Regional Policy Instruments, Developments and Trends in Sub-Saharan Africa[1]

(Summary of presentation)

Introduction

Sub-Saharan Africa excludes African countries in the North (i.e., Egypt, Libya, Tunisia, Morocco and Mauritania). These countries belong to the region known as CWANA (Central and Western Asia and North Africa), notwithstanding that politically and geographically they are in Africa. Thus, the discussion herein focuses on those African countries that lie below the Sahara (figure 1).

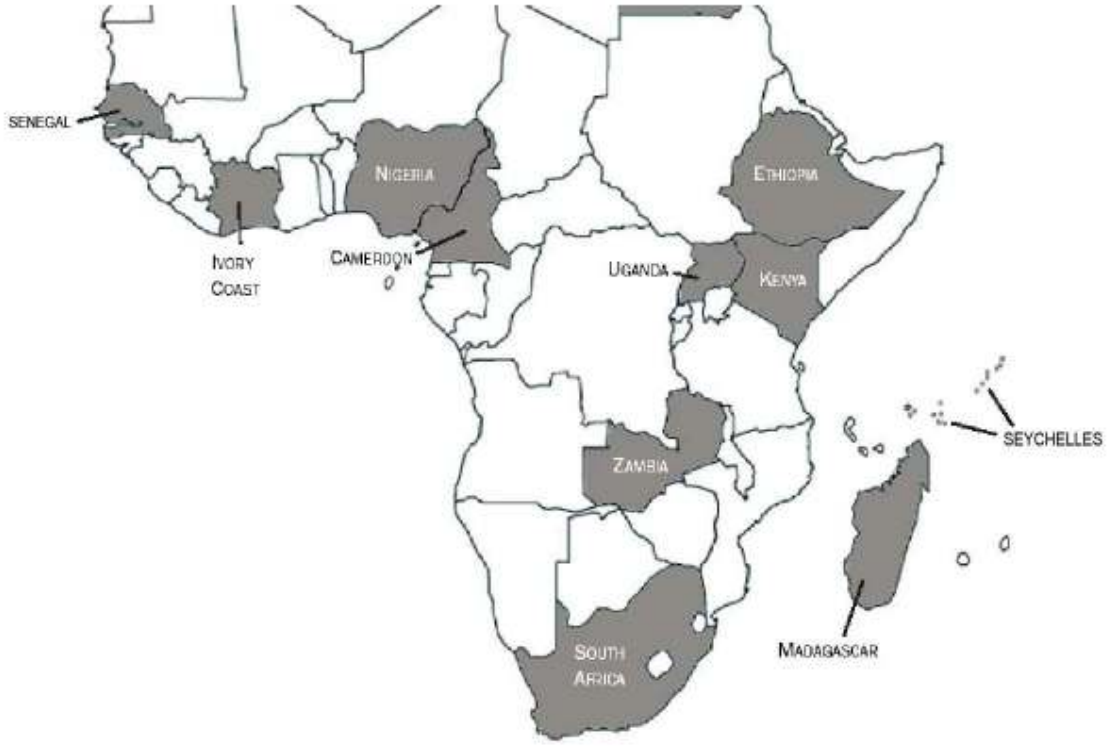

Figure 1. Sub-Saharan Africa

Most of Africa's economies, cultures and political systems are dependent, to a large extent, on genetic resources, which have been vital and are of increasing importance to many sectors, including agriculture, pharmaceuticals and the chemical and industrial sectors. The acquisition and study of new genetic materials plays a key role in developing new varieties of crops, drugs and technologies that can help alleviate hunger, disease and poverty. In addition, the issue of access to genetic resources is of critical importance to a number of fields, including agriculture, and of major significance to public health, particularly with increasing interest in and reliance on

[1] Background paper developed by Dr. Kent Nnadozie and revised by Mr. Peter Munyi.

traditional medicine.[2] In the past three decades or so, the question of how well these resources are conserved, managed and used in a sustainable manner, including related issues such as intellectual property rights, has taken centre stage in both national and regional discussions.

The nature of genetic resources and the activities that depend upon them are unique and cross-cutting and, as a result, defy simple solutions to the inherent challenges. For instance, regulating genetic resources—who has access to them and where the benefits of any new products, technologies or crops should accrue—is a complicated process that has been evolving for nearly three decades, with many unanswered questions.[3] However, one of the major challenges in this regard is the relative paucity of relevant policy and legislation as well as institutional and other capacity to address the complex issues surrounding genetic resources. With increasing international focus on the implementation phase of the various international agreements related to genetic resources, one of the questions that invariably arise is how harmonizing their requirements, with particular emphasis on regional coordination, can facilitate domestic implementation of the relevant governing instruments.

At present, there are some activities and initiatives towards coordinated legal and policy developments regarding issues related to genetic resources in Africa, through the African Union as well as some sub-regional organizations and institutions. Many of these developments are likely to affect how national approaches to the related issues will evolve in the region over time. The following section looks at some of the traditional concepts of access and benefit sharing in Africa, while subsequent sections look at existing legal and policy frameworks, their rationale and the intellectual property aspects of genetic resources; specific regional legal and policy instruments and, finally, regional and sub-regional institutions carrying out activities on genetic resources or related issues.

Traditional African Concepts of Access and Benefit Sharing (ABS)[4]

There are hundreds of distinct ethnic groups and languages in Africa—more than 250 groups in Nigeria alone—each with its unique culture and traditional practices matched by a corresponding diversity in genetic resources and ecosystems. No other continent approaches its rich cultural, geographical and human diversity.[5] Humans have lived in Africa far longer than anywhere else and have been influenced and shaped by the continent's diverse geography and long prehistory. Despite this staggering diversity, one of the most common attributes of the peoples of Africa is the almost total dependence on, or rather interdependence with, nature and natural resources for survival and existence.[6] The result is a continuous evolution and dynamic development of norms and rules governing interactions with nature, individually, collectively and among members of the society. Throughout generations, traditional peoples of Africa have managed, developed and protected their environment, and shared the associated knowledge, ranging from medicinal plants, deliberate selection and storage of seeds to complex cropping systems and practices. Invariably, certain protocols and norms have arisen from these systems and practices. Some of these norms, over time, crystallized into indigenous legal systems and have become embedded in the customary laws within communities.

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2 Nnadozie, K. 2004. Integrating African perspectives and priorities into genetic resources regulations: A resource guide for policymakers. Environmental Law Institute, Washington DC.

3 Ibid.

4 Adapted from Nnadozie (ibid.).

5 See pages 376, 377 in Diamond, J. 1997. Guns, germs and steel: The fates of human societies. Norton, WW & Company, New York.

