

# **Digitization, Intellectual Property Rights and Access to Traditional Medicine Knowledge in Developing Countries – the Nigerian Experience**

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by

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## **Executive Summary**

One of the basic features of traditional knowledge is that it is unwritten and exists in the minds of the local people. It is transmitted orally from one generation to another. Traditional knowledge plays a significant role in the lifestyle of the members of the local community and hence an essential resource for any human development process. They form the basis for decisions pertaining to food security, human and animal health, education, natural resource management and other vital activities. Local communities in developing countries in Africa are applying traditional medicine knowledge to respond to and manage the HIV and AIDS pandemic as well as in the treatment of other opportunistic infections. Traditional knowledge forms an integral part of the culture and history of local communities and hence their common asset in their effort to gain control of their own lives.

One of the best modern approaches to preservation of traditional knowledge is documentation in some permanent form and public accessibility using information and communication technologies. In addition to preservation, documentation and online accessibility of traditional medicine knowledge provides an effective tool for research and innovation. Some of the problems to documentation identified in the course of this research include the absence of collaborative effort by various government agencies engaged in documentation of traditional knowledge. Also the ease with which digitized information could be copied and transmitted raises issues as to the ability of the communities to continuously ensure ownership and integrity of their knowledge and that its sacred features are not compromised.

With regards to the applicability of conventional intellectual property rights (IPR) to traditional medicine knowledge, it was observed that the concept of copyright and individual rights to privately own and control information is at odds with traditional notion that knowledge is collectively own and shared. Hence the difficulty in the application of western concept of IPR to traditional medicine knowledge calls for a

sustainable access framework that meets the unique characteristics of traditional medicine knowledge.

A sustainable framework to this effect will be one which preserves the communal rights characteristic of traditional knowledge, enhance access to traditional knowledge for scientific discovery and innovation while at the same time granting traditional communities equitable access to any commercial benefit arising from the use of such knowledge. In appreciation of this fact, stakeholders in developing countries like Nigeria are currently embarking on effort to put in place *sui generis* legislation which ensures equitable access to traditional medicine knowledge. The details of this *sui generis* protection are discussed in the detail in this research paper.

## Introduction

The World Health Organization (WHO) defines traditional medicine to include a diversity of health practices, approaches, knowledge, and beliefs incorporating plant, animal, and/or mineral-based medicines; spiritual therapies; manual techniques; and exercises, applied singly or in combination to maintain well-being, as well as to treat, diagnose, or prevent illness.<sup>1</sup> Knowledge of traditional medicine is an integral part of the indigenous knowledge of local communities which according to Sithole is a complete body of knowledge, know-how and practices maintained and developed by the people, generally in rural areas, who have extended histories of interaction with the natural environment. This interaction sets understandings, interpretations and meanings that are part of a cultural complex.<sup>2</sup>

Traditional medicine knowledge is that aspect of indigenous knowledge of people in local communities which relates to the use of plants and other natural resources in the treatment of health related conditions. From time immemorial, plants and its allied products has been used in the treatment of various ailments all over the world especially in local communities in developing countries. Traditional medicine knowledge begins with the study of local plants species to identify edible, medicinal and poisonous ones. Plant forms the main ingredients of medicine in traditional system of healing and has been the source of inspiration for several major pharmaceutical drugs.<sup>3</sup>

Traditional medicine knowledge goes beyond knowledge of what plant specie(s) is used for treatment of a particular ailment. According to Nijar, to transform a plant into a medicine, one has to know not just the current specie but also its location, and since some

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<sup>1</sup> WHO. Legal Status of Traditional Medicine and Complementary/Alternative Medicine: A World Wide Review. Geneva 2001.

<sup>2</sup> Sithole, Jabulani "The Challenge Faced By African Libraries and Information Centres in Documenting and Preserving Indigenous Knowledge", (2007) 33:2 *IFLA Journal*, 17-23 [Sithole, "**Preserving Indigenous Knowledge**"].

<sup>3</sup> MacDonald Idu "The plant called medicine" *The Guardian* March 16, 2009 <[http://www.ngrguardiannews.com/focus\\_record/article03//indexn3\\_html?pdate=160309&ptitle=The%20plant%20called%20medicine&cpdate=160309](http://www.ngrguardiannews.com/focus_record/article03//indexn3_html?pdate=160309&ptitle=The%20plant%20called%20medicine&cpdate=160309)>.

plants are lethal in certain time of the year, one also has to know the proper time for collection, the part to be used (some part of a plant could have beneficial medicinal use while another part of same plant could constitute a deadly cocktail), how to prepare it as well as the posology.<sup>4</sup>

This research paper explores the various attempts toward documentation of traditional medicine knowledge in Nigeria as well as legislative effort with regards to the development of a framework to protect and enhance access to biological resources and associated knowledge in the country.

### **Methodology**

The method adopted in this research is broken down into three distinct levels:

- 1) An overview of various efforts by governmental and non-governmental organizations in Nigeria towards documentation and digitization of traditional medicine knowledge in the country and problems they have encountered in the process;
- 2) An analysis of the inadequacy of existing IPR frameworks in protecting and enhancing access to traditional medicine knowledge in developing countries;
- 3) Exploration of the existing attempt in Nigeria to develop a legal framework that addresses the inadequacies of western IPR in relation to traditional medicine knowledge.

### **Benefits of traditional medicine knowledge**

One of the basic features of traditional knowledge is that it is unwritten and exists in the minds of the local people. It is transmitted orally from one generation to another. TK plays a significant role in the lifestyle of the members of the local community and hence an essential resource for any human development process. They form the basis for decisions pertaining to food security, human and animal health, education, natural resource management and other vital activities. Local communities in developing

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<sup>4</sup> Gurdial Nijar, *TRIPS and Biodiversity: The Threat and Responses —A Third World View* (Malaysia: Third World Network, 1996) at 16.

countries in Africa are applying traditional medicine knowledge to respond to and manage the HIV and AIDS pandemic as well as in the treatment of other opportunistic infections.<sup>5</sup> TK forms an integral part of the culture and history of local communities and hence their common asset in their effort to gain control of their own lives.

