitary (SPS) Measures - Provides sanitary measures for plants
15. The Bonn Guidelines on ABS, 2002 - Voluntary guidelines for the operationalization of Article 15 of the CBD on ABS and
16. Human Rights Conventions - Provides basic rights for humans

Amongst all the treaties, CBD has the highest member states followed by WIPO as indicated in figure 2 below.

Regional Agreements

Kenya has signed the following:

- ◆ The Convention for the Protection, Management and Development of the Marine and Coastal Environment of the Eastern African Region (1985),
- The African Model Law for the protection of the rights of the local communities, farmers and breeders and for the regulation of access to

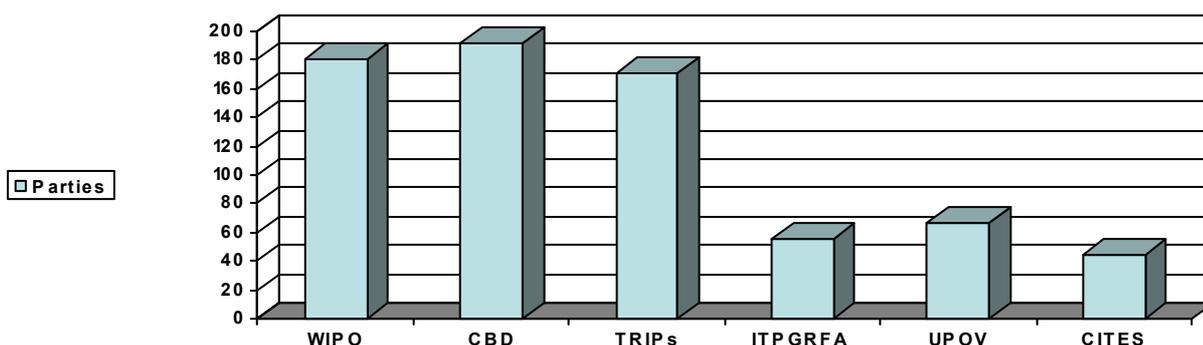


Figure 2: Parties to international conventions, 2009

biological resources.

IMPLEMENTATION OF INTERNATIONAL TREATIES

In Kenya, CBD is implemented by the National Environment & Coordination Act, 1999 administered by the National Environment Management Authority (NEMA). Kenya signed the ITPGRFA in 2006. The government has formed a national steering committee comprising of various lead agencies such as Kenya Plant Health and Inspectorate Service (KEPHIS), KARI-Gene Bank, National Museum of Kenya (NMK), NEMA, National Council of Science and Technology (NCST), Kenya Industrial Property Institute (KIPI) to come up with measures on how Kenya should ratify the Treaty.

Kenya has been actively involved in TRIPs Council negotiations together with other African countries in pushing for amendments to Article 27.3 (b) or 29 of the TRIPs Agreement to provide for disclosure of origin of genetic resources and TK in patent applications. So far, no consensus has been reached, as yet, on this issue. Kenya has ratified the TRIPs Agreement through enactment of the Industrial Property Act, 2001 administered by KIPI and which provides for patents on microorganisms, non-biological and microbiological processes for the production of plants or animals, including biotechnological products and processes; the Copyright Act, 2001 administered by the Kenya Copyright Board and the Seed and Plant Varieties Act Cap 326 implemented by KEPHIS as a *sui generis* system. Recently, the Government of Kenya legislated the Counterfeit and Ant-Dumping Act, 2008 which will be implemented once regulations governing the Act are ready.

The World Intellectual Property Organization (WIPO) administers 23 international treaties dealing with different aspects of intellectual property protection in 180 countries as Member States. Kenya is party to several WIPO Treaties through KIPI, the Kenya Copyright Board, KEPHIS and Excise & Customs Department of the Kenya Revenue Authority (KRA).