6 It is estimated that over 70% of the continent's population resides in rural communities and derives subsistence and income principally from agriculture and biological resources.

In general, the idea of private ownership of natural resources or even knowledge is alien to local communities in Africa as there is a continuous sharing, transmission and exchange of resources and information. One of the defining characteristics of local African societies is the predominantly communal nature of the use and management of genetic (and biological) resources. Sharing and exchange is well established as the norm and a necessity for survival. Access to genetic resources in most cases is neither personalized nor controlled by individuals because the resources are communally owned and managed.[7] 'Ownership' is not absolute but is usually linked to the use and management of resources, with attendant rights to benefit from knowledge and innovation based on needs and equity. As a result, the concept of ownership as understood in the contemporary Western sense is alien to African communities.

However, these traditional African concepts are currently facing major challenges, with fundamental changes in contemporary concepts and recent international political, legal and policy developments. Led by the Convention on Biological Diversity (CBD), the FAO International Treaty on Plant Genetic Resources (IT) and TRIPS, among others, current and emerging global trends are redefining not only how access to genetic resources is obtained but also the rules for sharing the benefits that arise from their use. (See Sessions 4, 5 and 7 in the Base Learning Module on Law and Policy of Relevance to the Management of Plant Genetic Resources.)

Legal Frameworks for Access to Genetic Resources

Legal structures

Responses to current and emerging global challenges have been mixed in the region at all levels—local, national and regional. At the national level in many countries, the most common approach to ABS-related regulations and policy consists of adapting existing structures and legal frameworks on an *ad hoc*, sectoral basis. Several sectors are particularly important in this respect: the environment, agriculture, protected areas, forestry, and science and technology. Often, legislation and associated regulatory provisions tend not to address genetic resources specifically. However, they do normally assign exclusive management authority of legally recognized areas or issues to individual institutions or ministries. This management authority almost invariably includes the requirement that the institution authorize any removal of any material from the area under its jurisdiction and, in many cases, also includes similar blanket provisions requiring authorization for any research to be conducted, or even to be present, in such areas. This type of authority could, and often is, adapted to regulate research on genetic resources in these areas. The processes for obtaining authorization are not tailored to ABS concerns, but they do require background information about the proposed research and often the involvement or endorsement of local institutions. However, the emerging initiatives indicate a trend towards specific ABS legislation and regulations focusing on contractual approaches as exemplified by the African Model Law for the Regulation of Access to Biological Resources.

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[7] Although knowledge and resources are by and large shared, there are cases where very conscious and overt efforts are made to safeguard them or prevent others from undue or abusive access. This is particularly so with knowledge relating to medicine and healing, which often entail magical powers and are associated with some level of political authority or significance. However, even in cases where knowledge resides in or is held by particular individuals (a shaman, for instance) such knowledge is acquired by virtue of membership in the community. The shaman is, therefore, seen as a custodian and, even though making a living from it, holds the knowledge on behalf of and for the benefit of the entire community.

Institutional structures

The institutional structure for governing genetic resources in most African countries is also largely fragmented along sectoral and geographical lines. Sectoral fragmentation usually follows pre-independence patterns, with the institutions responsible for forestry, agriculture, marine resources and protected areas (and more recently, the environment) all having mandates that are interpreted as providing some limited form of authority over access to genetic resources or related issues. Sectoral fragmentation almost invariably creates problems regarding the overlap of mandates and frequently results in a 'turf mentality', a weak to non-existent capacity for enforcement and, sometimes, contradictory policy goals.

Historically, the vague governance regimes for genetic resources under these fragmented and sectoral systems have meant that, for instance, access has been virtually free, in both a bureaucratic and economic sense. However, this situation has been reversed in many countries over the recent past as awareness of 'biopiracy' has grown. In the absence of clear rules and mandates, institutions and their senior officers are now often reluctant to grant permission for even the most *bona fide* requests for fear that there may be something they will miss or be criticized for.

Policy rationale underlying current regulatory regimes for access

A range of policy rationales can be identified in existing African regulatory frameworks as well as the new initiatives underway in many countries. At one end of the spectrum are countries where there is no coherent government policy. At the other end of the spectrum are situations, such as that of Ethiopia, where government activities are informed by a relatively focused policy rationale.

There is a common theme among the countries in Africa in that they all consider the elements of poverty alleviation, development (including capacity building) and conservation in their policy rationales, even when not specifically articulated. In several countries, including Ethiopia, Senegal, Uganda and Zambia, the main policy emphasis is on poverty alleviation. This is primarily seen in terms of activities directly affecting rural communities, and in some aspects, it includes elements of conservation and, to a lesser degree, development. The Seychelles places primary emphasis on conservation, although development, particularly in the agricultural sector, is also a major issue. South Africa iterates its primary objectives as relating to conservation, but in practice seems to place stronger emphasis on development, primarily in the form of commercial activities.

The relative weighting of priorities seems, predictably, to be conditioned by the particular situation of a country. Ethiopia is deeply concerned about the vulnerability of its population to climatic catastrophes, largely due to poverty, and thus poverty alleviation becomes the major priority. The Seychelles is a small island state with a fragile environment and derives a significant proportion of its national income from tourism, and thus conservation is a top priority. As a country with a significantly larger economy than others in Sub-Saharan Africa, South Africa can afford to concentrate on longer-term development strategies and address its poverty alleviation concerns from other sources. In some cases, although not usually coherently iterated, trade and income generation is the major policy rationale and it is presumed that commercial success could arise from bio-prospecting as well as providing funding for conservation activities.

Intellectual property rights

Issues related to intellectual property rights have become inextricably linked with, and are a major source of controversy in, the field of access to genetic resources, with the issue occupying substantial quantities of time and resources in a number of international fora. Practically all the African countries are currently members of the WTO and are thus obligated to implement minimum standards for IPRs under the TRIPS Agreement. In terms of implementation, the majority of countries comply broadly with their obligations and several are actually exceeding them in that they already have IPR provisions applicable to genetic resources under Article 27.3 (b), even though they are not required to do so prior to 2005.

Most have also taken maximum advantage of some of the permitted exclusions from patentability. In most cases, they have actually incorporated the first sentence of the sub-paragraph directly into their patent laws. However, as is clearly stated in the African Group position in the TRIPS Council, they are unhappy with the requirement that they must allow for the patentability of microorganisms and microbiological processes—the patenting of life forms in general. In fulfilment of Article 27.3 (b), many countries have taken the *sui generis* option for the protection of plant varieties. In implementing the *sui generis* option, Kenya and South Africa are parties to the 1978 text of the UPOV Convention.[8] South Africa has signed, but not ratified, the 1991 text but has already largely amended its legislation to be 1991 compliant. Sixteen Francophone countries, as signatories to the Bangui Accord and members of the African Intellectual Property Organization (OAPI, from the French name: *Organisation Africaine de la Propriété Intellectuelle*),[9] have also committed to implementing the 1991 text of UPOV-compliant plant variety protection as and when the relevant section of the revised Accord enters into force.