Statistics shows that the number of people in developing countries who rely on traditional medicine for their health treatment has always been on the increase. The 1999 National Demographic and Health Survey Report in Nigeria indicates that 37% of births take place in hospitals as opposed to 63% of births being handled by traditional medicine practitioners. Current statistics indicate that over 85% of sub-Saharan Africa (Nigeria inclusive) depends on services and products of traditional medicine knowledge, science and technologies for their health care delivery as well as for social, economic and community issues.<sup>6</sup>

The increasing cost of accessing orthodox medicine services in developing countries has continued to take such medical care out of the reach of the majority of common people with very low income. This problem is further compounded by the inadequate and poorly equipped hospitals and clinics as well as dearth of skilled medical practitioners. In some communities in the developing world, traditional medicine is the only source of healthcare delivery known, accessible, acceptable and affordable. There are many factors responsible for this. First, traditional medicine is cheap and within the economic reach of the common people. The materials used in preparing the medicine are locally sourced and in some cases are obtained for free. Another factor responsible for the cheap cost is the general notions on the part of the traditional medicine practitioners that theirs was a humanitarian calling.<sup>7</sup>

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<sup>5</sup> Sithole, "Preserving Indigenous Knowledge" *supra* note 2. In Tanga region of Tanzania for example, the Tanga Aids Working Group (TAWG), an NGO, uses traditional medicine expertise and modern medical experts to fight against HIV/AIDS. See Msuya, Jangawe "Challenges and opportunities in the protection and preservation of Indigenous Knowledge in Africa" International Review of Information Ethics vol. 7 (2007) <[www.i-r-i-e.net/inhalt/007/38-msuya.pdf](http://www.i-r-i-e.net/inhalt/007/38-msuya.pdf)>

<sup>6</sup> See Farnsworth, Norman R., 'How Can the Well Be Dry When It Is Filled with Water?' (1984) 38 *Economics and Botany* 4 @ 6

<sup>7</sup> Alex Okumo "The Making of a New Paradox" *Pax Herbal Magazine* Issue 9 <<http://paxherbalmagazine.com/issue-9/the-making-of-a-new-paradox.html>>



Additionally, traditional medicine services are far more accessible to people in developing countries. In many parts of Africa, whereas the ratio of medical doctors to patient is about one to every 20,000, when it come to traditional medicine practice, there is a ratio of one healer to every 200 people - a far higher doctor-to-patient ratio than is found in North America. Traditional healers in rural communities in Africa are the most trusted and accessible health care providers in their respective communities. These facts thus make traditional medicine knowledge a powerful tool for national economic growth and development. The potential contribution of traditional medicine knowledge to locally managed, sustainable and cost-effective survival strategies should be promoted in the development process.<sup>8</sup>

In recognition of the vast potential of traditional medicine and its immense contribution to the continent's sustainable development in the wealth and well-being of her people, poverty alleviation, wealth and job creation, the African Union declared the period of 2001-2010 as the decade for African Traditional Medicine with a directive that research on African traditional medicine be made a priority. The main objective of the plan of Action of African traditional medicine is the recognition, acceptance, development and integration of Traditional Medicine by all Member States into the public health care system on the continent by 2010.

Other African nations such as Nigeria, Zambia, South Africa, Ghana, Egypt and Morocco have adopted this initiative and maintain specific institutions mandated to fast track the co-ordination of research and development, documentation and promotion of their traditional medicine, not only for improved healthcare delivery, but also for the immense job and wealth creation potentials.

Traditional medicine is appreciated worldwide for its total care approach, easy access, ready availability, cost effectiveness, apparent lack of side effects as well as its personal

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<sup>8</sup> Nicole Gorjestani "Indigenous Knowledge for Development: Opportunities and Challenges", online <[http://www.worldbank.org/afr/ik/ikpaper\\_0102.pdf](http://www.worldbank.org/afr/ik/ikpaper_0102.pdf)>.

and holistic approach to treatment of health related matters. The significant contribution of traditional medicine especially in the context of developing countries further highlights the need to integrate the practice into the mainstream health care delivery system.

### **Documentation and digitization**

Traditional knowledge cuts across numerous developmental issues including food and agriculture, biodiversity, desertification and the environment, human rights, cultural diversity, trade and economic development.<sup>9</sup> One of the basic features of traditional medicine knowledge lies on the fact that it is transmitted orally and/or by observation from generation to generation in a given community. Just like indigenous knowledge, traditional medicine knowledge is predominantly tacit, embedded in the practices and experiences of its holder(s). While the medium of transmission is usually through personal communication and demonstration from the tutor to the pupil or apprentice, from parents to children, Sithole observed that the traditional medium adopted for preservation includes taboos, symbols, myths/legends, rituals as well as poetry and folklore. Some societies also appoint traditional gatekeepers of the knowledge such as *griots* in West Africa and *imbongi* among the Zulu and Ndebele people in Southern Africa.<sup>10</sup> Hence traditional knowledge develops incrementally, with each generation adding to the stock. It is based largely on either group or individual experience of the practitioner(s).

The afforested methods of preservation of traditional medicine knowledge in traditional societies are quite inadequate in a complex and dynamic world. In traditional societies, there was hardly any effort at comprehensive documentation of traditional medicinal knowledge. In rare cases where bare documentation exists, it was usually in the traditional dialect of the local communities. This feature of traditional medicine knowledge also constitutes a major threat to its preservation. Since it is usually

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<sup>9</sup> Okujagu T. F. "Protecting Traditional Knowledge and Biological Resources in Nigeria: The NNMDA Experience", (2009) A Paper presentation in a workshop organized by the Centre for Indigenous Knowledge and Development (CIKAD), University of Ibadan.

<sup>10</sup> Sithole, "Preserving Indigenous Knowledge" *supra* note 2

undocumented, the knowledge dies with the holder(s) if not transmitted or if the chain of transmission is broken.

In almost all traditional societies today, the knowledge of traditional medicinal practices is mostly concentrated in the older generation of traditional medicine practitioners. According to Ibrahim et al, (2007) these traditional medicine practitioners are usually farmers, hunters, fishermen; timber workers etc and they are predominantly male practitioners usually above 50years of age. Transfer of knowledge and skills of the practice are mainly through family inheritance, only very few practitioners developed their skill through apprenticeship. The TMPs predominantly lack formal education although recently some educated persons are developing interest in the profession.

The numbers of these TMPs are decreasing due to death and other unforeseen occurrences; however, there is little replacement in the practice by the younger generation who show little or no interest in the practice and who have become more mobile due to civilization. In addition, there is a rapid disappearance of genuine traditional herbalists and decline in authentic knowledge in traditional treatment (Lindsay and Hepper, 1978). There is a danger that great deal of traditional medicine knowledge will eventually disappear in the absence of any concerted effort to put them in some permanent form. Secrecy, superstition and lack of adequate records on the use of herbal medicines have also led to loss of many invaluable heritages in herbal medicine.