Kenya has neither incorporated protection of Genetic Resources, Traditional Knowledge and Folklore into intellectual property regimes nor has it introduced a *sui generis* system for protection of traditional knowledge. Instead, the Government has formed a Task Force under the Office of Attorney General (AG) comprising of relevant lead agencies such as; KIPI, NMK, NEMA, NCST, KEMRI and KEPHIS to look into possibilities of providing a suitable system that will protect traditional knowledge, genetic resources and folklore in the country.

The government has also formulated a draft Traditional Medicine and Medicinal Plants (TMMP) Policy under the Ministry of Health to address issues related to regulation of herbal medicine and associated knowledge in the country. The UPOV 91 Convention has breeder's exemption and farmers' privileges as opposed to farmers' rights reflected in UPOV 1978. This made UPOV 1991 unpopular among most developing countries. Kenya ratified UPOV 1978 Model as a *sui generis* system through the Seeds and Plant Varieties Act Cap 326 that is administered by KEPHIS.

In Kenya, CITES is implemented by the Wildlife and Management Act, Cap 376 of 1976 and amended 1989 that is administered by the Kenya Wildlife Service (KWS), Fisheries Department under the Fisheries Protection Act Cap 379, Kenya Forest Service under Forest Act, 2006 and NMK under the National Museums and Heritage Act, 2006 among others.

Domestication of access and benefit sharing related international conventions and treaties in Kenya.

The Government is making attempts to consolidate her resources with the understanding that they will contribute to national economic development as is reflected in the Access to Genetic Resources. It has put in place several legislations to conserve and utilize biological resources sustainably. The Wildlife Conservation and Management Act (Cap 376) of 1976 and amended in 1989 provides for the protection, conservation and management of wildlife in Kenya;

the Forest Act of 2006 provides for the establishment, development and sustainable management, including conservation and rational utilization of forest resources for the socio-economic development of the country; the Antiques and Monuments Act of 1978 provides for controlled access to and development or use of any place or site that has been declared a protected area for the protection of the antiques and monuments thereon; The Fisheries Protection Act (Cap 379), revised in 1977, provides for the protection of national fisheries resources and controlled exploitation of fishery resources, including pearls, and shells.

Others like the Seeds and Plant Varieties Act (Cap 326) of 1979, regulates access to plant genetic resources as well as the protection of rights of plant breeders; the Plant Protection Act (Cap 324) as revised in 1979 provides for the prevention of the introduction and spread of diseases destructive to plants; the Agricultural Act (Cap 318) revised in 1986 provides for promotion and maintenance of a stable agriculture, conservation of the soil and its fertility and to stimulate the development of agricultural land in accordance with the accepted practices of good land husbandry; the Agricultural Produce (Export) Act, 1979 (Cap 319); prohibits the export of any agricultural produce or produce of any animal for human consumption if such produce is unsound, that is, infected with any disease rendering it unfit for human consumption.

National Environment Management Authority

In Kenya, the National Environment Management Authority (NEMA) is the overall coordinating body on all issues related to environment, which includes implementation of CBD. It is a body corporate under the Ministry of Environment and Mineral Resources and deals with all Multilateral Environmental Agreements (MEAs) on behalf of the Government of Kenya.

In 1999, Kenya enacted the Environmental Management and Coordination Act (EMCA). Section 53 of EMCA provides for the conservation of

biological diversity and resources, access to genetic resources and benefit sharing. The implementing regulations duped the Environmental Management and Coordination (Conservation of Biological Diversity and Resources, Access to Genetic Resources and Benefit Sharing) Legal Notice No. 160 of 2006 came to effect on 1st January 2008, under the National Environmental Management Authority (NEMA).

The Notice requires individuals, firms, institutions or organizations who intends to carry out activities involving access to genetic resources for the purposes of research, bio-prospecting, conservation, industrial application and commercial use to apply to NEMA for an Access Permit before the commencement of the activity.