However, in other countries, where legislation on plant variety protection is under consideration, it is usually based, at least in principle, on the pattern of the African Model Law, which requires greater consideration of farmers' rights than is found in the UPOV model. Unfortunately, the concept of farmers' rights has yet to be developed to the degree that the nature of these rights can be fully articulated. In any case, the consideration of farmers' rights anticipates and prepares for the entry into force of the FAO International Treaty on Plant Genetic Resources, which African countries have supported very strongly. It may well be that the entry into force of the Treaty will prompt a new round of legislative initiatives aimed at its effective implementation. Indeed, the draft ABS legislation in Seychelles as well as Ethiopia's draft ABS regulations specifically take the provisions of the Treaty into consideration, especially with respect to the multilateral system for access and benefit sharing to be instituted under the Treaty.

Regional Initiatives and Approaches

As stated above, Africa faces significant shortages in such areas as legal, legislative and policy-making capacity. In recognition of this shortcoming, efforts have been or are being made on several fronts to adopt a regional approach in addressing some the problems. For instance, the initiative of the Organisation of African Unity (OAU) (now 'African Union' or 'AU') to develop 'Model Legislation on the Protection of the Rights of Local Communities, Farmers and Breeders and for the Regulation of Access to Biological Resources' started in 1997, when the

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[8] UPOV is the International Union for the Protection of New Plant Varieties; the acronym derives from the French version of the title: *Union pour la Protection des Obtentions Vegetales*.

[9] See the section on the African Intellectual Property Organisation, below.

Organisation embarked on a process through its Scientific, Technical and Research Commission to assist African countries in fulfilling their obligations under both the CBD and the TRIPS Agreement. It is believed that maximizing synergies in activities to implement the respective agreements could precipitate the coordination of the activities of states in such a way as to avoid unnecessary costs and duplication, as well as to exploit comparative advantages.

Therefore, it is expected that one way to make regulatory efforts more expeditious and cost-effective is by using regional frameworks to coordinate legislative and policy development. While this serves to avoid duplication of efforts, it further allows for the coordination of regulatory regimes as well as other measures, including research and capacity building, among neighbours.[10] Several region-wide as well as sub-regional instruments have been developed in this regard.

African Model Legislation for the Protection of the Rights of Local Communities, Farmers and Breeders, and for the Regulation of Access to Biological Resources

Background

As mentioned above, the OAU initiative started in 1997, when the Organisation embarked on a process intended to assist African countries in fulfilling their obligations under the CBD and the TRIPS Agreement. Following this initiative, the 'African Model Law for the Protection of the Rights of Local Communities, Farmers and Breeders and for the Regulation of Access to Biological Resources' was prepared by a task force constituted for that purpose. Subsequently, the OAU Ministerial Session adopted this Model Law in Ouagadougou in 1998 and recommended that member states use it as a basis for developing national laws on the relevant issues.

The model law was developed with specific reference to the CBD and the TRIPS Agreement. The objective of the Model Law, crafted as a *sui generis* regime, is to provide AU Member States with a legal framework for the formulation of a legal instrument relevant to their national interests, while providing for the protection of new plant varieties as required by TRIPS. It is also intended to give attention to the conservation and sustainable use of biodiversity, sustenance of food security, protection of community rights (including farmers and breeders) and equitable sharing of benefits consistent with the provisions of the CBD and the concept of national sovereignty. The Model Law integrates the concept of farmers' rights while making provisions to protect breeders' rights.[11]

As a central principle, the AU Model Law holds that patents on life are immoral and go against the basic values of African citizens and should therefore be outlawed. Generally, the Model Law recognizes the principle of sovereign partnership of states and local communities over all biological resources. While recognizing the power of the state to regulate, it affirms

[10] Biodiversity Action Network. 1999. Access to genetic resources: an evaluation of the development and implementation of recent regulation and access agreements. Environmental Policy Studies Working Paper #4. Columbia University, New York.

[11] Tewolde Berhan Gebre Egziabher. 2002. The African Model Law for the protection of the rights of local communities, farmers and breeders and for the regulation of access to biological resources in relation to international law and institutions. Institute of Sustainable Development (ISD), Addis Ababa.

the rights of local communities over their resources, innovations and practices.[12] Accordingly, under Article 17, the State recognizes and protects the rights of local communities as they are enshrined and protected under the norms, practices and customary law found in, and recognized by, the local and indigenous communities concerned, whether such law is written or not. Under Articles 19 and 20, local communities also have the right to refuse, withdraw or restrict access to their biological resources, innovations, practices, knowledge and technologies. The Model Law also promotes the principle of prior informed consent of the competent national authority and, where applicable, of local communities before access is granted. It prohibits the patenting of life forms in accord with African cultural values and norms.

Key elements

The Model Law has four general chapters (objectives, definitions and scope, institutional arrangements, and enabling provisions) and four specific thematic chapters (on access to biological resources, community rights, farmers' rights, and plant breeders' rights). The principal objective of the Model Law is to 'ensure the conservation, evaluation and sustainable use of biological resources, including agricultural genetic resources as well as associated traditional knowledge in order to improve their diversity as a means of sustaining the life support systems'. It was formulated, *inter alia*, to

- recognize, protect and support the inalienable rights of local communities, including farming communities, over their biological resources, crop varieties, medicinal plants, knowledge, technologies and practices
- recognize and protect the rights of breeders over varieties developed by them
- provide a mutually acceptable system of access to biological resources, community knowledge, technologies and practices subject to the prior informed consent (PIC) of the State and the concerned local communities
- provide and promote appropriate mechanisms for the enforcement of the rights of local communities, including farming communities, and breeders, along with the conditions essential for access to biological resources, community knowledge, technologies and practices
- ensure that genetic resources are utilized in a sustainable and equitable manner

In terms of scope, the Model Law applies to the following:

- biological resources, both *in situ* and *ex situ*
- the derivatives of biological resources
- community knowledge, innovations, technologies and practices
- local and indigenous farming communities, farmers and plant breeders[13]

Subsequent to its adoption, several countries have been looking at the provisions of the Model Law for guidance in drafting their national legislation on the relevant issues. The Ethiopian legislation on ABS is structured on it, and the current Namibian draft bill is based largely on it. Nigeria and Ghana also took it into account in the preparation of their respective plant variety protection bills, which are in the process of being passed into law.