Improper documentation of traditional medicine knowledge and practices has not only created a vacuum in access to traditional medicine knowledge but has also made such knowledge vulnerable to attrition. The World Bank has also added a voice to the warning that traditional knowledge faces extinction unless it is properly documented and disseminated and that within one generation, the knowledge could be lost forever.<sup>11</sup>

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<sup>11</sup> ibid

### **Benefits from documentation and digitization**

One of the best modern approaches to preservation of traditional knowledge is documentation in some permanent form and public accessibility using information and communication technologies. This is a position that has been advocated by the proponent of the open access movement.<sup>12</sup> There are many benefits that derive from documentation and digitization of traditional medicine knowledge.

Furthermore, high population pressure which has led to high demand for medicinal plants and intensive land use for agricultural and livestock expansion pose great danger to the very existence of plant diversity. Many plants which were earlier easily found are becoming scarce and at risk of becoming extinct unless strong conservation measures are taken. To preserve the traditional knowledge of plant use or our biodiversity generally, and to be able to suggest ways for their conservation, it is important to have readily available information on medicinal plants that still exist, where to find them and their uses.

Documentation and digitization of traditional medicine knowledge is the surest means of preservation. One of the major problems with traditional medicine knowledge which has been highlighted above is the oral nature of the knowledge. Hence documentation ensures preservation of this delicate knowledge and ensures wider dissemination. It will also result in codification of best practices which can be transmitted across communities in developing countries.

Documentation and digitization of traditional medicine knowledge is an effective tool for defensive protection from biopiracy as well as expropriation without compensation by multi-national pharmaceutical companies. Documentation provides evidence that a particular medicinal knowledge has developed in a particular local community thus vesting the community with claim over such knowledge as well as right to share in any profit resulting from the commercialization of the knowledge. It will also check any

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12 Adkins, R., "Intellectual Property Rights, Open Source Methods and Traditional Knowledge in Developing Countries", Technetra, August 2006, <http://www.technetra.com/2006/08/24/intellectual-property-rights-open-source-methods-and-traditional-knowledge-in-developing-countries/>

attempt my multinational corporations to privatize such knowledge via IPR mechanisms such as patent.

Hence when considering the patentability of any claimed subject matter, availability of traditional medicine knowledge database enables patent examiners all over the world to effectively and efficiently evaluate the novelty of the claim. More so, recent experiences has shown that even where a patent is granted in error or ignorance relating to a procedure which is the subject matter of traditional medicine knowledge of a local community, previous documentation of the local knowledge would prove to be a viable tool for subsequent legal challenge of the purported patent grant. A case illustrative of this fact was the legal battle lunched in the United State by the Council of Science and Industrial Research (CSIR), India for re-examination of the patent which was granted by the United States Patent and Trademark Office (US PTO) for the wound healing properties of turmeric filed by two U.S. based Indians. In a landmark decision, the US PTO revoked the patent after ascertaining that the innovation has been part of traditional medicine knowledge in India for centuries.<sup>13</sup>

Since biopiracy and misappropriation of traditional medicine knowledge usually occurs outside the localities where such knowledge reside, documentation and online accessibility of traditional knowledge will serve as a sort of efficient *sui generi* measure to protects the knowledge while at same time making it readily accessible for other legally and ethically permissible purpose.<sup>14</sup>

Additionally, documentation and online accessibility of traditional medicine knowledge will provide an active tool for research and innovation. Gupta was of the view that this

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<sup>13</sup> Other examples include the revocation of patent granted to W.R. Grace Company and United States Department of Agriculture on Neem by European Patent Office on the same ground that the use of the Neem tree has been known in India. See Gupta, Vinod Kumar "Documentation of Traditional Medicine Knowledge: The Digital Library of India" (2005) <[www.searo.who.int/linkfiles/meetings\\_document16.pdf](http://www.searo.who.int/linkfiles/meetings_document16.pdf)>. [Gupta, "Documentation"]

<sup>14</sup> Countries such as India has effectively used traditional knowledge digital library as an effective mechanism against biopiracy and the patenting of its traditional knowledge in foreign jurisdictions. See India's Traditional Knowledge Digital Library (TKDL) <<http://www.tkdil.res.in/tkdil/langdefault/common/Home.asp?GL=Eng>>.

will act as ‘a bridge between modern science, modern medicine and traditional knowledge, and can be used for international advanced research based on information on Traditional Knowledge for developing novel drugs.’<sup>15</sup> Further to that, documentation of traditional medicine knowledge provides room for validation or authentication of the knowledge claim.

### **Obstacles to documentation**

These benefits notwithstanding, the ease with which information could be copied and transmitted raises issues as to the ability of the communities to continuously ensure ownership and integrity of their knowledge and that its sacred features are not compromised. The other dimension is the individualistic nature of some traditional medicine knowledge. Although, traditional medicinal knowledge is generally conceived as being communal in nature, undoubtedly, there are aspects of traditional medicine knowledge which usually resides in an individual as opposed to a group or the community. According to Mgboji, it is incorrect to assert that the knowledge and skills possessed by native healers are in public domain. This belief according to him is flawed because native healers, as a matter of fact rarely reveal the secrets of medicinal or herbal remedies which they individually possess.<sup>16</sup>

This individualistic aspect of traditional medicine knowledge according to Sithole reinforces the concept of “knowledge as power”. This is evident in the fact that knowledge is a source of status and income (especially where such knowledge is uncommon). In most cases the possessor(s) will guard it jealously and may be unwilling to share.<sup>17</sup> Additionally, local communities are usually apprehensive of documentation of their traditional knowledge outside their traditional oral medium for fear that it may be misused, stolen, used against them or that they will lose claim to the knowledge after documentation.<sup>18</sup> These fears have in many cases presented serious obstacles to

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<sup>15</sup> Gupta, “Documentation” *supra* note 13

<sup>16</sup> Mgboji, Ikechi “Beyond Patents: The Cultural Life of Native Healing and the Limitations of the Patent System as a Protective Mechanism for Indigenous Knowledge on the Medicinal Uses of Plants” (2006) 5:1 Canadian Journal of Law & Technology 1 - 12

<sup>17</sup> Sithole, “Preserving Indigenous Knowledge” *supra* note 2

<sup>18</sup> *ibid*

successful documentation of traditional medicine knowledge. Experience has shown that this problem becomes more complicated when the field research relating to the documentation is carried out by individuals who are alien to the local community.

