

Natural resource base of economic and social development



WSSD recognized that human activities are having an increasing impact on the integrity of ecosystems that provide essential resources and services for human well-being and economic activities. In this regard, the JPOI states that managing the natural resources base in a sustainable and integrated manner is essential for sustainable development. It notes that to reverse the current trend in natural resource degradation as soon as possible, it is necessary to implement strategies, which should include targets adopted at the national and, where appropriate, regional levels to protect ecosystems and to achieve integrated management of land, water and living resources. In doing so, the Plan calls for strengthening regional, national and local capacities.

5.1 Sustainable land management

Land is a valuable asset and lies at the heart of social, cultural, spiritual political and economic life in most of Africa. Land and natural resources are key assets for economic growth and development. In fact, most African economies continue to rely heavily on agriculture and natural resources for a significant share of national income, food needs, and employment. In practice, land rights claimed and allocated by governments often conflict with the land tenure practices of local communities. As a result, land tenure and shelter are insecure for many Africans in both urban and rural areas. In addition, land remains extremely inequitably distributed especially in the former settler economies of southern Africa, with the majority of rural people excluded from access to the most productive and valuable land.

Urban and peri-urban lands are more dynamic, volatile and contested (prone to disputes). Some African countries employ forced evictions, which often and largely affect vulnerable groups (both rural and urban) such as women, indigenous people, children and the poor. The contribution and participation of vulnerable groups are often ignored in the process of expropriation, eviction and relocation. The emphasis on title / deed and individual freehold has further eroded land security of tenure for many Africans in both rural and urban areas. Land is often the source of many conflicts in Africa, thus leading to complex challenges in managing post-conflict land rights which are often addressed through arduous reform measures that involve redistribution, restitution, relocation, etc. If and when these are not successful, resurgence of conflicts is inevitable.

Reliance on land as a principal source of livelihoods and as a basis for economic development in Africa is likely to persist in the foreseeable future. This calls for the formulation and implementation of appropriate land policies for a better livelihood of the poor, as well as increased private investment in agriculture. In fact, the importance of land in Africa is multifaceted and central to the achievement of the MDGs. Sound policies and effective land administration and information systems are necessary to addressing Africa's twin land-related

challenges of (a) facilitating investment and generation of economic opportunities, and (b) guaranteeing secure land access to the rural and urban poor as a basis for improved livelihoods, food security and poverty reduction.

The JPOI objective on land is to promote and support efforts and initiatives to secure equitable access to land and clarify resource rights and responsibilities, through land and tenure reform processes that respect the rule of law and are enshrined in national law, and provide access to credit for all, especially women. The Africa chapter states that efforts and initiatives should support economic and social empowerment and poverty eradication, as well as efficient and ecologically sound utilization of land; that enable women producers to become decision makers and owners in the sector, including the right to inherit land. The first pillar of NEPAD's Comprehensive Africa Agricultural Development Programme (CAADP) is extending the area under sustainable land management and reliable water control systems.

5.1.1 Concrete actions taken and progress made

An important regional initiative is the AU/AfDB/ECA Initiative on a Pan African Framework on Land Policy for Securing Rights, Enhancing Productivity and Improving Livelihoods. Cognizant of the varied stages and successes in policy and administrative reforms of African countries, the initiative recognizes exchange of information and lessons, access to technical expertise and reviews of on-going processes, as key to catalyzing reforms across the continent. With the support of UN-HABITAT, benchmarks and indicators of land policy and land reforms are being developed through this initiative, to allow for monitoring and evaluation of policy development and implementation processes and their outcomes. Several African countries are benefiting from the Global Land Tool Network (GLTN), a UN-HABITAT and its partners initiative that seeks to document best land practices and tools in the region. The Network is also active in improving knowledge management in the land sector, through training capacity building of institutions, civil society organizations, professional associations and international organizations.

Many African countries are adopting innovative land management, especially in the area of continuum of land rights. There is an increasing recognition of the many ways of securing tenure, especially for the poor, women and indigenous people in Africa. In so doing, countries are acknowledging that rights to hold, occupy, use and deal with land for many Africans are beyond title and can be safeguarded through a range of means such as group / customary / tribal land rights (e.g. Botswana and Namibia); tenancy agreements (e.g. residential license in Tanzania), certificates (Ethiopia); written agreement signed by an authority, (e.g. between buyer and seller); and other proofs such as electricity and water bills and tax receipts. This flexibility of securing land rights and access facilitates the integration of rural migrants into city and town centers, protect against forced eviction, promote investment on land (using local resources), and more importantly reduce conflicts over lands. Several African countries are making progress and innovating in the continuum of land rights. Subregional highlights are provided below.

Southern Africa: SADC has established a Land Reform Technical Support Facility, intended to provide access to expert advice, training and technical support to its member States on different aspects of land reform. In addition there are a number of national and regional civil society network organizations addressing land and natural resource rights and policies in the region.

West Africa: Efforts have been made to recognize and register customary rights in countries, such as Niger, Benin and Cote d'Ivoire, and their incorporation into common law in Ghana. Many of the francophone countries, have introduced "Gestion de Terroir" programmes to improve the management of village lands and natural resources. In the Sahelian zone, some countries have developed Pastoral Code–framework laws. Farmer organizations are also active players in land debates, and the intergovernmental organization CILSS

has been active in fostering convergent land policies and exchange of lessons learned. LandNet, a civil society network, has active national networks in a number of countries, including Burkina Faso and Togo.

Eastern Africa: East African countries are faced with the colonial legacy of dualistic tenure systems and have all gone through some sort of policy process seeking to address this situation. Post-independence Kenya redistributed some of its white commercial farmland and adopted a comprehensive land-titling programme, which remains incomplete and problematic. The country is now reforming its land institutions and management systems. In the late 1990s, both Uganda and Tanzania enacted new land laws granting security to customary land holdings, and establishing decentralized land administration arrangements. Kenya, Uganda, Tanzania and Rwanda all have active civil society Land Alliances or LandNet chapters, which address common issues through the LandNet East Africa regional network. Additionally, the sub-region has civil society organizations concerned with gender and land.

Central Africa: There is limited research and data availability on land issues in central African countries. These countries are not currently undertaking land policy reform processes. But just like the rest of Africa, they suffer from the contradictions of inherited colonial land policies and customary tenure practices. Cameroon is the only country in the sub-region that has embarked upon land reform activities. In 2004, the country established a national committee to assess the 1974 land ordinances and propose a new land reform and land tenure reform with a view to: facilitating the right to land ownership by the majority of the population; restoring the viability and credibility of land titles; responding to the needs of economic operators in various sectors; and improving and facilitating judicial procedures for land access and titling.

North Africa: Between 1950 and 1975, North African countries undertook major land reforms achieving significant benefits in favor of peasant farmers, landless workers and pastoral nomads, substantially improving access to European export markets, reducing poverty and the high rates of malnutrition, illiteracy and landlessness, which had prevailed in the low income traditional rain fed agricultural sector. As land distribution and rural investment waned during the 1970s and 80s, inequality became characteristic of North African agriculture, and richer farmers and those with larger land holdings started benefiting disproportionately from agricultural services. This resulted in large numbers of landless rural laborers, whose livelihoods are threatened by population growth, the falling quality of agricultural land and the withdrawal of State support during the structural adjustment period of the 1980s and 90s.

5.1.2 Challenges and constraints

Constraints to land policy reforms include: inappropriate institutional frameworks; a lack of skilled human resource capacity; shortages of financial resources, both within national budget and donor aid allocations; contestation over the use of increasingly scarce land resources between development actors; and uncertainties about exactly what type of policies can deliver the right balance between improving livelihoods, protecting the poor and raising opportunities for economic growth and investment.

Land fragmentation and the associated conflict disputes (especially in densely populated areas, most urban centers), are proving to be quite challenging, particularly in densely populated and land-locked countries. Furthermore, land in countries coming out of, or in conflict, or neighboring such countries, is a pressing and urgent issue. These include the Democratic Republic of Congo, Somalia, Liberia, Cote d'Ivoire, Sierra Leone, Rwanda, Burundi, Sudan, Chad and Uganda. It is becoming urgent to assist these countries to formulate and implement housing and land policies for the resettlement of refugees and internally displaced persons.

5.1.3 Lessons learned and the way forward

The overwhelming presence of state in land administration- a legacy of the colonial period needs to be revisited. There is need to further decentralize land governance and to recognize customary land rights and institutions. This will promote the safeguarding of the commons and the adoption of new paradigms of land management. There is also need to promote professionalism and good governance in land administration and to further explore and promote alternative systems of land rights beyond the complex and expensive system of land titling. This should be complemented by the development of appropriate land dispute mechanisms. Stakeholders must be effectively engaged at all levels of land policy development and implementation, and more resources should be mobilized for the implementation of land reform programmes. Furthermore, well-targeted institutional and capacity strengthening initiatives should be put in place. These include:

A land institutions facility to support institutional change, development and decentralization in government land agencies (such as Department of Lands and District Land Boards) to further promote good governance in land administration and management;

A programme of training and human resources development to generate long-term support and capacity building for African higher education and training institutions to develop the human resources required for land policy and land reform in Africa during the 21st century;

A research development programme to develop an Africa wide research framework on land to which a variety of research organizations, networks, donors and international institutions can contribute to fill knowledge gaps and support ongoing land policy / implementation processes;

A civil society support facility to support advocacy, public debate and consultation in country and regional networking and lesson learning, and build NGO and CSO capacity to assist governments in land policy implementation;

Greater advocacy awareness on the negative impacts of forced evictions and promotion of regulations that protect the fundamental rights of citizens to land, and their use; and

Greater awareness and sharing experience in implementing the continuum of land rights, which promotes equity (especially for indigenous people), is pro-poor and gender sensitive.