These Regulations also apply to individuals, firms or organizations that prior to the gazettment of the legal Notice No. 160 were carrying out activities involving genetic resources for the said purposes. It stipulates several issues of both access to genetic resources and benefit sharing and provides for a penalty to any person(s) operating without Access Permit as an offence and shall be liable to imprisonment for a term not exceeding eighteen months, or to a fine not exceeding three hundred and fifty thousand shillings, or both.

The Regulations provide for exemption clauses to access for non-commercial exploitation provided for under the existing intellectual property laws in the country.

Lead Agencies

There are several lead agencies in the country under different ministries that manage biological resources. These are as outline in the table 2 below

NON-COHERANCE IN IMPLEMENTATION OF CBD IN NATIONAL LAWS

In 1972, Kenya joined other countries of the world in the first UN Environmental

Programme (UNEP) conference held in Stockholm, Sweden. In 1974, the same was relocated to its current Headquarters in Nairobi, Kenya. The Government of Kenya established the National Environment Secretariat (NES) as the lead environment agency to coordinate and oversee environmental activities in the country. Since then, the country has witnessed remarkable progress in environmental conservation awareness activities and growth of relevant institutional and sectorial activities.

S.NO.	PARENT MINISTRY	LEGISLATION	INSTITUTION	ACCESS PERMIT
1	Ministry of Forest & Wildlife	Wildlife Conservation Management Act, 1976 Cap 376	Kenya Wildlife Service	Research and Collection Permit
2	Ministry of Forest & Wildlife	Forest Act, 2006	Kenya Forest Service	Logging Permit
3	Ministry of Environment & Mineral Resources	Environmental & Coordination Act, 1999	National Environment Management Authority	Access and Benefit Sharing Permit
4	Ministry of Higher Education, Science &	Science & Technology Act, 1977 Cap 250	National Council for Science &	Research Permit
5	Ministry of Agriculture	Seeds & Plant Varieties Act, Cap 326	Kenya Plant Health Inspectorate Service	Phytosanitary Licence/Permit
6	Ministry of Fisheries Development	Fisheries Protection Act, 1977 Cap 379	Fisheries Department	Fishing Permit
7	Ministry of Livestock Development	Crop Production and Livestock Act, 1979 Cap 321	Livestock Department	Livestock Movement Permit
8	Ministry of Livestock Development	Crop Production and Livestock Act, 1979 Cap	Veterinary Department	Meat Sample Inspection/Export
9	Ministry of National Heritage	National Museums & Heritage Act, 2006	National Museums of Kenya	Antiques and Monuments Export Permit
10	Ministry of Industrialization	Industrial Property Act, 2001	Kenya Industrial Property Institute	Patented Microbe Release Permit

Table 2: National Laws Related to CBD in Kenya (Source: F. Otswong'o, 2009)

In 1992, Agenda 21 was adopted and the Convention on Biological Diversity (CBD) was signed by several countries including Kenya. In 1999, Kenya ratified CBD by enacting the Environmental and Management Coordination Act (EMCA) 1999 whose main objective is to coordinate all environmental activities in the country. However, EMCA did not repeal other biodiversity management laws that are implemented by various government departments and parastatals in Kenya. In 2004, NEMA coordinated development of the National Biodiversity Strategy and Action Plan (NBSP) which spells out what each lead agency should do within a specified timeframe. The Action is being up dated.

In addition, there are various Ministries that deal with biological resource related legislations that sometimes conflict one another. Some Ministers and senior government officials do not support each other on issues that are closely related. The conservation of Mau Forest is the best example where more than five Ministers who have a role to play in conservation and sustainable use of this vital water catchments area have visited and issued different statements about the forest. Ministers' in-charge of Water, Forest & Wildlife, Environment and Mineral Resources, Agriculture, Internal Security and Provincial Administration have visited the area. What has been witnessed is lack of coordination in management and sustainable use of Kenya's biodiversity. This has lead to continued loss, misappropriation, bio-piracy and abuse of genetic resources and associated indigenous

knowledge held by local communities.