Another problem that also merits attention in relation to documentation of traditional medicine knowledge has to do with verification of the knowledge. If a particular drug or plant specie is alleged to cure a particular ailment, there is need to verify this claim before documentation. Verification of traditional medicine knowledge during documentation is a big challenge since in most cases, the individuals or institutions involved in the documentation are not really traditional healers themselves and may have to depend on some other sources for verification of information they receive. Magara also observed that the oral nature of traditional medicine knowledge makes it difficult to ascertain the authenticity of oral sources that are often forgotten. The challenge in some cases may boil down to how to document some unrecorded traditional medicine knowledge without validation and claim that it works.<sup>19</sup> Verification is very important to the extent that it serves as a safety measure to counter the deadly effect that may result from application of a wrong or bogus treatment to an ailment. As we shall see later in our case study, the problem of verification could be addressed by subjecting the traditional knowledge to peer-review<sup>20</sup> as well as laboratory scrutiny.

Another problem that threatened documentation of traditional medicine knowledge is the absence of collaborative effort by various government agencies in developing countries. During the course of field research for this project in Nigeria, it was personally observed that various government departments and agencies as well as even NGOs are actively involved in traditional medicine knowledge documentation. But unfortunately, the efforts are not well coordinated and in most cases resulting in waste or duplication of efforts.

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<sup>19</sup> Magara, Elisam, "Community Based Indigenous Knowledge for Developing Countries: A Strategy for Uganda" in Proceeding of the 15<sup>th</sup> standing conference of Eastern, Central and South African Library and Information Professionals, 15 – 19 April 2002, Johannesburg, South Africa.

<sup>20</sup> Claim about the medicinal portent of a particular plant could be reviewed with other traditional medicinal practitioners for authenticity.

The benefits of traditional medicine knowledge therefore warrant efforts to deal with the obstacle to documentation and accessibility. Documentation in some permanent form will be beneficial not only for the local communities but for common good of all by creating a large door for innovation and development. Current trend in information communication technology provide mediums for the digitization of traditional medicine knowledge as well as access to same. Such digitization will serve as a focal reference for research and development of traditional medicine.

In Tanzania, effort towards protection and preservation of traditional knowledge has taken the form of documentation and creation of traditional knowledge database.<sup>21</sup> One of such effort is the Tanzania Development Gateway Database of the Economic and Social Research Foundation (ESRF). The ESRF has developed a database of indigenous knowledge which is a product of the Tanzania Development Gateway, an initiative that uses information technology and internet to promote socio-economic development within Tanzania. The Database was created to enhance the sharing and dissemination of traditional knowledge information, experiences and practices in Tanzania.

### **Documentation of Traditional Medicine Knowledge in Nigeria**

In recent time several efforts has been made in Nigeria with regards to documentation of traditional medicine knowledge relating to plant species. In the course of the preparation for this research paper, research trips were undertaken to Nigeria to access the efforts, experiences and challenges faced by different institutions including an NGO in the documentation of traditional medicine knowledge in Nigeria.

### **3. Nigerian Natural Medicine Development Agency (NNMDA)**

The Nigerian Natural Medicine Development Agency (NNMDA) is an agency of the Federal Ministry of Science and Technology. The Agency was established in 1997 with the strategic mandate to research, develop, collate, document and promote Nigeria Traditional Health Care System, to integrate same into the national health care delivery system and to contribute to the socio-economic development of the country. The Agency

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<sup>21</sup> Tanzania Indigenous Knowledge Database < <http://www.tanzaniagateway.org/ik/> >



in pursuance of these strategic mandates developed a unit Herbarium of Nigeria Medicinal Plant and a Digital Virtual Library for research and development of Nigeria Traditional Medical System. To this end, the Agency initiated a number of regional projects and programs across the country aimed at documentation and conservation of Medicinal, Aromatic and Pesticidal Plants (MAPPs) used in traditional medicine in Nigeria. One of the projects – *identification and documentation* of medicinal plants has so far during the first phase covered two Nigeria World Heritage Sites and six ecological zones of Nigeria. Some of these have been published as *Biodiversity of Sukur – World Heritage Site* and *Medicinal Plants of Nigeria* Volume 1. These include;

### ***1.1 Biodiversity of the Sukur-World Heritage Site in North-East Nigeria***

In partnership with the United Nations Educational Scientific and Cultural Organisation (UNESCO), the Agency documented an inventory of the Medicinal, Aromatic and Pesticidal Plants (MAPPs) of the Sukur-World Heritage Site in North-East Nigeria.<sup>22</sup> The Sukur project was a specialised documentation. The region has a very difficult terrain – stony and hilly. Apparently because of the difficulty of access, the people here rely solely on medicinal plants around them for every aspect of their health care need. This fact further illustrates the rich biological diversity of the region.

The biodiversity inventory and documentation project resulted in a 143 paged-publication which was published mid-October 2008 by NNMDA. The book titled "*Biodiversity of the Sukur World Heritage Site Adamawa State, North East Nigeria*" lists the species of medicinal plants in the region clearly outlining their scientific name, local names in Nigerian languages, their habitat description, phytochemical constituents and their medicinal uses.

A total of 122 medicinal plants species belonging to 58 families were identified and collected for the herbarium in the course of the project, 32 species were recorded for use

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<sup>22</sup> Sukur World Heritage Site is located in Madagali Local Government Area of Adamawa State, Nigeria on latitude 10° to 50° north and longitude 13° to 33° east of the equator. In 1999 UNESCO listed Surkur as the 44th World Heritage Site and the first to be so designated in Nigeria because of its peculiar cultural landscape. Also later in 1999, it was as a National Monument, and included in the list of World Heritage Site list at its 29th Session in Marrakech, Morocco.

in the treatment of malaria and other forms of fever; 14 species were recorded for use in the treatment of measles, rashes, scabies and boils. 16 species were recorded for use in the treatment of catarrh, asthma, pneumonia, cough and sore throat; 12 species were recorded for use in the treatment of sexually transmitted diseases. 8 were found to be useful in the treatment of dysentery. 10 species were found useful in hypertension. Five species were recorded for use in the treatment of diabetes. 3 species were used for the treatment of leprosy. Thirteen found useful in treatment of ulcer and gastrointestinal problems. Eight species were recorded for use in treatment of pile and constipation. Three species were recorded for use in the treatment of epilepsy and seven for the treatment of irregular menstrual cycle.<sup>23</sup> This publication is a good resource for research and development into traditional medicine, botany and biodiversity planning. It is also a key resources material for other traditional medicine practitioners.<sup>24</sup>

The second phase of the project which is being sponsored by UNESCO will train traditional medicine practitioners in the area of biodiversity conservation. This it hoped will help to ensure that medicinal plant species in the area a not in danger of extinction.

### ***1.2 Medicinal Plants of Nigeria – South West Nigeria Vol. 1***

The *Medicinal Plants of Nigeria – South West Nigeria Vol. 1* was compiled and published in 2005 as a culmination of successful identification and documentation of MAPPs in some selected communities of the South western states of Nigeria. The Agency collaborated with renowned Traditional Medicine Practitioners and researchers from University of Lagos.