5.2 Sustainable mineral resources development

Africa's endowments of minerals are of world significance. The continent possesses more than 40 percent of the world's reserves of Platinum Group Minerals (PGMs), phosphate, gold, cobalt, vanadium, vermiculite, chromite, manganese, and diamonds. Africa ranks first in the production of platinum, gold, chromite, vanadium, cobalt, and diamonds. Reserves of other minerals are also important. Africa's importance as a source of oil, gas and other energy resources is increasing. In 2006, its gas and oil reserves were about 7.9 and 8.6 percent of the world's total, while production was at 10 and 8 percent of the world's production, respectively. The continent also produces about 16 percent of the world's uranium. Coal resources are concentrated in Southern Africa, with South Africa accounting for five percent of proven world coal resources and 98 percent of Africa's output.

The economies of many African countries depend on the extractive industry (including oil and gas). This dependence is more reflected in export earnings and contribution to GDP. The extractive industry constitutes Africa's largest export category. It accounted for more than 50 percent of Africa's exports and 65 percent of all FDI during the 1990s. Its contribution to GDP is also high, reaching more than 30 percent in countries like Botswana. However, the contribution to employment generation in large-scale mines is relatively low. This is mainly due to the capital-intensive nature of the industry. Employment figures in artisanal and small-scale mining are significant. The International Labour Organization (ILO) estimates that in Africa, more than three million people are directly and indirectly employed in this sector.

The JPOI notes that mining, minerals and metals are important to the economic and social development of many countries. It further notes that enhancing the contribution of the sector to sustainable development include actions at all levels to: support efforts to address the environmental, economic, health and social impacts and benefits of the sector using the lifecycle approach; enhance the participation of stakeholders, including local and indigenous communities and women; and foster sustainable mining practices through the provision of financial, technical and capacity-building support to developing countries.

Further, in its Africa chapter, the Plan calls for support to enhance the contribution of the industrial sector, in particular mining, minerals and metals, to the sustainable development of Africa by supporting the development of effective and transparent regulatory and management frameworks and value addition, broad-based participation, social and environmental responsibility, and increased market access in order to create an attractive and conducive environment for investment. These complement the NEPAD objectives on mining, which are: to improve the quality of mineral resource information; to create a regulatory framework that is conducive to the development of the mining sector; and to establish best practices that will ensure efficient extraction of natural resources and minerals of high quality. Concrete actions taken and progress made

Regional initiatives

In line with the above, African Ministers responsible for mineral resources development, in March 2002, established the African Mining Partnership (AMP), as a platform to implement the mining chapter of NEPAD. The AMP, as a high-level ministerial forum, aims at influencing the agenda of mining in Africa with a view to achieving sustainable development. The AMP currently runs projects on beneficiation, artisanal and small-scale mining, environment, human resource development, and promotion of foreign investment and indigenous/local participation in mining ventures. There has been some progress in the implementation of most of the projects. Furthermore, the AMP has evolved into a forum for African countries to discuss and take common positions on emerging issues of importance to Africa. A good example is AMP's stance on the EU's new regulations on chemicals - the Registration, Evaluation and Authorization of Chemicals (REACH), which implementation could have adverse social and economic impacts on mineral-dependent African countries. Negotiations are still ongoing.

The establishment in 2005, of the Communities and Small-scale Mining (CASM)-Africa, was of equal importance for Africa's efforts to implement the NEPAD chapter on mining. Through partnership with CASM (Global), CASM (Africa) will be a key conduit and platform for establishing critical in- country and locally owned programmes, and influence the international agenda based on African experiences. CASM (Africa) will assist with on-the-ground implementation of artisanal and small-scale mining projects and activities. The Africa Mining Network (AMN) officially launched in 2005, represents another important initiative to facilitate information exchanges on mineral resources development in Africa- a key objective of NEPAD.

The NEPAD Secretariat is championing a new Spatial Development Programme (SDP) aimed at configuring, prioritizing, and promoting inter-related infrastructure and large-scale natural resources projects. The SDP is

anchored on the exploitation of Africa's natural resources endowments, in particular minerals. The high rents that minerals currently generate boost the economic/business rationale for infrastructure projects making them more viable. In addition, using a clustering process will enable other sectors with less rents to benefit from the larger-scale anchor project by generating a pipeline (the corridor principle) of other credible and sound projects in an integrated manner. This would maximize linkages between the anchor project and the local economy; promote value addition and local beneficiation of raw materials; and foster the development of Small and Medium-scale Enterprises (SMEs) that could enter the inputs, goods and services market. The SDP was presented and endorsed at the Sector Stakeholder Workshop of the NEPAD Medium to Long-term Strategic Framework Infrastructure Study recently held in Addis Ababa, Ethiopia, from 26-28 July 2007.

On capacity building, special reference should be made to efforts made by the Southern and Eastern Africa Minerals Center (SEAMIC), an ECA-sponsored Center of Excellence based in Dar-es-Salaam, Tanzania established in 1977, to facilitate training, research, and development on industrial minerals applications, and to provide analytical services and consultancy for mineral identification and environmental assessment to its member States. The Center has seven members, namely Angola, Comoros, Ethiopia, Kenya, Mozambique, Tanzania, and Uganda. In May 2007, the Governing Council of SEAMIC decided to open membership to all African countries and to other stakeholders, including the private sector. Given the dearth of Centers of Excellence in the mineral sector in Africa, outside South Africa, this decision could have a positive impact on the continent.

On the policy side, at sub-regional level, there have been efforts to improve harmonization of mineral policies, standards, and regulatory and legislative environments, namely by SADC and UEMOA. In 2004, UEMOA adopted a common mining policy for the subregion. Subsequent efforts to improve harmonization in the subregion include the drafting in 2006, of a mining code that defines the mining titles, a model mining agreement, and the fiscal regime to be applicable in UEMOA member States. UEMOA policy organs are expected to approve the code soon. Similarly, in March 2007, 12 SADC member States adopted a mining sector harmonization framework that should, in the longer term, lead to convergence and a harmonized policy regime in the minerals sector in the sub-region.

CSR in the mining sector

Efforts to modify production and consumption patterns have been circumscribed mainly to country level. In this respect, South Africa has formulated legislation to promote local beneficiation and value addition of minerals. Angola and Namibia have started sizeable diamond polishing units. Inspired by the South African Mining Charter on Black Economic Empowerment, Namibia, Zimbabwe, and Zambia are pursuing strategies to increase the participation of local entrepreneurs and other stakeholders in the development of their mineral resources. Tanzania is reviewing clauses in its mining codes and fiscal regime to maximize local benefits.

Special initiatives

A key event on efforts to build consensus on emerging issues at continental level was the 2007 Big Table on "Managing Africa's Natural Resources for Growth and Poverty Reduction" co-organized by ECA and AfDB on 1 February 2007, in Addis Ababa, Ethiopia. The Big Table is an initiative designed by ECA to promote, in an informal environment, frank and constructive dialogue between senior African policy makers and their OECD counterparts. The 2007 Big Table discussed the challenges of effectively managing Africa's natural resources for growth and poverty reduction and framed an agenda for future action. It was attended by 52 participants including Ministers and senior officials from 11 African countries, high-level representatives from OECD countries, regional and international organizations (ECA, AfDB, AUC, IMF, OECD-DAC, World Bank), research centers, private sector and NGOs. The outcomes of the meeting could have a lasting impact and influence debate on natural resources issues on the continent in the foreseeable future, as evidenced

by the tacit endorsement received at the July 2007 Summit of African Heads of State and Government, which directed the AU Commission to convene a meeting of African Ministers responsible for natural resources development to further reflect on issues pertaining to the exploitation and management of Africa's natural resources as a catalyst for development.

5.2.1 Challenges and constraints

Mineral resources are non-renewable, finite and unevenly distributed across space. The wealth that they generate is transient and vulnerable to rent seeking. In addition, their exploitation is often capital-intensive rather than labor-intensive and creates enclave economies that have little or no links with the wider national economy. The above attributes generate daunting policy challenges that are difficult to manage and overcome.

One of the major challenges of sustainable development in the context of non-renewable resources (such as minerals) is to create (The creation challenge) a viable, integrated and diversified industry throughout the value chain, and sustaining mineral wealth- long after the minerals have been depleted- without compromising environmental, social and cultural considerations, and ensuring a regulatory framework that encourages wealth creation. This challenge is relevant to most African mineral-producing countries.

Another important challenge is to be able to invest (The investment challenge) windfall revenues to ensure lasting wealth and deciding how much ought to be saved and how much should be invested and in what form. Distributing (The distribution challenge) benefits equitably, while balancing and managing conflicting local and national-level concerns and interests and deciding what form the allocation should take to promote pro-poor and broad-based growth poses an equally difficult challenge.

The governance and macroeconomic challenge of ensuring sound systems of governance and a stable macroeconomic environment that curb rent seeking and corruption, manage the adverse impacts of resource rents such as the Dutch Disease, foreign exchange rate appreciation, and commodity price volatility, and enhance public interest in wealth conservation overwhelms most African countries. This is particularly true because many African countries have capacity gaps (The capacity challenge) at all levels.

5.2.2 Lessons learned and the way forward

There seems to be a growing realization that Africa's highest short to medium term potential for growth and development lies in its mineral resource endowment. This is particularly true now because of the commodity price boom, fuelled by perceptions of global resource scarcity and the entrance in the commodity market of new global resource-demanding players such as China and India. Stakeholders at all levels have also recognized that to better harness the full potential of its mineral resources potential, African States must strengthen their governance systems, and reinforce institutional capacity, including capacity to negotiate mining contracts.

Civil society organizations are gaining strength, and consultation with local communities in the process of developing mining projects, is becoming a standard practice. Ownership and local participation are also becoming critical. To respond to this, several countries are reviewing their mineral policies and legislation. This may become a continental trend.

In anticipation of this, there is need to undertake a review of current mining regimes at continental level with a view to developing a template for future mining laws and regulations in Africa. There is also need to establish mechanisms to promote capacity building, exchange of experiences, identification and dissemination of best practices, and creation of an appropriate knowledge base on mineral resources management.

Strategic thinking and policy innovations, new management techniques, broad-based capacities especially in science and technology, and adaptation of new and emerging technologies are needed for Africa to better harness its natural resource wealth to promote growth and poverty reduction.