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[12] K. C. Nnadozie. 2001. Access to genetic resources and intellectual property rights: regulatory and policy framework in Nigeria. *In* P. Drahos and M. Blakeney (Eds), IP in biodiversity and agriculture: Perspectives on intellectual property. Volume 9. Sweet and Maxwell, London.

[13] Article 2 (1). Traditional systems of access, use and exchange of biological resources, knowledge and technologies are specifically excluded from the scope of the Law. This is to protect these customary practices from disruption through external interference.

African Model Law on Safety in Biotechnology

Background

The African Model Law on Safety in Biotechnology, prepared by the AU Commission, follows in the footsteps of the earlier OAU Model Law on Access to Genetic Resources and Community Rights and was developed to enable rationalization of the scarce capacity and financial resources in the region. It was also created in recognition of the need for Member States to equip themselves with the necessary human and institutional capacity to deal with biosafety issues within the framework and implementation of the Cartagena Protocol on Biosafety. It was further construed as a mechanism to assist in catalyzing the process of setting up an Africa-wide Biosafety System and to enhance the compatibility of national implementation and the exchange of information among countries in the region.

The draft Model Law was tabled for adoption at the AU Council of Ministers meeting in Maputo, Mozambique, in July 2003. In adopting it, the Council urged Member States, in abiding by the provisions of the Cartagena Protocol, to use the African Model Law on Biosafety as a basis for drafting their national legal instruments in biosafety, taking into account their national peculiarities, in order to create a harmonized Africa-wide space and system in biosafety for regulating the movement, transportation and importation of genetically modified organisms (GMOs) in Africa.

Key elements

In terms of scope, the Model Law applies to the import, contained use, release or placement on the market of any GMO or products from GMOs. Notably, it has broader scope than the Cartagena Protocol in that the latter refers only to living modified organisms (LMOs) and does not cover 'products of' such organisms.

The model law provides that no person shall, without the approval of the competent national authority (CNA), import, make contained use of, release or place on the market a GMO or product of GMOs. An application for approval must be submitted to the CNA and will include, *inter alia,* a report on risks to the environment, biodiversity and health, including the consequences of unintentional releases. When an application is received, the information included is to be made available to the public and other governmental agencies by the CNA for comments and objections. However, the information provided is subject to limited confidentiality restrictions for business purposes after the applicant makes a claim for confidentiality to the CNA.

Decisions of the CNA must be in writing. Approvals require subsequent monitoring and evaluation of risks and can only be issued after the CNA has duly determined that the GMO or product of GMOs poses 'no risks to the environment, biological diversity or health'. In addition, no approval is to be given unless the activity will (a) benefit the country, (b) contribute to sustainable development, (c) not have adverse socio-economic effects, and (d) be in 'accord with ethical values and concerns of communities and does not undermine traditional knowledge and technologies'.

In consonance with the Cartagena Protocol, the Model Law incorporates the precautionary principle.. However, while it seeks to facilitate the implementation of the Cartagena Protocol, the Model Law contains stipulations as well as additional provisions that go beyond the Protocol. For instance, the Model Law makes provisions for labelling GMOs or products of GMOs, requiring that they be clearly identified and labelled as such, using words to be

specified in an annex to the Law. Such identification is to specify the relevant traits and characteristics in sufficient detail for purposes of traceability. The CNA may require additional information, in particular, whether the product may cause reactions, allergies or other risks.

Unlike the Protocol, the Model Law contains very specific and extensive provisions for liability and redress, stipulating strict liability for any harm caused by a GMO or product of a GMO, and it requires any harm or injury to be fully compensated. Liability attaches to the person responsible for the activity as well as the GMO provider, supplier or developer. Harm to the environment or biological diversity is also to be compensated, including costs of reinstatement, rehabilitation and clean-up, as well as the costs of preventive measures. Liability shall also extend to direct or indirect harm or damage caused to 'the economy or social or cultural practices or the livelihood or indigenous knowledge systems or technologies of a community or communities'. *Harm* includes disruption or damage to production and agricultural systems, reduction in yields, soil contamination, damage to biological mass and damage to the economy of an area or community. The Model Law also contains penal provisions and stipulates fines and terms of imprisonment.

The New Partnership for Africa's Development

The New Partnership for Africa's Development (NEPAD), launched at the AU summit in Lusaka, Zambia, in July 2001, refers to the role that biological resources have played and will continue to play in the lives and livelihoods of African people, as well as in the fulfilment of some of the principal elements of NEPAD's development programmes.[14] The NEPAD policy document generally recognizes Africa's biodiversity as an important global resource in combating the environmental degradation posed by the depletion of the ozone layer and climate change, as well as the pollution of air and water by industrial emissions and toxic effluents.

Additionally, NEPAD recognizes, among other things, that the urgent need to achieve food security in African countries requires inadequate agricultural systems to be addressed so that food production can be increased and nutritional standards raised. It further recognizes that the institutional environment for agriculture also significantly affects the sector's productivity and performance. The regulatory framework for agriculture must also be taken into account, including encouraging local community leadership in rural areas and involving these communities in policy and the provision of services. While the document contains a detailed shopping list of objectives and expectations, the process of setting up the institutional framework and relevant capacity to realize these objectives is still under development. The NEPAD Secretariat is currently working closely with the United Nations Environment Programme's (UNEP) Regional Office for Africa and the African Ministerial Council on the Environment (AMCEN) to implement the environmental components of the NEPAD programme. The NEPAD Secretariat worked with the FAO to develop the agricultural components of NEPAD, and it is anticipated that these will be implemented in conjunction with FAO, with relevant regional organizations and with the international agricultural research centres operating in the region.

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[14] For example, paragraphs 9–10 of the NEPAD Policy Document state that 'Africa's place in the global community is defined by the fact that the continent is an indispensable resource base that has served all humanity for so many centuries. . . . These resources can be broken down into: The rich complex of the flora and fauna, and the wide unspoiled natural habitat, which provide the basis for mining, agriculture, tourism and industrial development; [etc.].' Paragraph 12 states that 'African resources include rainforests; The *New Partnership for Africa's Development* will contain a strategy for nurturing these resources and using them for the development of the African continent while, at the same time preserving them for all humanity.'

The Revised African Convention for the Protection of Nature and Natural Resources

Background

The first ever region-wide agreement with respect to genetic resources was the African Convention on the Conservation of Nature and Natural Resources, which was approved by the Council of the Organisation of African Unity at its 11th Ordinary Session in Algiers in September 1968. Although at the time of its adoption the convention was rather forward-looking, most of the conceptual issues as they are known and understood today were not considered by the negotiators.[15] It was largely conservation-oriented and had token provisions on sustainable use but none on issues such as benefit sharing. Known as the 'Algiers Convention', it came into force on 16 June 1969, but lacked the institutional framework for enforcement and implementation.