In the course of the project, a total of 117 plant species belonging to 58 families were identified with the assistance of the Traditional Medicine Practitioners. In addition to the scientific and common English names, the local names of the plant in the three major

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<sup>23</sup> Adelaja, Abiose “Healing plants discovered in Nigeria's first heritage site” *National Daily* November 10, 2008 <<http://www.nationaldailyng.com/44health3.htm>>

<sup>24</sup> Okujagu T.F. “Support for Drug Discovery Research from Nigerian Government: The Federal Ministry of Science and Technology (FMST) Perspective”, (2009) A paper presented at the Natural Products Drug Discovery Symposium in Abuja. <[https://conferences.niaid.nih.gov/ResearchContinuumConference/Presentations/Presentations-%20May%2012%20\(Day%20One\)/Okujagu.pdf](https://conferences.niaid.nih.gov/ResearchContinuumConference/Presentations/Presentations-%20May%2012%20(Day%20One)/Okujagu.pdf)>

Nigerian languages are given where available for each identified plant. The plant species where arranged according to their families, coloured picture of the plant species is followed by a brief description of the plants, the phytochemical constituents and uses for further research studies. Over 72 plant species were recorded for use in the treatment of malaria and other forms of fever, about 52 are used in various formulations to treat different kinds of skin diseases while 50 were recorded for use in childbirth and other reproductive problems. Additionally, 30 species were identified as worm expellers and 25 for rheumatism.

### **1.3     *Medicinal Plants of Nigeria – North central Nigeria Vol. 1***

*Medicinal Plants of Nigeria – North central Nigeria Vol. 1* was published in 2006. The documentation project covered selected communities of North central zone and focussed on MAPPs used in traditional medicine. As in other cases, the projects collaborated with the traditional medicine practitioners from the North central zone of Nigeria.

The project documented 102 plants species belonging to 48 families, with 12 plants species for the treatment of malaria and other fevers. 24 species are used in the treatment of various skin diseases while over 29 are for various reproductive health issues, and so on.

### **1.4     *Medicinal Plants of Nigeria – South East Nigeria Vol. 1***

Another project undertaken by the Agency was the ethnobotanical survey and documentation of MAPPs in the South-eastern Nigeria. The project was carried out in collaboration with other stakeholders – the traditional medicine practitioners and academia from the region. As in other cases, the survey resulted in the publication of a book titled *Medicinal Plants of Nigeria – South East Nigeria vol. 1*. The survey identified and documented 188 medicinal plants species belonging to 48 families. 33 of the plant species are for the treatment of malaria and other forms of fever, 30 plant species were for the treatment of various forms of skin diseases, 19 plant species were for the treatment of diabetes etc.

### **1.5 Other projects**

There was also other documentation project carried out in the North East and North West Nigeria. Publications resulting from the documentation were on press as at the time the field research for this project was undertaken. Arrangements are in place for volume 2 of the publications above. This volume will be a 'net inventory' – a compilation of all the volumes and subsequent work. It suffices to add that the Agency had earlier in September, 2006 released a book titled "*Abstracts of Published Research Findings on Nigeria Medicinal Plants and Traditional Medicine Practice*". The book was a collection of 1,050 research efforts by Nigerian scientists on medicinal aromatic plants published in 1,020 international journals since 1972.

### **1.6 Aim of the Projects**

The various projects undertaken by the Agency has been borne out of the need to develop Nigeria's local heritage, boost healthcare and stimulate research and development in Nigeria Traditional Medicine as a safe and alternative medicare. This identification, inventory and documentation of Medicinal, Aromatic and Pesticidal plants project is aimed at enhancing the capacity of Traditional Medicine Practitioners (TMPs) and researchers in the identification, sustainable use and furthering health research into traditional medicine (TM). Other aims are to

- build a medicinal plant data base as a teaching resource
- Create awareness of the need to conserve biodiversity of medicinal value and share this information with researchers and other academic institutions for purposes of collaboration to enrich the data base
- Disseminate information and knowledge in order to promote environmental education on the importance of medicinal plants and biodiversity

### **1.7 Challenges**

The level of success recorded in this project is not without challenges. The challenges are in different forms like

- Mobilisation resources: Getting the needed resources to start the projects was difficult. Eventually, the Agency partnered with the United Nations Educational

Scientific and Cultural Organisation (UNESCO) and Raw Material Research and Development Council (RMRDC).

- Equipment: The numbers of equipment available for the project was insufficient, considering the project scope, community terrain and expected output. More so, the nature of the documentation required digitization of results. There were no sufficient digitisation equipment available for this purpose.
- Forming partnership with the local TMPs and other stakeholders: Initially, it was difficult to convince the local people of the need to support the project. But as the project progressed with convincing outputs few of them changed their mind set and gave more cooperation. Rather than view the project with disdain and scepticism, they came to realise output from the project rather confirms their work and practise thus uplifting their profession which has been traditionally relegated. The Agency also went a step further to constitute a technical committee comprising of TMPs, researchers, academics as well as a staff from the National Agency for Food and Drug Administration and Control (NAFDAC). The Committee meets regularly to address technical issues arising from drug development from traditional medicine.

### **1.8 Digitisation and Access**

Notwithstanding the challenges, the various projects undertaken by the Agency were very successful. The results from the various projects are now fully digitised. The major problem now is making them available online or through a digital library. Bandwidth cost in the region has been responsible for this. Even if the bandwidth problem is overcome there is also the problem of constant power outage which may also have to be resolved through alternative power generation.

## **2. Nigeria Institute for Pharmaceutical Research and Development**

The Institute was established with the primary objective of developing drugs, biological products and pharmaceutical raw materials from indigenous resources as well as the conservation of Nigeria's medicinal and aromatic plants. In the area of traditional

medicine practice, the Institute runs a project on the validation of claims by traditional medicine practitioners on effectiveness of some herbal medicines.