5.3 Freshwater resources

Africa is generally endowed with abundant water resources that amounts to nine percent of the global freshwater resources. There is however uneven distribution of this resource, between areas of severe aridity with limited freshwater resources like the Sahara and Kalahari deserts in the northern and southern parts, to the tropical belt of mid-Africa with abundant freshwater resources. This distribution also follows the pattern of rainfall variability – in time and space – in the region (UNEP, 2006). Most water resources occur in the form of rivers, lakes, wetlands, and limited but widespread groundwater. Much of this is located in the Central African sub-region. Africa has 17 major rivers with catchment areas greater than 100,000 km²; and more than 160 lakes larger than 27 km², most of which are located around the equatorial region and sub-humid East African Highlands within the East African Rift Valley System. It is estimated that Lake Tanganyika alone can meet the annual basic water supply needs of 400 million people through a less than one percent yearly withdrawal of its volume. The continent also has a huge potential for energy production through hydropower development, such as the Inga Dam Site on the Congo River.

Groundwater in Africa occurs mainly as precipitation infiltration into aquifers. An inventory compiled in 2002 (UNESCO, 2004) revealed that Africa is endowed with 38 large and small transboundary aquifers, the largest of which is the Nubian Sandstone Aquifer System (NSAS) shared by Chad, Egypt, Libya and Sudan estimated to contain 3,730,000 billion cubic meters in freshwater reserve, an annual recharge estimated at only 15,340 billion cubic meters, and current use estimated at 2,173 billion cubic meters per annum. In the case of the Iullemeden aquifer extending over Niger, Nigeria, Mali, Benin and Algeria, the recharge area is almost entirely located in Nigeria where the rainfall exceeds 500 mm per annum, while a significant part of the discharge area is located in Niger in humid valley bottoms and in the Niger River itself.

In spite of its abundant rainfall, water scarcity is growing in Africa. It is therefore projected that by the year 2025, twenty-five African countries will be subjected to water scarcity or water stress. The scarcity is due to the rapidly increasing demand for water in most countries as a result of population growth and economic development. Africa has the highest population growth rate in the world. In addition, freshwater withdrawals for agriculture are predicted to rise by more than 30 percent over the next 20 years in response to growing demand for food. From less than three percent in 1950, domestic water use is predicted to increase to six percent of water withdrawals by 2025 (ECA, 2003). The other factors responsible for water scarcity are watershed degradation, pollution of water resources and inefficient water use.

Furthermore, rising costs of water production, and the proliferation of unplanned human settlements have aggravated inequitable access to water resources. In addition Africa is regarded as the most vulnerable region to climate change. The Northern and Southern African regions are expected to experience a decline in runoff and water availability resulting in drought and desertification. Recent studies have shown that droughts and floods have increased in frequency and severity over the past 30 years. Long-term precipitation records from the Sahara give a clear indication of declining precipitation in that region (ECA, 2003).

The JPOI outlines a number of actions required to attain sustainable water resources management. It calls for inter alia interventions to promote priority action by Governments, with the support of all stakeholders, in water management and capacity building at the national level and, where appropriate, at the regional level. It also calls for the promotion and provision of new and additional financial resources and innovative technologies to implement Agenda 21 water resources commitments.

With specific reference to Africa, the JPOI calls for actions to promote integrated water resources development and optimize the upstream and downstream benefits, the development and effective management of water resources across all uses and the protection of water quality and aquatic ecosystems. It encourages initiatives to; develop and implement integrated river basin and watershed management strategies and plans for all major water bodies; and strengthen regional, subregional and national capacities for data collection and processing and for planning, research, monitoring, assessment and enforcement. These support the NEPAD water objectives which include; to plan and manage water resources to become a basis for national and regional cooperation and development; systematically address and sustain ecosystems, biodiversity and wildlife; and cooperate on shared rivers.

5.3.1 Concrete actions and progress

Regional initiatives

The Africa Ministerial Council on Water (AMCOW) and the Africa Water Task Force were established to enhance cooperation and coordination and promote the development and implementation of coherent policies and strategies for water resources management. Additionally, the African Water Vision 2025 has been developed and launched. The Vision sets targets for sustainable development and management of water resources in the region. The Vision objectives include to: making equitable and sustainable use of Africa's water resources; ensuring sustainable development and management of water resources for all; developing water resources for food security and agricultural development; shared management of international water basins to stimulate efficient mutual regional economic development; and ensuring adequate water for life-supporting ecosystems (UN Water Africa, 2006).

The African Water Facility, an initiative led by AMCOW to mobilize and apply resources for the financing of water infrastructure and water investment facilitating activities in Africa, approved three small capital investment pilot projects in 2006 to contribute to the MDGs, as well as eleven other projects related to programme/project preparation and improving the enabling of Integrated Water Resources Management environment (AMCOW, 2007). Additionally, a Short-Term Action Plan (STAP) has been prepared under the auspices of NEPAD. Objectives of STAP include strengthening the enabling environment for effective cooperative management and development of transboundary water resources, and initiating the implementation of prioritized programmes. The implementation of STAP is focused on seven river basins, i.e. Niger and Senegal in West Africa; Congo and Lake Chad in Central Africa; Nile in Eastern Africa; and Zambezi and Okavango in Southern Africa.¹

At subregional level the SADC Protocol on Shared Watercourses, and the Nile Basin Initiative (NBI) have been developed and operationalized.² In order to develop a basin-wide framework for actions to address high priority trans-boundary environmental issues within the context of the NBI's Shared Vision Programme, the Nile Transboundary Environmental Action Project (NTEAP) is being implemented under the auspices of UNDP. The NTEAP involves Burundi, Democratic Republic of Congo, Egypt, Ethiopia, Kenya, Rwanda, Sudan, Tanzania, Uganda and Eritrea (observer status) (UNDP 2007). Furthermore, in collaboration with the World Bank, UNDP is implementing the Senegal River Basin Water and Environmental Management Project whose objective is to provide a participatory strategic environmental framework for the environmentally sustainable development of the Senegal River basin and to launch a basin-wide cooperative programme for transboundary land and water management (UNDP, 2007). The Lake Chad Basin Commission has made significant contributions in the area of agriculture, fisheries and livestock. In addition, the Global Environment Facility (GEF) is actively implementing projects on the reversal of land and water degradation trends in the Lake Chad and Niger Basins.

¹ http://www.afdb.org/portal/page?_pageid=473,969995&_dad=portal&_schema=PORTAL

² Ibid

The Northern Sahara Aquifer System (NSAS), where the underground outflow of the deep continental intercalaire aquifer is a source of recharge for the coastal Jifarah aquifer, is a good example of international cooperation on management of shared aquifer resources. In addition, IFAD funded a programme for the development of a management system to prevent over extraction of the Nubian Sandstone Aquifer System shared by Chad (where it is not yet commercially exploited), Libya, Egypt and Sudan. There is also an ongoing UNESCO/ "Observatoire du Sahel" (OSS) project funded by UNEP/GEF for data and information for better management of the Iullemeden aquifer.

National actions

Water reform programmes are being implemented at national and watershed levels. An increasing number of countries are developing new policies, strategies and laws for water resource development and management, based on the principles of Integrated Water Resources Management (IWRM) aimed at decentralization, integration and cost-recovery. For example, in Ethiopia a process has been initiated to develop an IWRM plan to be implemented in conjunction with the process of decentralization in the country. To this end, the country has developed various laws, policies and strategies.³ Water sector reforms, which are in line with the IWRM philosophy, are also underway in over half of the southern African countries. Zimbabwe embarked upon its water reforms in 1995 to achieve equity in access to and management of productive water (Manzungu, 2004).

Countries that are carrying out water sector reforms are also restructuring their institutional and legal frameworks. This includes setting up river and lake catchment and basin organizations.⁴ For instance, through partnership interventions for the implementation of the Strategic Action Programme for Lake Tanganyika, the Lake Tanganyika Authority has been created. Other activities include demonstration sites for sustainable catchment management in the Democratic Republic of Congo, Tanzania and Zambia; support to wastewater treatment plants in Burundi and Tanzania; and establishment of a lake monitoring system. Partners include UNDP, FAO-GEF, United Nations Office for Project Services (UNOPS), AfDB-Nordic Development Fund (NDF) and IUCN (UNDP 2007). In Mozambique a stakeholder institution has been established in the south, in the form of the Regional Water Authority (RWA) (Manzungu, 2004).

International community support

Development partners continue to play an important role in water resources management, as demonstrated by the following examples. Under the UNDP-GEF International Waters Programme, US\$ 98.53 million has been invested in Africa to assist countries in working jointly to identify, prioritize, understand, and address the key transboundary environmental and water resources issues of shared water bodies. This includes grants of US\$ 8.80 million for NTEAP, US\$ 7.250 million for Senegal River Basin Water and Environmental Management Project; and US\$ 13.500 million for Lake Tanganyika Integrated Management Programme (UNDP, 2007). The World Bank provides substantial support to the water sector in the region. The Bank provides financial support to NEPAD, including financing the Senegal River Basin multi-purpose water development project. Integrated water resource management plans at river basin levels are being developed with the support of ECA and financial assistance from AfDB and the European Union Water Initiative. ECA is also enhancing the capacity of members to develop and manage water resources by promoting the implementation of Africa Water Vision 2025. Furthermore, ECA provides assistance to Member States, RECs and river basin organizations on integrated river basin and watershed management strategies and plans (ECOSOC, 2007).

³ Improving freshwater management in Africa. http://www.eoearth.org/article/Improving_freshwater_management_in_Africa

⁴ Ibid

5.3.2 Challenges and constraints

Among the challenges and limitations hampering progress towards sustainable management of fresh water resources in the region are: weak national institutions with poor technical and financial capacity and in some cases fragmented or overlapping functions and actions; lack of adequate political and financial support from member countries, thereby affecting the performance of a number of regional and basin level institutions; low investments in water resources management, including pollution control and catchments management; and inadequate legislative reforms and enforcement. The other major limitation is the serious decline in the networks of hydrological observing stations and in the quality of data collected in Africa. This has made it difficult to provide adequate and accurate data and information needed for water resources assessment and development activities at national and basin levels, and to provide essential inputs into regional and international programmes. Climate change with its projected devastating impacts on the water resources in the region is a looming and serious threat to sustainable water resources management in the region.