However, the need to adapt the text of the convention to current scientific, technical and legal thinking and approaches, as well as making it more relevant to regional challenges necessitated the institution of a review process to bring it up to date and to address the particular needs of the region. The review process started in the early 1980s with the support and cooperation of the World Conservation Union (IUCN) and the United Nations Environment Programme (UNEP). The revision, which took into account recent developments in environment and treaty law, makes the Convention a comprehensive regional treaty on the environment and conservation of natural resources, while at the same time incorporating an array of matters related to sustainable development.

The revised text of the Convention was forwarded to the Assembly of Heads of State and Governments and was adopted on 11 July 2003 in Maputo, Mozambique. It provides for an independent secretariat and will enter into force once 15 African states have ratified it.

Key elements

The objectives of the revised Convention are as follows:

1. to enhance environmental protection
2. to foster the conservation and sustainable use of natural resources
3. to harmonize and coordinate policies in these areas with a view to achieving ecologically rational, economically sound and socially acceptable development policies and programmes

The convention obliges parties to ensure the conservation of species and their habitats within the framework of land-use planning and of sustainable development. In so doing, the Parties shall, among other things, provide for fair and equitable access to genetic resources, on terms mutually agreed between the providers and users of such resources and related traditional knowledge. The convention requires Parties to take legislative and other measures to ensure that traditional rights and intellectual property rights of local communities, including farmers' rights, are respected in accordance with the provisions of the Convention. It further stipulates that Parties shall require that access to indigenous knowledge and its use be subject to the prior informed consent of the concerned communities and to specific regulations recognizing their rights to, and appropriate economic value of, such knowledge. Parties are also required

[15] Nnadozie K., D. Kiambi, P. Kameri-Mbote, K. Atta-Krah and J. Mugabe. 2002. Plant genetic resources in Africa's renewal: policy, legal and programmatic issues under the New Partnership for Africa's Development. International Plant Genetic Resources Institute (IPGRI), Nairobi.

to take measures necessary to enable active participation by local communities in the process of planning and management of natural resources upon which such communities depend, with a view to creating incentives for the conservation and sustainable use of such resources.

The provisions of this convention obviously incorporate the objectives of the CBD and the FAO International Treaty, and further reinforce the commitment of the region to implementing their provisions, thus making compliance with the African convention consistent with them. To this extent, it is expected that any legislation or measures taken to fulfil the provisions of the African Convention will invariably go towards the fulfilment of countries' obligations under the CBD and the International Treaty and vice versa. In light of the dearth of resources and capacity within the region, as well as the extensive international obligations currently existing on these issues, this approach is prudent because the creation of different or additional obligations would surely make the implementation of the African Convention more difficult. The convention also creates the framework for a regional approach and collaboration, among other things, in access to genetic resources and benefit-sharing issues. This will include enforcement issues and coordination of research activities with a view to achieving maximum synergy and complementarity.

Sub-Regional and Regional Organizations of Relevance to Genetic Resources

Both the CBD and the International Treaty stress the importance of parties promoting international technical and scientific cooperation in the field of conservation and sustainable use of biological diversity and genetic resources for food and agriculture, and where necessary, through appropriate international and national institutions and networks.

There are currently several sub-regional organizations in Africa with activities that touch upon policy related to genetic resources and which have been instrumental to or relevant in legal and policy development in the region. They have also been essential to the decision-making processes and setting of priorities within the region, as well as facilitating the participation of different stakeholders, especially the scientific community, in legislative and policy development.

In addition, these organizations have been critical in increasing the knowledge base required for effective decision making in the region. And, although plagued by resource and capacity shortages, they have also been instrumental in heightening awareness of the importance of genetic resources in sustainable development and improving the livelihood of the peoples of the region. Unfortunately, there has also been a duplication of efforts and objectives within and between these organizations, which has led to inefficiency and poor use of resources, especially in instances where a number of countries are members of more than one organization with the same aims and objectives.

These organizations are discussed below.

The West and Central African Council for Agricultural Research and Development (CORAF/WECARD)

CORAF was founded in 1987 under the name *Conférence des responsables de recherche agricole en Afrique de l'Ouest et du Centre* (CORAF). In July 1999, during its 12th executive meeting, the current name, *Conseil Ouest et Centre Africain pour la Recherche et le Développement Agricoles* (West and Central African Council for Agricultural Research and Development), was adopted. It is comprised of 24 countries: Benin, Burkina Faso, Burundi, Cameroon, Cape Verde, Central African Republic, Chad, Congo, Democratic Republic of Congo, Gabon, Gambia, Ghana, Guinea, Guinea Bissau, Ivory Coast, Madagascar, Mali, Mauritania, Niger, Nigeria, Rwanda, Senegal, Sierra Leone and Togo. Member states are represented by their national agricultural research institutes.

CORAF/WECARD started as a discussion forum with the objective to (a) facilitate the exchange of information and experiences, (b) promote partnerships, (c) identify and formulate common research themes, (d) identify innovative projects and (e) organize research partnerships at the sub-regional level. It subsequently expanded its activities to implement sub-regional agricultural research policies with a view to

- improve the efficiency and effectiveness of agricultural research in West and Central Africa by contributing to the construction and consolidation of the capacities of the national agricultural research systems (NARS) through cooperation between its members, development partners, regional and international organizations, the private sector, non-governmental organizations, users of research results
- consolidate the position of the West and Central African sub-region within the context of the international agricultural research and development

Its objectives include

- promoting cooperation, consultation and the exchange of information between member institutions on the one hand and partners on the other
- defining joint sub-regional and regional research objectives and priorities
- serving as a consultative body for research carried out by regional and international organizations operating at the sub-regional level
- developing joint research programmes in order to strengthen complementary activities between CORAF/WECARD and its partners
- harmonizing the activities of the existing research networks and facilitating the creation of new regional networks or other operational research units with a regional character

Association for Strengthening Agricultural Research in Eastern and Central Africa (ASARECA)

ASARECA is constituted of 10 countries: Burundi, Democratic Republic of Congo, Eritrea, Ethiopia, Kenya, Madagascar, Rwanda, Sudan, Tanzania and Uganda. The Memorandum of Agreement that established ASARECA was signed in September 1994 and the Executive Secretariat is based in Entebbe, Uganda.