The first major activity of the Institute following its establishment was the organization of an International Workshop on “Strategies and Priorities for Indigenous Pharmaceutical Research and Development” in October 1989. In 1990, the Institute embarked on the documentation of medicinal and aromatic plants within the Federal Capital Territory (Abuja) of Nigeria. This was obviously the earliest attempt at documentation of traditional medicinal plants in Nigeria. The data accumulated during the ethnobotanical survey were compiled into a National compendium of medicinal and aromatic plants in Nigeria

The Medicinal Plant Research and Traditional Medicine (MPR & TM) Department in the Institute is the first point of call for traditional medicine practitioners who wish to have their traditional medicine recipe evaluated for efficacy and safety. This is usually the case where such TMP wish to have their traditional medicine licensed by the regulatory agency – the National Agency for Food and Drug Administration and Control (NAFDAC). In some other cases, the traditional medicine practitioners are referred to the institute by their umbrella body. The TPMs arrive at the institute with their recipe and request the institute to conduct further laboratory research on the efficacy of the recipe either with a view to simply obtaining a certificate confirming the efficacy of their recipe, or with a view to collaborating with the Institute for commercial exploitation of the drug in the event of a successful laboratory investigation.

The latter case was the process that led to the discovery of Nicosan a drug for sickle cell anemia based on traditional recipe that had been known to generations of a Nigerian family as an effective treatment for sickle cell anemia. After a successful laboratory test and evaluation at the Institute, the drug was licensed to a pharmaceutical company for

commercial exploitation under a benefit sharing arrangement with the traditional medicine practitioner.<sup>25</sup>

## **2.1 Documentation of Traditional Medicine Knowledge**

The MPR & TM department of the Institute also engages in ethnobotanical survey to identify traditional medicinal recipe of local communities. However, the process here entails more than just identification and documentation of traditional medicine knowledge. The department also engages in a process of verification of the traditional medicine knowledge. To this effect, the department undertakes laboratory tests to ensure that any traditional recipe collected from traditional healer has the capacity or portent of curing a claimed ailment.

The process starts with the Institute sending out staff very familiar with the local community where the survey is to be carried out. The staff will on the first visit meet individually with various TMPs in the community intimating them of the intended survey and how they stand to benefit from it. While some will object to participation, the prior informed consent form is administered on those who express willingness to participate in the survey and monetary compensation is subsequently provided. In visiting the traditional medicine practitioners, the cultural, traditional norms and language will be taken cognizance of and respected. There are usually two visits to each herbal practitioner.

The purpose of the first visit will include:

- i. Identification of the herbal doctor as the supplier of a particular herbal drug and signing of a collaboration research and possible development agreement. The purpose of the research will also be explained to the TMP.
- ii. Inquiry as to particular treatment(s) given by the TMP.

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<sup>25</sup> The arrangement with the pharmaceutical company failed subsequently. The Nigeria government revoked the license and assumed production of the drug. See Hassan, Adole and Scott, Christina "Nigeria revokes sickle cell drug license", <<http://www.scidev.net/en/news/nigeria-revokes-sickle-cell-drug-licence.html>>

- iii. Inquiry on the composition, preparation and dosage of the herbal drug; and the duration of the treatment.
- iv. Collection/purchase of sample of the herbal drug for comparison with earlier sample if any, from patients.
- v. Informing the herbal doctor of a possible follow up visit for full information and collection of plant samples from him/her
- vi. Preliminary administration of a questionnaire for collecting the information required.
- vii. Information imputed into database followed by analysis
- viii. Collected samples put in repository

The second visit to the herbal doctor will depend on the analysis of information received during the first visit from him and his willingness to volunteer further information and the purpose of the second visit include:

- i. Inquiry as to the composition of the herbal drug, the name(s) of the plant(s), the parts of the plants used, mode of collection of plant(s), time of collection and mode of storage of the plant(s).
- ii. Collection of appropriate herbarium sample(s) of the plants named by the herbal doctor, collected by or collected in his company by the Institute's team.
- iii. Recording the local and other known native names of named plants
- iv. Additional compensation given to the TMP for work done in supplying herbarium samples.
- v. Promise from the herbal doctor to cooperate in future if more of the herbal drug sample and or plant samples are required from him or through him.
- vi. Administration of a more detailed questionnaire to document all the information given by the herbal doctor.

After the collection of herbarium plant samples from the herbal doctor the following activities will be carried out:



- i. A voucher specimen of the plant will be prepared, numbered, treated for preservation and kept in NIPRD Herbarium.
- ii. The plant herbarium sample will be identified and the botanical name assigned if already known.
- iii. Confirmation of plant botanical name will be carried out if necessary using the Forestry Institute of Nigeria or the University of Ibadan Herbariums or any other Herbaria and paying appropriate herbarium service fees.

It suffices to state though that the main objective of the Institute is drug discovery and development. However, the process of drug discovery and development especially from local sources inevitably involved documentation. The Institute currently has two main projects which would result in further documentation of traditional medicine knowledge in Nigeria. The first is a nationwide ethnobotanical survey which is being funded by the Nigerian government. The second is a World Bank project on survey of medicinal plants used to manage diabetes mellitus in Nigeria. Though the main purpose of the latter project is the development of a phytomedicine for the management of diabetes mellitus in Nigeria, the project will also result in the establishment of a database of traditional medicinal plants used in the treatment and management of diabetes mellitus.

Although, the nature of the Institute's activities involves documentation of a vast array of traditional medicine knowledge in Nigeria, there has been no attempt toward either digitization or making this knowledge available online. The following factors were discovered to be responsible for this state of the problem – it was discovered that there is a capacity problem within the NIPRD as most of the staff lack the technical know-how on digitization. There is also complete lack of digitization facilities in the Institute. Funding for the NIPRD's projects do not often cover provisions for digitization. The result of these problems has been accumulation of vast arrays of traditional medicine knowledge which sits in the offices in NIPRD's in Abuja and is inaccessible to the outside world for other beneficial purposes. There is need to educate the Institute and its staff on the benefits of digitization of the wealth of traditional medicine knowledge in its custody. There is also the need for funding agencies working with the Institution to make

provision for funding to cover digitization of results from the Institute's projects. There is also need for NIPRD to collaborate with other Institutions especially with a view to improving the capacity of its staff in the area of digitization.

#### **4. Bioresources Development and Conservation Programme (BDCP)**

BDCP is a non-profit and non-governmental organization dedicated to sustainable utilization and conservation of biological resources with a view to poverty alleviation, health improvement, and environmental conservation. BDCP's main objective is to ensure the well-being of tropical eco-system and their human inhabitants. It adopts a bottom-up approach to ensure that rural dwellers derive maximum benefit from their environmental resources and labour. BDCP is currently working on strategies for the sustainable use and development of biological resources in Nigeria.

BDCP runs series of research and bio-prospecting programmes in Nigeria and in parts of West Central Africa. BDCP also engages in environmental consultancies and environmental management (studies and application of integrated waste management, integrated costal area management, ecosystem restoration, pollution control and environmental health, hotspot diagnostic analysis, cleaner production technologies, environmental sound technologies as well as environmental impact assessment.