On groundwater management, there are a number of issues, including the inadequacy of high quality information systems on the functioning of the groundwater systems, based on mathematical models capable of simulating development scenarios and predicting their medium and long term effects in terms of natural outflow, environmental impact, water level and water quality change.

5.3.3 Lessons learned and the way forward

Effective stakeholder participation depends on a conducive governance regime at the national level. Strong and transparent institutions, as well as legal frameworks for WRM need to be established at national level. Furthermore, IWRM plans must take into account and be incorporated into the overall economic development frameworks and into poverty reduction strategies.

There is need to promote the establishment of River/Lake/Aquifer basins to manage transboundary basins, where they do not presently exist. There is also need to strengthen, as well as to improve the efficiency and effectiveness of existing River Basin Organizations (RBOs), in order to achieve sustainability in water resources conservation, protection and development, particularly in view of the potential ominous impacts of climate change on this valuable and scarce resource.

Although it is essential to manage water resources at national and sub-regional levels, the management of water resources at the local level is equally important. Countries in the region are therefore encouraged to pursue effective decentralization that fosters ownership and participation in decision-making and accountability to the local communities.

There is need to set up an information exchange mechanism on groundwater development processes in each country and the local effects of such developments; and the establishment of allocation rules to be specified and approved by all parties to the transboundary aquifers in the region.

Partnerships between the public sector and civil society and the private sector should be established or strengthened to improve the implementation of community projects, particularly targeting the poor.

Capacity for effective water resources management is needed at all levels. Capacity building should therefore be systematically included in IWRM plans. Scientific research, data collection and knowledge management capacity on water resources management need to be integrated and expanded to support improved policy making, public awareness and multi-stakeholder mobilization.

African women have a much less influential role in the management and decision-making processes related to water resources than men, in spite of the pivotal role they play. Effective gender mainstreaming should therefore be pursued at all levels in decision-making, strategy and programme planning and implementation.

Support should be increased to enhance implementation of the STAP and to enable NEPAD to assist African countries to meet their goals and objectives in water resources management as set out in the Africa Water Vision 2025.

Political will and strategic approaches are essential and should be strengthened to promote effective IWRM.

5.4 Coastal and marine resources

Africa's mainland and island states have rich and varied coastal and marine resources, both living and non-living. The coasts range from deserts to fertile plains to rain forests, from coral reefs to lagoons, and from high-relief rocky shores to deeply indented estuaries and deltas. Their marine environments include the open Atlantic and Indian oceans and the almost landlocked Mediterranean and Red seas. Continental shelves, where waters are less than 200 meters deep, in some places extend more than 200 kilometers offshore, while elsewhere they are almost absent (UNEP, 2006).

The biodiversity of the coastal zone is an important resource and there are many designated protected areas, both wetland and marine. The coral reefs, sea-grass beds, sand dunes, estuaries, mangrove forests and other wetlands that occur around many shores provide valuable services for humanity, as well as crucial nursery habitats for marine animals and sanctuaries for endangered species. During the last decade or so, substantial oil and natural gas resources have been discovered offshore, particularly in West Africa. And many of the coastal sediments of Southern and Eastern Africa yield mineral resources. Africa's coastal and marine resources have traditionally supported livelihoods through subsistence fisheries, agriculture and trading. Nowadays, the coastal areas are the loci of rapid urban and industrial growth, oil and gas development, industrial-scale fisheries and trade. The natural coastal assets have also supported growth in tourism. All these activities have substantial economic benefits, including the creation of many jobs for men and women. While there is a general trend of population increase in the coastal areas, the coastal cities are the principal growth nodes (ibid).

The JPOI targets on coastal and marine resources include encouraging the application by 2010 of the ecosystem approach for the sustainable development of the oceans, and establishing by 2004 a regular process under the United Nations for global reporting and assessment of the state of the marine environment. Specifically, the Africa Chapter of the Plan states that achieving sustainable development includes developing projects, programmes and partnerships with relevant stakeholders and mobilizing resources for the effective implementation of the outcome of the African Process for the Protection and Development of the Marine and Coastal Environment. The chapter also calls for support to the development and implementation of national policies and programmes, including research programmes and development plans of African countries to sustainably develop their fisheries resources. NEPAD acknowledges the role of sharing best practices for optimally protecting and utilizing coastal resources.

Concrete actions taken and progress made

General initiatives and actions

Most coastal countries are signatories to one or more multilateral environmental agreements (MEAs) that deal with marine and coastal management issues. These MEAs include the Barcelona Convention, the Jeddah Convention, the Nairobi Convention and the Abidjan Convention, as well as the International Convention for the Prevention of Pollution from Ships (MARPOL) and the United Nations Convention on the Law of the Sea (UNCLOS). These conventions lay the foundations for coastal states to develop legislation and

management plans relating to their coastal and marine environments, integrating the various sectoral policies and, increasingly, taking account of river catchment that discharge to those environments (UNEP et al, 2003; UNEP, 2006). Furthermore, many African governments have realized the benefits of Integrated Coastal Zone Management (ICZM), and have put in place policies and legislation to put its principles into effect.

Other regional level initiatives include the Pan African Conference on Sustainable Integrated Coastal Management (PASICOM) and the Cape Town Conference on Cooperation for the Development and Protection of the Marine and Coastal Environment in sub-Saharan Africa, both organized in 1998. The Cape Town Conference adopted the Cape Town Declaration. An important component of the Declaration is the African Action Plan and Strategy for the Development and Protection of the Coastal and Marine Environment in sub-Saharan Africa, otherwise known as the “African Process”. Since it was launched, the African Process has galvanized broad political support. As an innovative process, it has contributed to generating awareness at all levels that regional cooperation and solidarity are required if effective and lasting solutions for sustainable development and environmental protection are to be developed and sustained.

The overall objective of the Coastal and Marine Resources programme of the Environmental Initiative of NEPAD is to support the implementation of the objectives of the Abidjan and Nairobi Conventions and to contribute to the implementation of the decisions of the African Process. In addition, the objectives of this programme area are to assist African countries to implement the relevant provisions of the Global Programme of Action for the Protection of the Marine Environment from Land Based Activities (UNEP et al, 2003).

Countries have been implementing programmes and projects on Large Marine Ecosystems (LMEs) through the UNDP-GEF International Waters Programme. The Benguela Current Large Marine Ecosystem (BCLME) Programme was designed to improve the structures and capacities of Namibia, Angola and South Africa to deal with their transboundary environmental problems and manage the BCLME in an integrated and sustainable manner. The programme assists governments to manage their shared marine resources – fish, diamond mining and petroleum exploration – in an integrated and sustainable way. Key project areas also include environmental variability, coastal zone management, ecosystem health, socio-economics and governance. More than 75 different projects and activities are carried out by activity centers in the three countries, which work in close cooperation with the fishing, oil and gas, and offshore diamond mining industries.

The Guinea Current Large Marine Ecosystem (GCLME) project was designed as an ecosystem-based effort to assist countries adjacent to the GCLME to prevent pollution, conserve biodiversity and achieve environmental and resource sustainability. Activities included institutional strengthening, water quality and ecological monitoring, pollution control, setting up demonstration sites and developing institutional mechanisms. The project's long-term objective was to facilitate changes in human activities in different sectors of national life to ensure that the GCLME and its multi-country drainage basins can support sustainable regional socio-economic development (UNDP-GEF International Waters Programme. Delivering results <http://www.undp.org/gef>, 21-09-07).

Other initiatives for improving resource management and related capacity-building are in place through organizations such as the Intergovernmental Oceanographic Commission of UNESCO (IOC), the World Bank, The Regional Organizations for the Conservation of the Red Sea and Gulf of Aden (PERSGA), Land-Ocean Interactions in the Coastal Zone (LOICZ), World Wide Fund for Nature (WWF), the World Conservation Union (IUCN) and UNEP.

Fisheries-specific initiatives and actions

The Heads of State Meeting of NEPAD Fish for All Summit in Nigeria adopted the Abuja Declaration on Sustainable Fisheries and Aquaculture in Africa. At the same occasion, the Global Programme on Fisheries

(PROFISH) was launched. The Programme is a new global partnership of developing countries, donors and technical agencies led by the World Bank. These are two significant recent developments that demonstrate national and international commitment towards realizing the potential that fisheries and aquaculture have to contribute to food security, poverty reduction and economic development (FAO, 2007).

In 2004, the FAO Council, in Resolution 1/127, established the South West Indian Ocean Fisheries Commission (SWIOFC) under Article VI of the FAO Constitution. As the newest regional fisheries body (RFB) of its type, it seeks to promote the sustainable development, conservation, rational management and best utilization of fishery resources in the region, with a special emphasis on fisheries targeted at non-tuna species. SWIOFC's membership is open to coastal states whose territories are situated wholly or partly within the area of the Commission (i.e. the Southwest Indian Ocean) The Commission held its first meeting in April 2005 in Mombassa (Kenya) and its second meeting in Maputo (Mozambique) in August 2006 (FAO, 2007).

In striving towards achieving sustainable fisheries, African countries have undertaken a number of initiatives: Twenty-five countries in West and Central Africa are participating in the Sustainable Fisheries Livelihood Programme (SFLP), in partnership with the Department for International Development (DFID) of the United Kingdom and Northern Ireland and the Food and Agriculture Organization of the UN (FAO). Among others, the SFLP assists governments in drafting policy and action plans that incorporate some of the provisions of the Code of Conduct for Responsible Fisheries (CCRF) and subsequently, integrating them into large-scale programmes like the National Programmes for Poverty Alleviation (Allison, E.H. and Badjeck, M-C, 2004).