Challenges in Implementation and Enforcement Issues under Access to Benefit Sharing in Kenya

Domesticating access and benefit-sharing rules as stipulated under CBD is a complex exercise requiring collaboration of experts in science, law and business. Many countries lack the capacity to bring these experts together and so face challenges in implementing the ABS provisions. Furthermore, since only small quantities is enough for analyzing, smuggling is easy. As such monitoring of bio-trade is more difficult. Countries providing access to genetic resources frequently face difficulties in monitoring how the resources are used once they leave the country's jurisdiction and in enforcing compliance with ABS rules and negotiated terms.

It is often difficult to identify a particular person or group of persons as inventors of a plant-based traditional cure or useful crop variety. This discrimination in the coverage of IPRs frustrates benefit sharing, since the contributions of informal innovations carried out collectively over time by the people of a particular community are not recognized and rewarded by the IPR system in the same way that an industrial plant-breeder or pharmaceutical firm is rewarded. There is widespread frustration in seeking PIC, negotiating on mutually agreed terms and sharing of benefits associated with the use of genetic resources.

Access and Benefit Sharing Permit in Kenya

Issues of access and benefits sharing of proceeds arising from utilization of generic resources as required under Article 15 of CBD are complex and require coordinated efforts. In Kenya we have Access and Benefit Sharing Regulations established under section 53 of EMCA, 1999 and the Legal Notice No. 160 of 2006 that is enforced by NEMA. However, the Legal Notice seems to have been developed in a hurry without full involvement of relevant stakeholders and as a result, some lead agencies and competent authorities have not been able to implement it.

Some lead agencies view the Notice as conflicting with their mandates and policies. For instance, the Legal Notice requires that anybody intending to access genetic resources in Kenya must acquire access permit from NEMA, subject to Prior Informed Consent (PIC) and evidence of benefit sharing with the local communities or responsible research institution or organization in form of MTA or Technology Transfer Licenses. However, access permit does not apply to exchange of genetic material by local communities within Kenya, access for research and experimental purposes and access procedures subject to the Intellectual Property Rights (IPRs) and Human genetic resources in Kenya.

The Government of Kenya set up NEMA through an Act of Parliament called the Environmental Management and Coordination Act, 1999 to coordinate all activities of environmental conservation, sustainable use of biodiversity and access and benefit sharing in liaison with lead Agencies. However, proper mechanisms were not put in place from the onset on how NEMA would coordinate the Lead Agencies that have their respective mandates and legislation still in force. For instance, NEMA issues access permit to users of genetic resources who have prior informed consent from the owners.

At the same time, other legislations such as the Wildlife Conservation and Management Act, Cap 376 of 1976 mandates the Kenya Wildlife Service (KWS) to issue access and research permits within their biodiversity protected areas. Fisheries Protection Act Cap 379 mandates the Department of Fisheries to issue permits for fishing in Kenya. The newly enacted Forests Act, 2006 empowers the Kenya Forest Service (KFS) to issue logging permits to commercial enterprises. NSCT issues research permits to students and researchers (including foreigners) to access genetic resources and transport the material to their home countries. The Council does not require Prior Informed Consent or benefit sharing arrangements prior to granting the permit as indicated under CBD.

ABS LEGAL NOTICE NO. 160 OF 2006

Intellectual Property Rights and Prior Informed Consent

Issues relating to Intellectual Property Rights (IPRs) such as patents, trademarks, copyright, plant breeders' rights were not addressed in the Legal Notice. IP issues relating to genetic resources are included under exemption clauses and left to concerned IP Offices to handle. This is because bio-piracy can sometimes be caused by poor patent examination process. The Notice require bio-prospectors to apply for access permit at NEMA before collection of the biological material from Kenya. NEMA requires applicants to deposit a sample of the accessed biological material but does not give guidance on where and how the sample/specimens would be deposited. The Notice does not specify the Competent Authorities or the kind of local communities that can grant Prior Informed Consent (PIC) to applicants. It does not specify clauses to be included in an agreement between provider and recipient. Before a permit is issued, NEMA must advertise the application in the dailies for the public to consent or oppose which not only adds cost to the permit but also delays Research and Development (R&D). So far, no applications for permits have been received by NEMA. Most institutions make enquiry but do not apply. Does NEMA have the capacity to monitor or stop bio-prospecting projects that have not applied for access permits.