It has three broad objectives: to improve the relevance, quality and cost-effectiveness of agricultural research; to establish and support regional mechanisms to reinforce and improve research collaboration among the NARS; and to improve the delivery of appropriate new information and technology. ASARECA carries out its activities through regional research networks, programmes and projects. It aims to enhance agricultural productivity in the region through regional collaboration in agricultural research and to promote sub-regional economic growth through the development and dissemination of agricultural technologies that respond to current and future economic opportunities, while maintaining the long-term sustainability

of the agricultural resource base. It further seeks to develop criteria for the regional and national priority-setting process, with the objective of creating strong linkages among producers, processors and markets.

ASARECA's activities include developing networks, providing policymakers with policy options on agriculture, enhancing capacity on information and communication and facilitating technology transfer. The collaborative research projects of the networks/programmes are undertaken by NARS scientists with, in many cases, technical backstopping by scientists of the international agricultural research centres (IARCs) as well as, in some cases, support from advanced research institutes (ARIs). Funding for the regional network/programme activities comes from a multiplicity of sources, including national governments and donor agencies as well as core support from the IARCs and ARIs.

Southern African Centre for Cooperation in Agricultural and Natural Resources Research and Training (SACCAR)

SACCAR consists of 11 countries: Angola, Botswana, Lesotho, Malawi, Mozambique, Namibia, South Africa, Swaziland, Tanzania, Zambia and Zimbabwe. It was established in 1984 by the Southern African Development Community (SADC) to coordinate research on agriculture and natural resources, as well as training activities, and to promote cooperation between member states in these fields. Institutionally, SACCAR is a commission of SADC.

Its objectives include the following:

- promoting and disseminating available and appropriate agricultural and natural resources technologies among and between SADC countries
- coordinating dialogue and implementation of studies on research policies, priorities and constraints related to agriculture and natural resources common to all member states, and initiation of cooperative research projects to overcome these constraints
- coordinating regional research on use and conservation in agriculture and natural resources, and the establishment of mechanisms for integrated research
- strengthening the capabilities of NARS
- promoting rapid and continuous provision, interchange and use of scientific and technical information, in agriculture and natural resources
- providing such regional support services and functions as may be necessary to assist and inform national and regional agricultural and natural resources research institutions
- promoting professional training in the food, agriculture and natural resources (FANR) sectors

SACCAR aims to foster regional integration in agricultural research and training by assuming coordination and facilitative functions and delivering relevant services. It further seeks to facilitate and institutionalize the development of effective, efficient and sustainable research and training systems for the agricultural sector by promoting regional research networking and integration, mobilization of resources and exchange of information and technology.

The Forum for Agricultural Research in Africa (FARA)

The Forum for Agricultural Research in Africa was originally established in February 1997, based on the aspirations of the African agricultural research community to develop a competitive agricultural sector that would preserve the diversity of African cultures and identify with its natural resource base. By its establishment, FARA is, as expected, the apex organization for agricultural research in Africa. Its goal is to promote economic growth and

development and food security from sustained increases in the productivity of resources used in agriculture, livestock, forestry and fisheries through the concerted efforts of NARS, sub-regional organizations (SROs) and policymakers. The three sub-regional organizations (ASARECA, CORAF/WECARD and SACCAR) are the founding members of FARA.

FARA, as it is today, is a transformation of two existing organizations—FARA and the Special Programme for African Agricultural Research (SPAAR). SPAAR was established in 1985 to coordinate donor funding for agricultural research in Africa, with its secretariat hosted and funded by the World Bank in Washington DC. Over the years, it grew into a forum of partners of African agricultural research. In 1997, the SROs and the NARS established FARA as an Africa-based regional forum, with a secretariat rotating among the SROs. To streamline and consolidate functions, avoid duplication and rationalize resources, SPAAR and FARA decided to merge into a single apex organization for African agricultural research: the new FARA, which is African-based, African-led and African-managed, with a fixed secretariat. FARA is now hosted by the FAO Regional Office in Accra, Ghana.

Other initiatives

Biosciences Facility for Eastern and Central Africa[16]

One of the preconditions for national and regional economic competitiveness, as well as sustainable development, is the emergence and growth of institutions dedicated to scientific research and technological innovation. Such institutions are the bedrock of a modern knowledge economy—indeed, of any economy that gets well integrated into the rapidly globalizing system. Thus, for African countries to effectively respond to the forces of globalization and achieve the sustainable development goals articulated in NEPAD, the Plan of Implementation of the World Summit on Sustainable Development (WSSD) and the Millennium Development Goals (MDGs), they need to build and/or strengthen institutions for research and development.

A Biosciences Facility for Eastern and Central Africa is being established as part of NEPAD's continent-wide network of centres of excellence. NEPAD explicitly recognizes that Africa's economic renewal and sustainable development will not be achieved without investment in science and technology. The objectives of the Biosciences Facility are to

- provide a focal point for the African scientific community to support the activities of national, regional and international agencies as they address agriculturally related problems of the highest priority for reducing poverty and promoting development on the continent
- create and strengthen human capital in biosciences and related disciplines
- promote scientific excellence by bringing together a critical mass of scientists drawn from national, regional and international institutions in state-of-the-art facilities where they can undertake cutting-edge research to help solve the most important development constraints faced by the poor in Africa
- increase access to affordable, world-class research facilities within Africa
- produce, manage and disseminate bioscience knowledge of greatest pertinence to Africa's development

[16] See Summary Report of Stakeholder Consultation Workshop on the BioSciences Facility For Eastern and Central Africa, 28-30 January 2004, Nairobi, Kenya. Available on-line via http://www.doylefoundation.org/africanbiosciences/stakeholder_consults.htm.

- facilitate access to advice and training on issues of biosafety and the management of intellectual property
- attract investments to biosciences in and for Africa from the public and private sectors and regional and international bodies
- serve as a platform for forging partnerships with other bioscience initiatives in other regions of Africa and worldwide

The expected outputs of this facility include training young African scientists to MSc and PhD levels in association with regional universities; continuing the professional development of mid-career scientists in African national agricultural research institutions and universities; reducing the brain-drain by providing a powerful incentive for African scientists abroad to return home and for those here to remain professionally active in the region rather than leaving for institutions in the developed world to pursue their careers; increasing the levels and quality of bioscience applications in Africa universities, national and regional research organizations and the private sector to solve agricultural problems; more effective management of intellectual property and biosafety regulatory systems in Africa; more relevant and effective new products and international public goods developed through bioscience applications specifically targeted at solving Africa's agricultural, health and environmental problems; and, state-of-the-art research laboratories for the biosciences, including genomics, proteomics, gene technology, immunology and containment facilities for safe genetic manipulation of plants and micro-organisms.