Increasingly, African countries are designating nationally protected marine areas and the practice of dynamite fishing has been eliminated from some of these areas (UNEP, 2002). Countries are also regulating beach seines and developing alternative activities to improve the livelihoods of poor fishermen. Projects identified in the NEPAD coastal, marine and freshwater resources programme include those addressing biodiversity and those employing integrated management approaches in these environments. Strengthening management, monitoring, control and surveillance capacity in fisheries management organizations in sub-Saharan Africa is one of the projects proposed (UNEP et al, 2003).

5.4.1 Challenges and constraints

The capacity of most coastal nations to utilize their coastal and marine assets, while simultaneously protecting them from degradation, is lacking. Competition for space is intense around developing cities, where urban sprawl is making inroads into coastal areas. Key issues in the management of the coastal zone and offshore waters include the loss of biodiversity and habitats through human-related pressures, the impacts of which have become increasingly acute within the last 50 years.

Coastal ecosystems, especially estuaries and lagoonal wetlands, are becoming increasingly impacted by activities within river catchments, with deforestation, intensive agriculture, damming and irrigation all changing the nature of material fluxes. Coastal tourism development raises important issues of sustainability. The construction of hotels and transport infrastructure and the pressures of tourist numbers involve habitat loss and physical shoreline change and impact adversely on the living resources, especially those of coral reef ecosystems. At the global level, human-induced atmospheric warming has been contributing to a slow but persistent eustatic sea-level rise and significant climatic changes in the region. In the last decade, episodes of unusually high sea temperatures have caused widespread mortality of reef coral.

The overexploitation of fisheries at artisanal and industrial scales using unsustainable fishing methods, and the introduction of coastal ecosystems of invasive alien, are further concerns. Overexploitation of fisheries has two main drivers- at the artisanal scale, poverty and population growth among coastal communities and, at the

industrial scale, commercial incentives and subsidies available to foreign fleets operating under license, or in some cases, illegally in Exclusive Economic Zones (EEZs).

Data collection and the development of inventories remain a challenge. The quality of reported statistics for fisheries, especially for fish catches, numbers of fishers and fishing boats is varied and in some cases unreliable.

The high incidence and increasing sophistication of Illegal, Unregulated and Unreported (IUU) fishing continue to undermine the work of Regional Fisheries Management Organizations (RFMOs). The continuing widespread use of flags of noncompliance and ports of convenience exacerbates the scope and extent of IUU fishing. The criminal aspect of IUU fishing is also coming to the fore as organizations take measures against offending fishing vessels and their owners, and RFMO secretariats sometimes receive threats intended to make them withdraw measures that combat IUU fishing.

5.4.2 Lessons learned and the way forward

The will and capacity of countries to manage their coastal and marine resources in ways that promote human well being, for present and future generations, are important issues. Effective governance at community to global levels is a prerequisite for environmental stewardship, while the development and maintenance of that stewardship depends on a sustained commitment to human and technical capacity building. Capacity building in monitoring and enforcement at community level offers important opportunities. Community-based or participatory monitoring has been very effective in increasing the manpower available for monitoring and at the same time enhancing environmental awareness and ownership among community members.

Given the transnational issues involved in an ecosystem-wide approach to catchment, coastal and marine resource management, national legislation and management plans should place priority on the coordination of sector interests, with the involvement of all resource users. Policies should reflect the marked increase in environmental degradation over the last 50 years, as well as acknowledge the priorities for taking action.

Although the success of coastal tourism is subject to local security issues as well as global economic pressures, its sustainability depends, above all, on the protection and beneficial management of those assets. The short-term aspirations of developers must be appraised in the longer-term contexts of the sustainability of the amenity that has attracted those developers in the first place and of the implications of climate change. In particular, tourism development should aim to avoid the sidelining and alienation of indigenous communities by involving them in eco-tourism. Oil and natural gas development and mineral extraction have a potential for increasing the general levels of economic security and human well being in the short to medium term, but these resources are finite and there is a need to diversify into sustainable ventures.

Given that initiatives of actors at all levels to address the challenges of the coastal and marine environment commonly have overlapping objectives, there is merit in improved coordination and cooperation. Partnerships are therefore increasingly important in addressing coastal and marine management issues. Additionally, sustained financing is required to achieve maximum benefits to the coastal and marine environment and the economies that depend on them.

5.5 Sustainable forest management

According to the FAO State of World's Forests (2007), in 2005, forest cover in Africa was estimated at 635 million hectares. This accounted for about 16 percent of the global forest area (FAO, 2007a) and 21 percent

of Africa's land area. Forests provide multiple goods and services that are vital for poverty reduction and sustainable development in Africa and at global level. Over two-thirds of Africa's 600 million people rely directly or indirectly on forests for their livelihoods including food security (CIFOR, 2005). Fuel wood value represented 35 percent of the total value of wood removals in 2005. The overall contribution of the forest sector to GDP increased from US\$7.3 billion in 1990 to about 7.7 billion in 2000 (FAO, 2007a). A recent estimate puts the worldwide value of rainforests for carbon sequestration at U.S. \$1.1 trillion, with more than U.S.\$ 806 billion of that value in African countries (Conservation International, 2006).

In spite of the importance of forest, forest cover in the region has been declining at one of the fastest rates in the world. Africa and Latin America and the Caribbean are currently the two regions with the highest forest cover losses. At a net annual forest loss of about four million hectares, Africa lost over nine percent of its forests between 1990 and 2005 (FAO, 2007a; FAO 2007b). Africa's forests are under threat across the entire continent from a number of factors. The continent accounted for 64 percent of the global area burned by wild fires in 2000. This accounted for 7.7 percent of the total land area of Africa (FAO, 2007b). Agricultural expansion and high population growth rates are also exerting great pressure on forests. For instance, the population of over 50 million people inhabiting the Congo Basin relies on shifting cultivation to provide their non-protein dietary needs, and approximately 14 percent of the forest has been converted to agriculture. It is therefore feared that if agricultural practices do not intensify and remain largely unchanged, almost all forests in the Congo Basin might be converted to agricultural lands by 2025 (WWF, 2006).

The fact that only a small proportion of the total forest area is legally protected is another factor that contributes to forest loss. Estimates are that closed humid forests comprise only about 13.8 percent of total protected areas in Africa with much of the 26,300,000 hectares of biodiversity-rich tropical evergreen broadleaf forests in Africa remaining unprotected (UNEP et. al., 2003). Evidence is mounting that forests will be profoundly affected by climate change, such as increasing damage to forest health caused by the greater incidence of fire, pests and diseases. At the same time, new investments in forests to mitigate climate change lag behind the optimistic expectations of many, following the entry into force of the Kyoto Protocol in 2005 (FAO, 2007b).

Forest-related JPOI targets include accelerating the implementation of the Intergovernmental Panel on Forests / Intergovernmental Forum on Forests (IPF/IFF) proposals for action by countries and by the Collaborative Partnership on Forests, and intensifying efforts on reporting to the United Nations Forum on Forests (UNFF). With specific reference to Africa, the JPOI calls for actions to provide financial and technical support for afforestation and reforestation in Africa and to build capacity for sustainable forest management, including combating deforestation and measures to improve the policy and legal framework of the forest sector. The NEPAD Environment Initiative includes a programme on forests.

5.5.1 Concrete actions taken and progress made

Regional initiatives

Regional and sub-regional agreements, partnerships and programmes to promote Sustainable Forestry Management (SFM) have been established. For example, with assistance from FAO, the Convergence Plan of the Conference of Ministers in Charge of Forests in Central Africa (COMIFAC) has been developed and approved. The Plan provides a framework for harmonizing forest policies and programmes and serves as a basis for the formulation of national forest programmes.⁵ The Congo Basin Forest Partnership (CBFP), an association that brings together some thirty governmental and non-governmental organisations to promote the conservation and responsible management of the Congo Basin's tropical forests, has been set up. The

5 [http://209.85.165.104/search?q=cache:qyx3qEV6lmEJ:ftp://ftp.fao.org/docrep/fao/009/a0970e/a0970e11.pdf+Convergence+Plan+of+the+Conference+of+Ministers+in+Charge+of+Forests+in+Central+Africa+\(COMIFAC\)&hl=en&ct=clnk&cd=3&gl=us](http://209.85.165.104/search?q=cache:qyx3qEV6lmEJ:ftp://ftp.fao.org/docrep/fao/009/a0970e/a0970e11.pdf+Convergence+Plan+of+the+Conference+of+Ministers+in+Charge+of+Forests+in+Central+Africa+(COMIFAC)&hl=en&ct=clnk&cd=3&gl=us)

United States of America facilitated the Partnership in 2003 and 2004. France has been facilitating the Partnership since February 2005.⁶

A forest programme has been developed as part of the NEPAD Environment Action Plan with support from UNEP and GEF funding. Regional eco-certification schemes on timber production have also been initiated as part of the strategies to promote SFM in the region. Furthermore, the African Timber Organization (ATO) principles, criteria and indicators for the sustainable forest management of African natural tropical forests, developed with the support of the International Tropical Timber Organization (ITTO), provide an important basis for aligning forest management practices in the region.⁷

National actions

Countries have undertaken a wide range of measures and actions aimed at mitigating and reversing the trend of forest loss. Substantial effort has been made mostly by North African countries to establish planted forests. Improvements have also been made in Rwanda and Swaziland (FAO, 2007a). With funding from FAO, two thirds of African countries have been supported to develop, and are at different stages of implementing National Forest Programmes (NFPs). The NFPs translate the principles of SFM into domestic action (FAO, 2006).

According to the State of World's Forest (2007), a majority of countries in Africa have adopted new forest policies and forest laws, and efforts are being made in many countries to improve law enforcement (FAO, 2007a). Countries are also making progress in integrating forestry issues into poverty reduction strategies. Namibia, Niger, Tanzania and Uganda are well advanced in this regard (Geller and McConnell, 2006). Integrated forest monitoring systems are also being established.