Further, the Legal Notice has reference to the Seeds and Plant Varieties Act, Cap 326 that mandates KEPHIS to inspect and issue phytosanitary import and export permits for plant related material and goods. Similarly, the Notice does not refer to the Industrial Property Act, 2001 that mandates KIPi to require patent applicants for inventions involving living matter are required to deposit a sample of culture with either the Kenya Medical Research Institute (KEMRI) or the Kenya Agricultural Research Institute (KARI). Under section 29 of the Act, KIPi is mandated to issue a permit for access to

the samples for examination or release.

Material Transfer Agreement

The Legal Notice emphasizes on the use of MTA between providers and users of genetic material but there is no template or Model National Material Transfer Agreement that could be used by either the resource providers or Competent Authorities in Kenya leaving loopholes for manipulation by foreign corporations. Efforts to initiate a National model MTA by NSCT in 2004 were thwarted when some lead agencies found it unnecessary. Today, each lead agency has its own MTA and determines the clauses to be included in the agreement. So far, none of the MTAs signed has clauses on the fair and equitable benefit sharing in accordance with the Bonn Guideline stipulating how the profits accrued from the accessed and commercialized products or processes of genetic resource is shared or directed to local communities.

Local Communities

The Legal Notice No. 160 exempts non-commercial access from getting a permit subject to the existing IP Laws in the country. It also exempts local Kenyan communities from seeking a permit. The existing IP Laws in Kenya do not recognize the efforts or input of Traditional Knowledge holders and local communities to inventions, new plant varieties or copyrighted material. Today, IPRs protection is voluntary and therefore bio-prospecting projects are not necessarily subject to IP Laws in the country. The proposed Bonn Guidelines, International Regime on ABS under CBD as well as the WTO-TRIPs disclosure of source of origin of genetic material and associated TK have not been agreed upon. The contentious elements include the nature and scope of PIC, disclosure of source of origin and ABS measures in patent applications. Some countries argue that although these requirements may be appropriate in curbing bio-piracy and ensuing ABS they may be used to stifle the innovative R&D activities and ABS during biodiversity prospecting programmes.

The main reason why Articles 15, 16 and 19 were

included in CBD was because of the developing countries felt that the developed country corporations were misappropriating and pirating on the indigenous knowledge of local communities from developing countries through IPRs, especially patent and plant breeder's rights systems.

Comments on Legal Notice Exemption Clauses

There are major loopholes in the exemption clause of the Legal Notice No. 160 of 2006. The Regulations do not apply to the exchanges of genetic resources, their derivative products or the intangible components associated with them, carried out by members of any local Kenyan community amongst themselves and for their own utilization.

1. Local researchers or scientists belong to Kenyan communities. These groups are major contributors to bio-piracy in Kenya. They visit and access genetic resources and knowledge from local communities with meager pay in cash. In some cases, they promise the community to return with some gift or donation but never do so. Furthermore, some researchers, scientists and students work on foreign-funded projects with contractual agreements tailored to suit the donor country IP Laws. In some cases, scientists are at the mercy of the funding agency, research institution or employer and do not bother to enter into benefit-sharing arrangements with local communities.
2. Access to genetic resources derived from plant breeders in accordance with the Seeds and Plant Varieties Act, Cap 326. The Kenyan PVP Act does not adequately cover the rights of farmers and their landraces. It does not incorporate ABS measures as required by CBD. Exempting access related to PVP opens doors for theft of Kenya's vital plant genetic resources.
3. Human genetic resources – A lot of genetic engineering work under biotechnology involves human genetic material and a lot of research on human genome is underway. In late 1990s, human genetic material were misappropriated from Majengo, Nairobi commercial sex workers to Oxford University in United Kingdom for

alleged research on their resistant to HIV/AIDS.