It is expected that the Biosciences Facility will have independent governance but will serve the priorities of the countries advocated by ASARECA, EAC, FARA and NEPAD. A board will be established with representation by all key stakeholders. The facility will work closely with the board of trustees and management of the International Livestock Research Institute (ILRI) to ensure complementary programmes and efficiency of operations, including sharing administrative and laboratory services. The facilities will be hosted by ILRI in Nairobi, Kenya.

African Agricultural Technology Foundation (AATF)

The African Agricultural Technology Foundation (AATF) is a new and unique African-led, not-for-profit foundation designed to facilitate and promote public-private partnerships to remove barriers that prevent smallholder farmers in Sub-Saharan Africa from gaining access to existing agricultural technologies that could help improve food security and reduce poverty. The foundation's objective is to identify and facilitate royalty-free transfer of technologies that meet the needs of these farmers in ways that address and resolve the concerns of both the technology providers and users.

The rationale behind setting up AATF is that Sub-Saharan Africa is reported to have the highest rates of hunger and malnutrition, and the least productive agriculture, in the world, yet there is a range of agricultural technologies, many of them generated by the private sector in developed countries, that could benefit African smallholder farmers. If made available and adapted to suit the conditions known to African farmers, these technologies could help improve agricultural productivity, increase food security, reduce poverty, improve agricultural trade and commerce and stimulate broader and more equitable economic growth. However, issues pertaining to the availability, licensing, testing, safety and liability of agricultural technologies serve as barriers to accessing these technologies by researchers, development specialists and resource-poor farmers in Sub-Saharan Africa. While a growing number of entities in the private sector wish to make their technologies available for humanitarian use in

Africa, their efforts to do so have been limited by concerns linked to intellectual property protecting commercially important markets—hence, the need for new and innovative approaches requiring the support and collaboration of both the public and private sectors. Thus, AATF plans to provide a one-stop shop for structuring and accessing agricultural technologies, materials and know-how, serving as a catalyst for reform and the creation of agricultural markets.

AATF already has several projects that are in the process of implementation. The foundation has identified eight problem areas that are common to a wide geographic area in Sub-Saharan Africa as priority targets for intervention, including the control of destructive weeds and insect pests in cereals, improvement of nutritional quality in maize, improvement of productivity in bananas, plantain and cassava, mycotoxins in food grains and drought resistance.

Headquartered in Nairobi, AATF was incorporated in the UK in January 2003 and registered in Kenya on 30 April 2003. The model was developed through consultation with African, North American and European stakeholders for over two years through an effort funded by the Rockefeller Foundation.

Networks for Genetic Resources

Both the Global Plan of Action and the FAO International Treaty recognize and underscore the importance of networks as mechanisms for their implementation. In Africa, most professionals in genetic resources, national programmes, genebanks and other collection holders are linked by networks, which provide an important mechanism for promoting the synergy and collaboration required to deal with complex issues related to the conservation and sustainable use of genetic resources. This sort of collaboration between networks has a wide range of benefits, including rationalization of resources, building synergies, building capacity and facilitating technology transfer. Furthermore, many of the networks, both regional and sub-regional, have played significant roles and have been instrumental in developing vital partnerships that are critical for enhancing capacity and sharing experiences and information with respect to genetic resources within the region.

SADC Plant Genetic Resources Centre (SPGRC)

The Southern Africa Development Community (SADC) is a sub-regional organization that consists of 14 countries in southern Africa: Angola, Botswana, Democratic Republic of Congo, Lesotho, Malawi, Mauritius, Mozambique, Namibia, South Africa, Swaziland, Seychelles, Tanzania, Zambia and Zimbabwe. SADC hosts a regional institution for plants and genetic resources to coordinate activities relating to *ex situ* plant genetic resources, namely, conservation, capacity building and exchange of information in the region.

The SADC Plant Genetic Resources Centre (SPGRC) is a non-profit inter-governmental institution established in 1988 as one way of achieving sustainable use of plant genetic resources through funding received from the Nordic countries. The aim of the Nordic support, which entails a 20-year funding stream, was to assist SACCAR in establishing the SPGRC and a network of National Plant Genetic Resources Programmes (NPGRPs).[17] The project has established a regional genebank, which houses the base collection at the SPGRC in Lusaka, Zambia and the national plant genetic resources centres in each member state, each holding

[17] Nordic funding support is structured such that there is 100% funding for the first 10 years and, subsequently, from the eleventh year, the member states will start making a steadily increasing contribution until the twentieth year, when they will assume 100% of the financial responsibility for the centre.

their respective active collection. The SPGRC has been very effective in rallying the member countries to engage in activities related to plant genetic resources, including collection, conservation, germplasm multiplication, characterization, evaluation, documentation and utilization as well as policy development. Another area where member countries have benefited much from the network is training and capacity building.

Genetic Resources Network for West and Central Africa (GRENEWECA)

GRENEWECA was established in February 1998 by 24 national plant genetic resources programmes of West and Central Africa under the auspices of CORAF in collaboration with FAO, IPGRI, IITA, WARDA and ICRISAT. The main objective of GRENEWECA is to contribute to the sustainable agricultural development of the member countries by judicious conservation and sustainable use of the diversity of their plant genetic resources through a well-coordinated network of functional national programmes, for which research priorities, action plans and national strategies are well articulated. The network is governed by a general assembly of all member countries and partners from regional and international organizations, a steering committee of 11 elected members and a secretariat based at IPGRI's Sub-Saharan Africa office in Cotonou, Benin Republic. With financial support from the African Development Bank, and in collaboration with national programmes in the sub-region, the network has initiated a broad range of activities, including collection, conservation, germplasm multiplication, documentation and utilization of genetic resources, as well as policy development and implementation.

East African Plant Genetic Resources Network (EAPGREN)

EAPGREN was established in November 1997, under the umbrella of ASARECA. Member states are Burundi, the Democratic Republic of the Congo, Djibouti, Eritrea, Ethiopia, Kenya, Madagascar, Rwanda, Sudan and Uganda. It is funded by SIDA with scientific input from IPGRI and the Nordic Gene Bank. EAPGREN's mission is to harness, conserve and promote greater use of plant genetic resources for food security, improved health and socio-economic advancement of rural communities.

Regional Institutions on Intellectual Property Rights[18]

In Africa, there are two regional organizations that specifically deal with intellectual property rights (IPRs). These are the African Regional Industrial Property Organisation (ARIPO), headquartered in Harare, and the African Intellectual Property Organisation (OAPI) in Yaoundé. However, the AU has also held discussions and carried out activities on IPR issues, especially with respect to genetic resources. This is exemplified in the African Model Law relating to access to genetic resources, benefit sharing, breeders' rights and the protection of community rights, as well as the Africa Group's common positions at the different international fora where the issues are being debated.