5.5.2 Challenges and constraints

Among the main challenges faced by the region in achieving sustainable forest management are: high rates of poverty; insufficient financial resources and inadequate institutional capacity to manage forests sustainably; weak information collection and dissemination capacity, which inter alia, prevents forest authorities from building a solid case to capture the attention of decision-makers; inadequate land tenure policies and access rights to forest resources, which constrain investment in sustainable forest management; and civil conflict.

5.5.3 Lessons learned and the way forward

Linking NFPs to PRSs and therefore to the annual and medium-term budgeting frameworks improves the chances of forestry receiving additional government funding. However, these links are still weak in many countries. The forest sector should therefore work with national development planning, statistical and other authorities to identify and provide in a timely manner, both the qualitative and quantitative contributions of forestry to poverty alleviation, in order to support enhanced integration of forestry plans into national development plans, including PRSs.

The emergence of regional and subregional initiatives presents opportunities to galvanize actions for sustainable forest management. They have a great potential of addressing cross-boundary issues related to deforestation. These initiatives however need to be linked and coordinated with national development processes, in order to accelerate their implementation and achieve greater impact on deforestation.

6 CBFP (2007). Congo Basin Forest Partnership (CBFP). <http://www.cbfp.org/nouveau.htm> Accessed on June 20, 2007
7 [http://209.85.165.104/search?q=cache:qyx3qEV6lmEJ:ftp://ftp.fao.org/docrep/fao/009/a0970e/a0970e11.pdf+Convergence+Plan+of+the+Conference+of+Ministers+in+Charge+of+Forests+in+Central+Africa+\(COMIFA+C\)&hl=en&ct=clnk&cd=3&gl=us](http://209.85.165.104/search?q=cache:qyx3qEV6lmEJ:ftp://ftp.fao.org/docrep/fao/009/a0970e/a0970e11.pdf+Convergence+Plan+of+the+Conference+of+Ministers+in+Charge+of+Forests+in+Central+Africa+(COMIFA+C)&hl=en&ct=clnk&cd=3&gl=us)

There still remains a gap that needs to be bridged between policies and plans on the one hand, and practice and implementation on the other. Assistance provided for sustainable forest management should increasingly be targeted at integrated interventions at local government levels, the private sector and the local community levels, in order to translate the new forest policies and plans into actions that meet livelihood needs of forest-dependent communities.

Schemes based on payment for forest ecosystem services present opportunities for sustainable forest management in the region. There is however need to develop and execute such schemes with local community livelihood priorities and benefits in sharp focus.

Fires constitute a big threat to the health of forests. Countries need to be supported to strengthen and implement fire management programmes. Countries also need to establish and/or strengthen cooperation and networks for management of trans-border fires.

5.6 Biodiversity

The Africa Environment Outlook (AEO) of 2002 states that Africa has a rich and varied biological resources forming the region's natural wealth on which its social and economic systems are based. The humid tropical forests of equatorial Africa are among the most productive ecosystems in the world. However, even the arid areas of Africa (desert and Sahel regions), harbour many plant and animal species. Six out of the 25 internationally recognized biodiversity hotspots are in Africa. These are: the Mediterranean Basin Forests, the Western Indian Ocean Islands, the Cape Floristic Region (South Africa), the Succulent Karoo (shared between South Africa and Namibia), the Guinean Forest, and the Eastern Arc Mountain Forests (Eastern Africa). According to the AEO of 2006, about 1000 vertebrate species occur in just four of the 119 eco-regions (covering about eight percent of Africa's total area); a quarter (1,229 species) of the world's approximately 4,700 mammal species occur in Africa, including about 960 species in SSA and 137 species in Madagascar; and more than 2000 bird species, constituting more than a fifth of the approximately 10000 bird species in the world. Africa has about 950 amphibian species (UNEP, 2006).

These biodiversity resources underpin the livelihoods of millions of people. Four hundred million Africans, two-thirds of SSA's people, rely on products from its forests. Wild resources and non-timber forest products provide up to 35 percent of rural household incomes in Zimbabwe, and more than 50 percent in Senegal (Malloch, 2004). Kenya earns some US \$ 700 million a year in foreign exchange from tourism based largely on its ecosystems, wildlife and landscapes both terrestrial and marine (Steiner 2007). Returns from wildlife management were US\$350,000 in 2002 for the Sankuyo community in Botswana and US\$154,000 in 2003 for the Nyae Nyae community in Namibia (Roe and Bond, 2007). In hyper-arid Mali, fish makes up 60 percent of the total animal protein consumed annually, and in Central and Western Africa, bushmeat (wild animals and birds) is a major source of animal protein, making up more than 80 percent of consumption in some areas (UNEP, 2006). The maintenance of healthy and productive biodiversity resources is therefore vital in Africa's quest to achieve the MDGs and attain sustainable development.

Unfortunately the biodiversity resources upon which a multitude of livelihoods are intricately linked, is under extreme pressure resulting from: habitat loss and change; overexploitation as a result of illegal hunting for food, medicinal, or commercial use and national and international trade; and introduction of invasive alien species; and climate change. The ultimate causes of habitat loss in Africa are human population growth and the resulting demand for space, food and other resources; widespread poverty; a dependence on natural resources and economic pressures to increase exports, particularly agricultural produce, timber and mineral products.

Lack of recognition of indigenous knowledge and property rights also pose serious threats to biodiversity conservation.

A key JPOI biodiversity target is for countries to achieve a significant reduction in the current rate of loss of biological diversity, by 2010. With specific reference to Africa, the JPOI calls for, among others, the establishment and support of national and cross-border conservation areas to promote ecosystem conservation; respect of local traditions and cultures and promotion of the use of indigenous knowledge in natural resource management and eco-tourism; and support for the conservation of Africa's biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources, in accordance with commitments that countries have under biodiversity-related agreements to which they are parties. These include the Convention on Biological Diversity and the Convention on International Trade in Endangered Species of Wild Fauna and Flora, and regional biodiversity agreements.

Concrete actions taken and progress made

Regional initiatives

In July 2003, AU adopted the African Convention on the Conservation of Nature and Natural Resources (ACCNRR). This Convention replaces the original one adopted in Algiers in 1968. The Convention commits African countries to development that is based on the achievement of ecologically rational, economically sound, and socially acceptable policies and programmes, which recognize the human right to a satisfactory environment, as well as the right to development. By June 2007, 34 countries had signed, and six had ratified the revised Convention.⁸ In addition, the NEPAD Environment Initiative has been developed and encompasses programmes on conserving wetlands; preventing, controlling and managing invasive alien species; and cross-border conservation or management of natural resources, including forests and biodiversity.

National actions

African countries have expressed commitment to contribute to global efforts directed at the conservation of biodiversity, the sustainable use of biological resources and the equitable sharing of the benefits arising out of the utilization of genetic resources by ratifying the Convention on Biological Diversity (CBD). As of May 2007, 52 (98 percent) of African countries had ratified or acceded to the CBD⁹. With funding from GEF and assistance from UNDP, UNEP and the World Bank, African Countries are translating provisions of the Convention into action through the development of National Biodiversity Strategies and Action Plans (NBSAPs).¹⁰ As of May 2007, 37 countries had their NBSAPs posted on the CBD website.¹¹

In 2005, UNEP assisted Kenya, Uganda, Ethiopia, Botswana, Ghana and Zambia to undertake studies on Access to Benefit Sharing (ABS) - part of measures to enable the countries implement the CBD using the Bonn Guidelines. Experiences and challenges faced by these African countries in the course of adapting the Bonn Guidelines to their existing national regimes were brought out.¹² Furthermore, African countries have ratified the Cartagena Protocol on Biosafety. The Protocol adopted in 2000, has the objective of contributing to ensuring an adequate level of protection in the field of safe transfer, handling and use of living modified organisms resulting from modern biotechnology. By May 2007, 40 African countries had ratified or acceded to the protocol.¹³ UNEP, with funding from GEF, has assisted over 40 countries to develop National

8 <http://www.africa-union.org/root/au/Documents/Treaties/List/Revised%20Convention%20on%20Nature%20and%20Natural%20Resources.pdf>

9 CBD List of parties. <http://www.cbd.int/convention/parties/list.shtml>

10 <http://www.cbd.int/doc/training/nbsap/train-present-2007-intro-nbsap-en.pdf>

11 <http://www.cbd.int/nbsap/list.shtml>

12 UNEP official sources, 2007.

13 <http://www.biodiv.org/biosafety/signinglist.aspx?sts=rtf&ord=dt#ga>

Biosafety Frameworks comprising biosafety policies, administrative arrangements and regulatory regimes for implementation of the Biosafety Protocol.¹⁴

African countries have also subscribed to the Ramsar Convention. By May 2007, 47 African countries were parties to the Convention and had designated 231 Wetlands of International Importance for the conservation of wetland biodiversity.¹⁵ As part of international effort to counter species loss, African countries are also parties to the Convention on International Trade in Endangered Species (CITES). As of May 2007, 52 African countries (98 percent) were Contracting Parties to the Convention.¹⁶ CITES is credited for stemming the slaughter of the African elephant with its ban on international ivory trade in 1989.

Species reintroduction, ex-situ plant propagation, tightening controls on importation of products of animal or plant origin are some additional efforts to counteract the recent rapid loss of species loss. Participation of indigenous peoples in biodiversity conservation is now being assured through increasing efforts to understand indigenous knowledge systems and to promote their continued application.

One of the typical responses to warnings of natural habitat loss has been to increase the number and extent of protected areas. The Africa Environment Outlook (AEO) of 2002 noted that only six African countries (Botswana, Burkina Faso, Namibia, Rwanda, Senegal and Tanzania) had more than the international target of 10 percent of their land under protection. However, during the period 2000 to 2005, African countries designated over 3.5 million hectares of forests to be managed primarily for conservation of biological diversity, raising the total to almost 70 million hectares (FAO, 2007). Progress is being made in creating cross-border conservation areas. Examples include the Greater Limpopo Transfrontier Park initiative between Mozambique and South Africa, the Kgalagadi Agreement establishing a park between South Africa and Botswana, and the Tuli Park between South Africa, Botswana and Zimbabwe. Another example is the cooperative endeavour of Benin, Burkina Faso and Niger, supported by partners such as France, to protect the extensive transboundary complex of the Pendjari and Arly national parks (UNEP, 2006).