One outstanding characteristic of BDCP in comparison with other institutions involved in local biodiversity research in Nigeria is its ability to collaborate with other institutions. Some of these institutions includes – CARPE (Central African Regional Program for Environment), ASCOPAP (African Scientific Co-operation on Phytomedicine and Aromatic Plants), Fund for Integrated Rural Development & Traditional Medicine, UNIDO, UNDP, AAMPS (Association of African Medical Plant Standards). In collaboration with various national and international agencies, BDCP is conducting an on-going inventory of the Obanshi-Okwangwo forest complex in Calabar, South-eastern Nigeria.

BDCP has also established a database of African medicinal plants. In collaboration with its partners in the continent, it has also established a comprehensive inventory of biological resources called the Computerized Information System of African Medicinal and Aromatic Plants (CISAMAP). The idea behind CISAMAP is to provide a common platform that interfaces with four existing databases thereby allowing users to access multi-layered information. The other four databases are:

- i. AFRICMED: A collaborative inventory of plants used in traditional medicine in West/Central Africa and epimiological survey of the uses of these plants.
- ii. ICBG Inventory: A database of plant materials, extractions, chemistry and biology.
- iii. BioMon Database: A database of plants found in the network of ICBG small biodiversity plots in Nigeria and Cameroun. It has drug sample collection locations on the map as well as digital overlays of geographical features of West and Central Africa. The database was established in collaboration with the International Centre for Ethnomedicine and Drug Discovery (InterCEDD) and the Smithsonian Institution.
- iv. Korup Forest Dynamic Project (KFDP): A tree demographic database comprising of plants found in the ICBG biodiversity plots near Nigerian-Cameroun border.

BDCP also collaborated with NNMDA in its documentation of traditional medicine knowledge in South-Eastern and North-Central zones of Nigeria. The voucher specimens from the survey were housed in the herbarium of the InterCEDD for future analysis.

### **Observation**

1. The benefit of traditional medicine knowledge is now being appreciated outside its traditional environment. This growing interest in traditional medicine knowledge has also propelled the growing effort in the documentation of traditional medicine and plant knowledge in developing countries like Nigeria.

2. The effort towards documentation will greatly assist in the development of traditional medicine sector as well as the growth of the pharmaceutical industry in Nigeria. So far, that effort has resulted in the development of a vital sickle cell drug and it can be safely predicted that the development of pharmaceutical drugs from traditional medicine knowledge will rise in the future.
3. There seems to be no coordinated effort by various agencies and stakeholders involved in the documentation of traditional medicine knowledge in Nigeria. This lack of coordination results in duplication of effort and waste of scarce resources.

### **IPR and access to traditional medicine knowledge**

Another benefit of traditional medicine knowledge lies in its importance to the pharmaceutical industry especially in the area of drug development. Western science is gradually reaching its apex in terms of proffering new treatment for diseases afflicting humanity. Drug Discovery in current scenario has become unproductive to the point where the economic future of the pharmaceutical industry is questionable. To push into the future, the R&D thrust in the pharmaceutical sector is now beginning to be focused on development of new drugs, innovative processes for known drugs and development of plant-based drugs through investigation of leads from the traditional systems of medicine.<sup>26</sup> Undeniably, traditional medicine has the capacity to provide novel inputs into the drug development process, as well as boost pharmaceutical drug discovery by very high margin. The immense benefit of traditional medicinal knowledge in the pharmaceutical drug development has given rise to bioprospecting as well as its illegal counterpart – biopiracy.

The rise in cases of biopiracy is making traditional knowledge holders in developing countries very nervous and uncomfortable. Their fear is not unrelated to historical trend

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<sup>26</sup> Patwardhan, Bhushan “Drug Discovery and Development: Traditional Medicine and Ethnopharmacology Perspectives” (2009) *Scitopics*  
<[http://www.scitopics.com/Drug\\_Discovery\\_and\\_Development\\_Traditional\\_Medicine\\_and\\_Ethnopharmacology\\_Perspectives.html](http://www.scitopics.com/Drug_Discovery_and_Development_Traditional_Medicine_and_Ethnopharmacology_Perspectives.html)>

of expropriation without compensation from pre-colonial times till date. Further to their worries is the growing notion by proponents of intellectual property rights (IPR) that IPR should be applied to traditional medicinal knowledge in order to preserve and promote their commercial exploitation. It suffices to state though that IPR such as patent does not primarily guarantee the commercial exploitation of knowledge rather, it is an instrument the primary purpose of which is to exclude others from the knowledge.

It has been observed that discussions on the challenges of the digital era tends to focus on the ownership rights of companies and individuals but far more daunting to the poor in developing societies are the challenges raised from waves of legislative changes to copyright and patenting law that are led by multinational companies seeking to define ownership of knowledge and to a large extent what knowledge is.<sup>27</sup> According to Consuelo Quiroz, “These IPRS regimes are calculated to reward those who are in a position to patent certain kinds of innovation, but do not recognize the originators of the innovations.”<sup>28</sup> Walter Reid, Stephen Brush, and Doreen Stabinsky have all argued that Western concept of intellectual property is ill-suited for traditional knowledge.<sup>29</sup> Intellectual property rights especially patents, which is the West’s primary mechanism for allocation of rights over knowledge and their products reify Western scientific tradition. Application of IPR to indigenous knowledge is not only economically detrimental to developing nations but also capable of eroding local knowledge.<sup>30</sup>

Atkins argued that attempt to apply Western concept of IPR to protect and preserve traditional knowledge will not be economically beneficial to developing countries. His argument is based on the fact that because of their continuing unequal status, developing

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<sup>27</sup> Randhawa, Sonia “Challenges of communal copyright: Traditional and indigenous knowledge” (April 2009) <<http://www.genderit.org/en/index.shtml?apc=a-e--1&x=96221>>

<sup>28</sup> Quiroz, C., “Biodiversity, indigenous knowledge, gender and intellectual property rights”, (1994) 2:3 *Indigenous Knowledge and Development Monitor*

<sup>29</sup> Oguamanam, Chidi, *International Law and Indigenous Knowledge: Intellectual Property, Plant Biodiversity, and Traditional Medicine*, (University of Toronto Press (2006) 28; Reid, Walter V., *Genetic Resources and Sustainable Agriculture: Creating Incentives for Local Innovation and Adaptation* Policy Series #2 (Nairobi: Africa Centre for Technology, 1992); Brush, Stephen and Stabinsky, Doreen, eds., *Valuing Local Knowledge: Indigenous People and Intellectual Property Rights* (Washington, D.C.: Island Press, 1996) pg. 6