4. Approved research activities within recognized Kenyan academic and research institutions, which are governed by relevant intellectual property laws.
5. No permit for non-commercial purposes: If the Legal Notice exempts international companies from seeking access permit because utilization of the genetic resources is purely for non-commercial purposes (such as research and experimental) as provided for under the patent law, local communities will continue to loss out on their biological material and any traditional knowledge associated thereon. Tourists and visiting scientists collect and carry along with them potential genetic material in form of curios of gifts. How can we monitor such transfer of material?

It is prudent that anybody desirous of collecting biological material *in-situ* must apply for access permit.

RECOMMENDATIONS AND WAY FORWARD

What do we need to do if we must realize the vision 2030? Can we utilize our enormous biological resources to contribute to achieving the vision? What about the intellectual property rights of the local communities?

For Kenya's biodiversity to have any meaningful impact on the socio-economic development, local communities and rural dwellers need to receive first attention. To effect this, it is important that the country employs strategies stipulated in the National Biodiversity Strategy and Action Plan (NBSP) coordinated by NEMA in 2004. Although the Action Plan is being amended, it attempts to point out the role of each lead agency in biodiversity conservation and sustainable utilization.

It is important to actualize the requirements of ABS by implementing the requirement to disclose source or origin of genetic resources in the patent applications as proposed by the developing countries


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at WTO-TRIPs Agreement, CBD and WIPO-IGC. Kenya needs to develop compensated or regulated Bio-prospecting Policy to curb bio-piracy and actualize the provisions of ABS. There is need to review/amend the ABS Legal Notice No. 160 to seal the gaps that exist in it and to provide a more acceptable ABS regulation in the Country. There is need to come up with a model National MTA and Technology Transfer Licenses and other Agreements especially for local communities. There is need to establish a National Biological Resource Centre for access and deposit of biological material including microorganisms for posterity and future R&D.

There is need to implement the proposed Traditional Medicine and Medicinal Plants Policy under the Ministry of Health. There is need to finalize the Bill on Protection of Genetic Resources, Traditional Knowledge and expression Folklore being developed by a Task Force under the Attorney General's Office. There is need to develop regulations for Herbal Medicine and Traditional Health Practitioners (THPs) in Kenya. There is need to incorporate ABS measures in the said TK Bill that are all inclusive aimed at benefiting the local communities that conserve genetic resources and preserve TK. There is need to carry out a national study on the existing legal and institutional framework dealing with biodiversity prospecting in Kenya and recommend way forward.

It is necessary to utilize lead agencies mandated to conserve and use biodiversity during the inventory of genetic resources and TK stipulated in the Legal Notice No. 160 of 2006. There is need for a meeting to sensitize stakeholders on the effects of bio-piracy to the economy. Capacity building on the role of bio-prospecting in conservation and sustainable use of biodiversity should be done from the community level. NEMA should sensitize District Environment Officers and District Environment Committee members to disseminate information to locals on the protection of genetic resources and sharing of benefits that accrue from the same.

CONCLUSION

Harmonization of legislations and policies relating to management of biological resources is complex. Despite Kenya's ratification and involvement in various international conventions, treaties, agreements, policies and initiatives there is no coordination and coherence in the implementation of CBD related legislations in Kenya. To arrest the situation, it is vital to research on the existing legislations and institutional framework in the country and develop a National Bio-prospecting Policy that can give rise to a National Biodiversity Institute (NBI). It is important that these legislations and national policies are well coordinated with a view to enhancing development, reduction of poverty and contribution towards achieving vision 2030.

Finally, NEMA and other lead agencies should embark on comprehensive sensitization exercises of all stakeholders including local communities and policy makers on the role of bio-prospecting in biodiversity conservation, sustainable use of its components.

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