5.6.1 Challenges and constraints

Among the challenges experienced by countries in the region in the conservation and sustainable use of biodiversity and the equitable sharing of the benefits arising out of the utilization of genetic resources are: limited technical and financial capacity; gaps in information and knowledge ; weak institutional frameworks; limited national capacities for sustainable land-use planning and law enforcement; difficulty in convincing different sectors to induce multi-stakeholder interventions; lack of mainstreaming of NBSAPs into decision-making and resource allocation frameworks of governments; inadequate coordination among the actors; and political instability and war in some countries. Other challenges are inadequate access to affordable appropriate technology and difficulty in ensuring that economic benefits arising from the use of genetic resources do accrue to African countries and local communities remains a challenge.

5.6.2 Lessons learned and the way forward

More holistic solutions involving other sectors in biodiversity conservation are needed. Furthermore, adopting collaborative approaches at multiple levels can be important for achieving biodiversity conservation objectives. Therefore, in order to scale up implementation of national and local actions to conserve biodiversity, there is need to effectively integrate biodiversity strategies and action plans into national development plans, including poverty reduction strategies, and into sectoral, local and private investment plans.

14 UNEP official Sources, 2007.

15 Ramsar website. <http://www.ramsar.org/>. 25 May 2007

16 CITES List of Contracting Parties. <http://www.cites.org/eng/disc/parties/alphabet.shtml> Accessed on MAY 15, 2007

There is need to put in place appropriate incentives to encourage all stakeholders to become involved with conservation. For instance, direct economic incentives include provision of tax breaks for communities or businesses involved in biodiversity conservation. Additionally, secure land and resource tenure can stimulate investment in biodiversity conservation. Furthermore, regional and subregional programmes and networks should be established and/ or implemented to facilitate information sharing and collaboration, in order to scale up conservation activities and address cross-border biodiversity issues.

Quantitative valuation of biodiversity resources, linking its contribution to poverty reduction and economic growth, should be carried out to provide a compelling body of biodiversity information essential to support, urgent decision-making. This should include mainstreaming into development frameworks and funding allocations that are necessary to slow and reverse the region's increasing loss of biodiversity.

Local communities and indigenous populations suffer disproportionately from loss of biodiversity and ecosystem services as a consequence of being the most directly dependent groups on biodiversity resources and services. It is therefore essential to ensure the effective participation of civil society, local communities and indigenous peoples in national and regional processes on biodiversity conservation, so that they are afforded the opportunity to influence decisions that impact on their livelihoods.

The complementarities among the Rio Conventions call for a synergistic approach in their implementation. Coordination should be ensured and synergy established between NBSAPs and National Forest Programmes (NFPs), NAPAs for Climate Change and NAPs for drought and desertification. In this regard, African countries should develop and/or strengthen national frameworks to promote coordination and joint actions in their implementation.

The NBSAPs and other strategies for biodiversity conservation should be reviewed and updated to include national targets for 2010, and support provided to accelerate their implementation.

5.7 Climate Change

Climate change, as a result of rising concentrations of anthropogenically-produced green house gases in the atmosphere, is one of the most serious threats to sustainable development. Although Africa is contributing a small share of carbon dioxide emissions - projected to reach only about 3.8 percent of the global pool by 2010¹⁷, the region is extremely vulnerable to the impacts of climate change. This vulnerability is due to widespread poverty, poor infrastructure, high illiteracy rates, overexploitation of natural resources and conflicts, and the fact that a large share of economies depends on climate-sensitive sectors mainly rain-fed agriculture.

According to the report of the 4th International Panel on Climate Change (IPCC) Assessment released in 2007, by 2020, between 75 and 250 million people are projected to be exposed to an increase of water stress due to climate change in Africa. If coupled with increased demand, this will adversely affect livelihoods and exacerbate water-related problems. The report further states that more agricultural production, including access to food, in many African countries and regions is to be severely compromised by climate variability and change.

The area suitable for agriculture, the length of growing seasons and yield potential, particularly along the margins of semi-arid and arid areas, are expected to decrease. This would further adversely affect food security

¹⁷ Balgis Osman-Elasha. Africa's Vulnerability to Climate Change and Opportunities for Adaptation. In Tiempo Climate Newswatch. <http://www.tiempocyberclimate.org/newswatch/feature070302.htm> Accessed on June 15, 2007.

and exacerbate malnutrition in the continent. In some countries, yields from rain-fed agriculture could be reduced by up to 50 percent by 2020. Local food supplies are projected to be negatively affected by decreasing fisheries resources in large lakes due to rising water temperatures, which may be exacerbated by continued over-fishing.

The report also states that towards the end of the 21st century, projected sea-level rise will affect low-lying coastal areas with large populations. The cost of adaptation could amount to at least 5-10 percent of Gross Domestic Product (GDP). Mangroves and coral reefs are projected to be further degraded, with additional consequences for fisheries and tourism. Already, variations in rainfall patterns have led to incidences of drought and flooding, often with disastrous consequences for populations and for the environment (UNEP, 2002).

In order for Africa to mitigate and adapt to impacts of climate change and achieve sustainable development, the JPOI in its Africa chapter, calls for actions to assist African countries in mobilizing adequate resources for their adaptation needs relating to the adverse effects of climate change, extreme weather events, sea level rise and climate variability, and to assist in developing national climate change strategies and mitigation programmes, and continue to take actions to mitigate the adverse effects of climate change in Africa, consistent with the United Nations Framework Convention on Climate Change (UNFCCC). Additionally, NEPAD places emphasis on monitoring the impacts and effectively addressing the threats of climate change. Concrete actions taken and progress made

Regional initiatives

A programme on climate change has been developed as part of the NEPAD Environment Initiative. This climate change programme aims at supporting African countries to meet their commitments and priorities associated with the implementation of the UNFCCC and its Kyoto Protocol (UNEP et al., 2003). African countries are being assisted to achieve the MDGs through the programme on Climate for Development in Africa (ClimDev). ClimDev is an integrated, multi-partner programme addressing climate observations, climate services, climate risk management, and climate policy needs in Africa. Among the principal partners are Global Climate Observing System (GCOS), AU Commission, ECA, AfDB and the World Meteorological Organization (WMO).

The joint International Development Research Centre (IDRC), and DFID programme on Climate Change Adaptation in Africa (CCAA) is assisting many African countries to build their capacity to adapt to climate change in ways that benefit the most vulnerable. Through both research and capacity building, CCAA aims to establish a self-sustained skilled body of expertise in Africa to enhance the ability of African countries to adapt to climate change. The Nairobi Framework has been launched and is assisting developing countries, particularly those in sub-Saharan Africa to improve their level of participation in the CDM. UNDP, UNEP, WORLD BANK GROUP, AfDB, and the UNFCCC Secretariat initiated this Framework, which was announced by the UN Secretary General at the UNFCCC COP-12 and Kyoto COP/MOP-2, in Nairobi, Kenya, November 2006. Capacity building for monitoring, prediction and timely early warning in the region is being supported by the WMO-funded Drought Monitoring Centre (DMC) located in Nairobi, Kenya and sub-centres in Niamey, Niger and Harare, Zimbabwe (UNEP, 2005).

National actions

African countries have ratified and are implementing the UNFCCC, which promotes stabilization of greenhouse gas concentrations in the atmosphere, at a level that would prevent dangerous anthropogenic interference with the climate system. As of June 2007, out of 53 African countries, 52 (98 percent) had ratified

or acceded to the UNFCCC.¹⁸ These countries are at various stages in identifying possible climate change impacts and adaptation strategies by preparing and submitting National Communications to the UNFCCC.

With support provided mainly through UNEP, several African countries have completed their first communication and have begun their second. Through the Least Developed Countries (LDC) Fund, African countries are also at different stages of preparing their National Adaptation Programmes of Action (NAPAs), which identify priority activities that respond to their urgent and immediate needs. By June 2007, 10 African countries (Comoros, Djibouti, Eritrea, Lesotho, Madagascar, Malawi, Mauritania, Niger, Rwanda and Senegal) had completed and submitted their NAPAs.¹⁹

African countries are also engaged in the implementation of the Kyoto Protocol that commits industrialized (Annex 1) countries to reduce emissions of six greenhouse gases (excluding ozone and water vapour) by an average of about five percent below 1990 levels between 2008-2012. As of June 2007, 46 African countries (87 percent) had ratified or acceded to the Protocol²⁰, which came into force on the 16 of February 2005.

Within the framework of the Protocol, the World Bank Special Effort for Africa Programme has provided support in the development of eight community development carbon fund projects in Kenya, Ethiopia, Tanzania and Uganda (UNEP, 2005). With support from UNEP, another 21 projects from various countries have been developed and submitted for approval.²¹ These projects are to be funded within the framework of the Clean Development Mechanism (CDM), which aims to enable Annex I Parties to meet their emission reduction commitments under the Protocol, while facilitating sustainable development in Non-Annex I Parties.

Countries are developing and deploying new, innovative and other technologies and methods to deal with challenges brought about by climate variability and changing climate. These include the use of drought resistant crops, crop diversification, improved farming technologies, water conservation and harvesting technologies, use of efficient non-polluting energy sources and mosquito nets for malaria control (UNEP, 2005).

5.7.1 Challenges and constraints

The challenges faced by African countries in mitigating and adapting to climate change impact include: inadequate technical and institutional competence, particularly absence of, or non-operational Designated National Authorities (DNAs) in some countries; inadequate financial resources for country level activities; low awareness; poor competitiveness of African CDM projects due to high transaction costs; complex and stringent approval processes for the CDM projects; and low levels of research and scientific capacity on vulnerability, impact, mitigation, adaptation assessment and evaluation. The other challenge faced by the region is its low access to clean and efficient technology. Furthermore, lack of observational climate data in Africa impedes understanding of current and future climate variability and change.