<sup>30</sup> Oguamanam, *ibid* @ 6

countries bear the greater share of misappropriation of traditional knowledge. Their true loss is not the pennies which their indigenous population might earn selling herbs and local seeds but rather the true price is the induction into a system of trade where the deck is already stacked in favor of existing and highly developed proprietary interest. Long range economic value cannot be achieved by artificially monetizing shared traditions through patenting, copyrighting or trademarking components like medicine or genetic materials or other processes and structures of nature incorporated into the common heritage within developing countries.<sup>31</sup>

The ability of IPR to erode traditional knowledge becomes evident on closer examination of the unique characteristics of traditional knowledge. In most cases, traditional knowledge resides in a community as opposed to an individual. Western notions of copyright and individual rights to privately own and control information is at odds with traditional notion that knowledge is collectively own and shared.<sup>32</sup> Hence the application of IPR in attempt to preserve and protect traditional knowledge would result in a dilemma. First, Western concept of IPR does not admit of communal ownership. Hence, if we seek to preserve and protect traditional knowledge by privatizing it, such attempt will divest it of its basic characteristics of communal ownership. This would be destructive rather than preservative. Application of modern IPR regime to traditional medicine knowledge will also have the effect of depriving the local people access to such knowledge as ownership of the knowledge will be vested in the patent holder. More so, in a world where the access to knowledge movement seems to be gathering momentum, attempt at privatization of traditional knowledge would meet serious opposition from this group also. If on the other hand, traditional knowledge is left without any basic form of protection, it will result in difficulty of access as the holders will be unwilling to disclose for fear of biopiracy along with the resultant effect of expropriation without compensation. This would result in restrictive access to knowledge.

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<sup>31</sup> Adkins, Robert “Intellectual Property Rights, Open Source Methods and Traditional Knowledge in Developing Countries” (2006) <<http://www.technetra.com/2006/08/24/intellectual-property-rights-open-source-methods-and-traditional-knowledge-in-developing-countries/>>

<sup>32</sup> Randhawa *supra* note 27

The need for a sustainable framework that meets the diverse interests associated with traditional medicine knowledge especially the local people is now becoming all the more obvious. This is further substantiated by the fact that the current trend in the globalization of knowledge especially in relation to once relatively obscure TK requires the establishment of a framework that will address the fear of local communities in making their knowledge accessible for beneficial use. A sustainable framework to this effect will be one that will preserve the communal rights characteristic of traditional knowledge, enhance access to traditional knowledge for scientific discovery and innovation while at the same time granting traditional communities equitable access to any commercial benefit arising from the use of such knowledge.

Currently, there is a proposed legislation in Nigeria which aims at the development of this sort of framework. This came in the form of a Bill proposed by the Nigeria Natural Medicine Development Agency to the Nigeria National Assembly.<sup>33</sup> The proposed Bill (hereafter referred to as “The Bill”) sought to build a framework for the protection and exploitation of traditional knowledge and biological resources in Nigeria. The scope of protection provided extends to traditional knowledge that is generated, preserved and transmitted in a traditional and intergenerational context; as well as biological resources. The right to use and exploitation of traditional knowledge is vested (as the case may be) in the community, family or recognised individual(s) within the community, who create, develop, preserve, maintain or transmit the knowledge. In this way, the Bill sought to preserve the traditional concept of ownership which in most cases is usually communal.

However, mere vesting of the right of ownership, use and exploitation of traditional knowledge and biological resources to the communities and individuals (as the case may be) is not enough especially considering the fact that most of these are poorly educated and hence not in the best position to negotiate complex contracts or agreements in relation to the commercial exploitation of these knowledge or resources. To deal with this situation, the Bill went a step further to propose the establishment of the Traditional

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<sup>33</sup> A Bill for an Act to provide for the protection of traditional knowledge, regulation of access to biological resources and related matters.

Knowledge and Biological Resources Management Board (the Board). The Board is empowered to act on behalf of the local communities in the exercise of their right in relation to exploitation of their biological resources and traditional knowledge e.g. negotiation of contract and granting of right of access. Access to biological resources and associated knowledge of any community is subject to the grant of written prior informed consent by the community through the Board. The use and exploitation of traditional knowledge and resources without the right of access granted by the Board gives rise to criminal and civil liabilities.

Mere grant of right of access does not confer an absolute proprietary right on the grantee neither does it divest the community of all right in relation to the traditional knowledge. As a matter of fact, the grantee is prevented from applying for any intellectual property rights over the resources or associated knowledge without the prior informed consent of the Board and the community or recognised individual(s). Even then, where the traditional knowledge leads to an innovation or discovery, the relevant community or individual providing the knowledge leading to the discovery shall be entitled to a share of the earnings arising therefrom and in addition shall be acknowledged in all publications, patents and other intellectual property rights documentation arising from the discovery or innovation.<sup>34</sup> However, the Bill fell short of prescribing the benefit sharing ratio – leaving it up to the Board to make regulation to that effect. In addition, it is quite evident that the Bill envisages a process whereby the traditional knowledge may result in patentable innovation or discovery but fell short of clearly defining the rights in relation to a patent arising therefrom. If the discovery or innovation is to be patented, the issue then is who has the patent – is the community, the Board or the grantee? The answer to this question is very important because of the effect of a patent in divesting the community of its traditional right. Hence one would have envisaged a framework whereby the patent is held in trust for the community either by the Board or the grantee. In addition, the framework should explicitly provide that the issuance of patent to a grantee should not divest the local communities of their customary rights in relation to

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<sup>34</sup> S.16



the use and exploitation of the traditional knowledge or resources in dealing with their local health and socio-economic situations.

Another important feature of the Bill is the establishment of the Traditional Knowledge and Biological Resources Registry (“the Registry”). The Registry is to develop a Database on traditional knowledge and biological resources, in which shall be entered particulars of all identified traditional knowledge that belongs to the communities and families identified within the territory of Nigeria.<sup>35</sup> The benefit of such database had earlier been discussed and hence much need not be said over than to recommend such a statutory codification of such initiative.

## **Conclusion**

It is now obvious that the Western concept of intellectual property rights does not fit the unique characteristics of traditional knowledge. The growing interest in TK mainly as a result of the potential benefits associated with the knowledge especially in the area of bioprospecting and drug development will continue to generate serious debate. Until an equitable framework which defines and addresses the legitimate diverse interests of all the parties in this dispute is put in place, access to TK will continue to be difficult and problematic. It is hoped that this research will contribute to the on-going debate as to the appropriate framework that will adequately protect the basic characteristics of TK while at the same time ensuring access to traditional knowledge and information.

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<sup>35</sup> S. 20

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