African Regional Industrial Property Organisation (ARIPO)

The African Regional Industrial Property Organisation is an inter-governmental organization created in 1976 at a diplomatic conference in Lusaka, Zambia. The Treaty creating ARIPO (known as the Lusaka Agreement) entered into force in 1978. It was originally conceived as

[18] Adapted from: Nnadozie, K. 2004. Intellectual property protection in Africa: an assessment of the status of laws, research and policy analysis on intellectual property rights in Nigeria and Ghana. African Centre for Technology Studies, Nairobi.

an organization for English-speaking African countries; however, in December 1985, the Lusaka Agreement was amended in order to open up membership to all African states that were members of the United Nations Economic Commission for Africa or the Organization of African Unity (OAU). It currently has 16 members: Botswana, the Gambia, Ghana, Kenya, Lesotho, Malawi, Mozambique, Namibia, Sierra Leone, Somalia, Sudan, Swaziland, Tanzania, Uganda, Zambia and Zimbabwe. States that maintain observer status in the meetings of its main organs are Angola, Algeria, Burundi, Egypt, Eritrea, Ethiopia, Liberia, Libya, Mauritius, Nigeria, Rwanda, Seychelles, South Africa and Tunisia.

Its objectives include the following:

- promoting the harmonization and development of industrial property laws, and matter related thereto, appropriate to the needs of its members and of the region as whole
- establishing common services or organs and developing industrial property activities affecting its members
- assisting its members in the development and acquisition of suitable technologies
- contributing to the evolution of a common view in industrial property matters

ARIPO has established a Patent Documentation and Information Centre in Harare, Zimbabwe, which provides its members and potential member states with technological information available from patent and patent-related documentation. It also has a Protocol on Patents and Industrial Designs known as the 'Harare Protocol', which came into force in 1984, establishing a system under which ARIPO grants or registers applications for patents and industrial designs on behalf of the contracting states designated in the applications. The result is that, provided the grant is maintained by payment of the prescribed annual maintenance fee, a patent granted by the office of ARIPO has effect in each designated State as a patent granted, registered or otherwise having effect under the applicable national law of that State.

African Intellectual Property Organisation (OAPI)

The Bangui Agreement was signed at Bangui in March 1977 and came into force in February 1982. It established the African Intellectual Property Organisation (OAPI) with headquarters at Yaoundé in Cameroon. As is the case with ARIPO and the Anglophone countries, OAPI was conceived primarily as the regional organization to establish a unified system of IPRs for Francophone African countries. In general, the harmonization of intellectual property laws among the Francophone African countries was less challenging than in Anglophone countries, largely because of their unique colonial experience. This includes the fact that individual countries had no intellectual property laws and were completely dependent on the French legal and administrative system. For the member states, OAPI serves both as the national industrial property office and as the central patent documentation and information centre. It administers the examination, granting and publication of patent and utility model applications for member countries. Consequently, any filing effected with one of the Member States is considered to be equivalent to national filing in each Member State.

The Agreement establishing OAPI contains nine annexes, which include statutory provisions regarding patents, trademarks, utility models, geographical indications, literary and artistic works and protection against unfair competition. However, the Agreement was revised in Bangui on 24 February 1999, with the revised Agreement and its annexes I to VIII entering into force on 28 February 2002. Annexes IX and X (which concern the layout designs of integrated circuits and new plant varieties, respectively) will come into force later.

While consisting only of Francophone countries, the dynamics of the context as well as the issues arising from OAPI in relation to issues emerging in other regional initiatives have far-reaching implications for regional integration and harmonization in Africa. One such issue is exemplified in the complexities concerning Article 27.3B of the TRIPS Agreement, requiring that plant varieties be protected by either patents or effective *sui generis* regimes, or a combination of both. While the African Union adopted the African Model Law in 1998 as the model for fulfilling this obligation, among other things, under the Bangui Accord, the members of OAPI undertook to adopt the 1991 UPOV Act as the model for fulfilling this requirement. The accord, signed by OAPI's 15 member states in February 1999, introduces—for the first time—a regime of intellectual property rights on seeds and plant varieties and is considered to be potentially at odds with the AU model legislation. Efforts are underway to try to harmonize approaches region-wide, as well as positions during international negotiations covering the relevant issues.

Cooperation between ARIPO and OAPI

Article V of the Lusaka Agreement mandates ARIPO to establish and maintain a close and continuous working relationship with the United Nations Economic Commission for Africa (ECA), WIPO and the OAU. Article VI further gives discretion to ARIPO to cooperate with states that are not members of ARIPO, and with organizations, institutions and bodies (cooperating states and organizations) that are willing to assist ARIPO in achieving its objectives.

To this end, ARIPO has executed two key cooperation agreements with OAPI. The first of these is the ARIPO-OAPI-ARCT-WIPO Quadripartite Agreement of 22 July 1985.[19] Under the aegis of this agreement, ARIPO and OAPI have collaborated in the dissemination of technological information among their members, promoted inventive activities, organized promotional seminars on intellectual property, heightened the intellectual property awareness of African economic organizations and co-organized the African Invention and Technological Innovation Fair. Both institutions also concluded a cooperation agreement in November 1996.

Outside the context of these two cooperation agreements, the OAU has, on several occasions, urged its member states to support the activities of these two organizations. For example, at its second extra-ordinary session held in Lagos on 28 and 29 April 1990, which was devoted to the economic situation in Africa, the Assembly of Heads of States and Governments of OAU adopted a Plan of Action for the Implementation of the Monrovia Strategy for the Economic Development of Africa (the Lagos Plan of Action). Among other things, the Lagos Plan of Action called for measures to overcome the lack of information related to the selection, acquisition and use of technology options by 'supporting and strengthening African regional organizations in the field of patent information and documentation', a clear reference to ARIPO and OAPI. Also, at its Sixth Session, held in Mombassa in May 1998, a policy statement was presented for consideration for adoption by the Assembly of Heads of State and Government. The statement, *inter alia,* urges African countries to support the two African regional intellectual property organizations (ARIPO and OAPI) and accelerate their accession to the two organizations. However, efforts to integrate or merge the activities of the two organizations are yet to be seen.

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[19] Report of the Meeting of the Consultative Committee on the Implementation of the Quadripartite Agreement between ARCT, ARIPO, OAPI and IMPI, Ninth session. 2000. Available on-line: http://www.wipo.int/africa/en/partners_org/quadripartite/doc/report_9.doc.