5.7.2 Lessons learned and the way forward

Sustainable development can reduce vulnerability to climate change by enhancing adaptive capacity and increasing resilience. Furthermore, climate change needs to be tackled in an integrated manner. At present, however, few plans for promoting sustainability have explicitly included either adapting to climate change

18 List of Non-annex I parties. http://unfccc.int/parties_and_observers/parties/non_annex_i/items/2833.php. Accessed June 27, 2007.

19 National Adaptation Programmes of Action (NAPAs). <http://unfccc.int/adaptation/napas/items/2679.php> Accessed June 27, 2007.

20 Parties to the Kyoto Protocol. <http://maindb.unfccc.int/public/country.pl?group=kyoto> Accessed June 27, 2007.

21 Official Sources. UNEP 2007.

impacts, or promoting adaptive capacity (IPCC, 2007). African countries therefore need support in enhancing and promoting policy coherence and the integration of climate change mitigation and adaptation concerns into priority development policies and programmes, including poverty reduction strategies.

Africa has a low capacity to mitigate and adapt to the impacts of climate change. There is need therefore, to provide funding and other assistance to improve technical and institutional capacity and skills to support the development, and accelerate implementation of NAPAs.

Deforestation remains a major threat to forest cover, which has been recognized as an important aspect in climate change mitigation. Incentives for limiting deforestation need to be promoted. Avoiding deforestation should be encompassed in global and regional climate regimes.

Working with civil society and community-based organizations to strengthen the social, economic and technical resilience of vulnerable local communities not only promotes adaptation to climate change, but also sustainable development. The region needs to continue strengthening capacity and implement tangible programmes to address adaptation at local levels, where vulnerabilities are most pronounced.

5.8 Drought and desertification

Drought and desertification are at the core of serious challenges and threats facing sustainable development in Africa. Two thirds of Africa is classified as deserts or drylands. These are concentrated in the Sahelian region, the Horn of Africa and the Kalahari in the south. It is estimated that two-thirds of African land is already degraded to some degree and land degradation affects at least 485 million people or 65 percent of the entire African population. Estimates from individual countries report increasing areas affected by or prone to desertification. In Ghana, desertification is said to be creeping in at an estimated 20,000 hectares per year. Seventy percent of Ethiopia is reported to be prone to desertification, while in Kenya, around 80 percent of the land surface is threatened by desertification. Nigeria is reported to be losing 1,355 square miles of rangeland and cropland to desertification each year. Drought is one of the most important climate-related disasters affecting many countries of Africa, which have already witnessed a high frequency of occurrence and severity of drought. Climate change is set to exacerbate trends of climate-related disasters, including drought. Current climate scenarios predict that the driest regions of the world will become even drier, signalling a risk of persistence of drought in many parts of Africa, which has a large area of drylands.

Drought and desertification have far reaching adverse impacts on human health, food security, economic activity, physical infrastructure, natural resources and the environment, and national and global security. The consequences are mostly borne by the poorest people and the Small Island Developing States (SIDS). With two-thirds of arable land expected to be lost in Africa by 2025, land degradation currently leads to the loss of an average of more than three percent annually of agriculture GDP in the SSA region. If land degradation continues at the current pace, it is projected that more than a half of cultivated agricultural area in Africa could be unusable by the year 2050 and the region may be able to feed just 25 percent of its population by 2025. Drought and floods on the hand account for 80 percent of loss of life and 70 percent of economic losses linked to natural hazards in SSA. The drought of 2002–2003 resulted in a food deficit of 3.3 million tonnes, with an estimated 14.4 million people in need of assistance in the subregion.

WSSD identified combating desertification and mitigating the impacts of drought among the priority actions needed to enable developing countries achieve their poverty reduction goals and targets. The Summit called for among other things, the provision of financial and technical support for Africa's efforts to implement the United Nations Convention to Combat Desertification (UNCCD) at the national level and integrate indigenous knowledge systems into land and natural resources management practices, as appropriate. It also called for improving extension services to rural communities and promoting better land and watershed

management practices, including through improved agricultural practices that address land degradation, in order to develop capacity for the implementation of national programmes. The NEPAD Environment Initiative includes interventions to rehabilitate degraded land and to address the factors that led to such degradation.

5.8.1 Concrete actions taken and progress made

Regional initiatives

Strategies and programmes to address drought and desertification have been developed at subregional and regional level. Five Subregional Action Programmes (SRAPs) on desertification have been developed under the auspices of African subregional institutions namely: the Permanent Inter-State Committee on Drought Control in the Sahel (CILSS) and the Economic Community of West African States (ECOWAS) for West Africa and the Chad subregion; Arab Maghreb Union (AMU) for AMU subregion; Southern African Development Community (SADC) for Southern Africa subregion; the Intergovernmental Authority on Development (IGAD) for Eastern Africa subregion; and the Central African Forest Commission (COMIFAC) for the Central Africa subregion.

Under the auspices of the Regional Coordination Unit (RCU) hosted by the AfDB, a Regional Action Programme (RAP) is being developed. The NEPAD Comprehensive Africa Agricultural Development Programme (CAADP) and Environment Initiative have been developed. These two comprise pillars and programmes that are pertinent to drought impact mitigation and the control of land degradation and desertification. Other programmes with a bearing on drought and desertification include the ECA-AU-AfDB Initiative on Land policy in Africa; and the Green Wall for the Sahara programme. Centers charged with timely monitoring of drought and issuing early warnings have been established. These include the IGAD Climate Prediction and Applications Centre (ICPAC) in Nairobi and the SADC drought-monitoring centre in Harare. Furthermore, the Africa Regional Strategy and Programme of Action for Disaster Risk Reduction has been developed.

National actions

African countries have responded by signing the UNCCD. All African countries are parties to the Convention and are carrying out various activities to fulfil their obligations under the Convention. With the support of development partners, African countries are developing and implementing their National Action Programmes to combat desertification (NAPs). As of April 2007, NAPs had been developed and adopted by 42 African Countries. The majority of the remaining countries have launched NAP processes. The NAP processes have contributed significantly to the strengthening of capacity of various stakeholders to deal with drought and desertification. These processes have also triggered and resulted into institutional reforms such as the establishment of National Coordinating Bodies (NCBs) on desertification control.

Though generally at its infancy, implementation of NAPs has commenced in some countries. Countries such as Burundi, Kenya, Tunisia, Burkina Faso and Uganda have integrated NAPs into National Development Plans, especially the Poverty Reduction Strategies (PRSs). Countries have also put in place, and are implementing other policies, strategies and programmes, which contribute to desertification control and drought impact mitigation. These include programmes on preventing land degradation and /or restoring degraded lands, integrated water resources management, and promotion of efficient energy use and renewable sources of energy. Activities are also underway to set up and implement systems for monitoring drought and land degradation, early warning and disaster management. For instance, more than 30 countries have platforms for Disaster Risk Reduction (DRR) that cover drought.

International community support

Financial and technical support provided through bilateral and multilateral agencies has been instrumental in the development and implementation of the above programmes. The Global Environment Facility (GEF) has provided support to countries through its Operational Programme on Sustainable Land Management (SLM). This includes support for the NAP processes and for pilot projects to combat land degradation in the region. Furthermore, in June 2007, GEF approved US \$150 million funding for the Strategic Investment Programme (SIP) for Sustainable Land Management for SSA. The programme aims to restore soil fertility, helping boost food security, increase farm incomes, maintain ecosystem services, and engage local communities to better manage their lands in 28 countries in SSA. The UNCCD Global Mechanism (GM) has also been instrumental in mobilizing support for UNCCD implementation in the region. African countries in partnership with development agencies have initiated and developed TerrAfrica as a special catalytic partnership effort to scale up harmonized support for effective and efficient country-driven SLM practices in SSA.

5.8.2 Challenges and constraints

The region is confronted with many challenges and constraints that have hampered progress in the development and implementation of measures to combat desertification and to mitigate the impacts of drought. The main ones include the following: poor coordination and collaboration among actors;; lack of in-depth understanding and appreciation of drought and desertification issues, especially their links with and benefits to poverty reduction; weak institutional capacity including poor arrangements, lack of legislative backing and inadequate human resources, which constrain effectiveness of organs such as NCBs; inadequate policies and poor enforcement of legislation to guarantee clear legal ownership and access rights to land, water and other natural resources; and lack of financial resources, which is a systemic, and one of the most pressing constraints to most countries and regional programmes on the implementation of desertification control plans. Other constraints include inadequacy and poor accessibility of information on drought and desertification, and political instability and conflicts faced by some countries in the region.

5.8.3 Lessons learned and the way forward

National Development Plans are important platforms for securing attention and resources for implementing interventions to address impacts of drought and combat desertification. There is therefore need to integrate systematically, priorities identified in the NAPs and other SLM processes into NDPs, including National Strategies for Sustainable Development (NSSDs) and PRSs. This will serve as one of the means to mobilize resources for NAP implementation and to foster medium and long-term political commitment for drought mitigation and desertification control programmes.

There is an urgent need to up-scale the implementation of NAPs and other SLM plans with a special focus on concrete, on the ground community programmes and activities that have an objective of achieving measurable results on SLM and poverty reduction. This requires actions to establish accessible and innovative mechanisms for channeling increased levels of support, particularly financing to farmers and other frontline natural resources managers; and to mobilize and empower local authorities, civil society, private sector and local communities through increased capacity building that is linked to tangible results on poverty reduction, and integrative natural resources management.

Information for education, policy advocacy and planning, as well as monitoring of trends and impact of interventions on drought and desertification are central to the success of efforts in combating drought and desertification. Measures therefore need to be taken to strengthen the information base on drought and desertification and to enhance knowledge application, including through identification, documentation, dissemination, and sharing of best practices through programmes carried out at the regional, subregional and national levels.

There is need to establish and promote incentives for and address barriers to agricultural development and sustainable land and other natural resources management by among others: providing dryland areas with increased access to appropriate and affordable agricultural technologies such as drought resistant crop varieties, affordable credit facilities and links to markets; developing economic and social infrastructure such as roads, and energy and water supply infrastructure, in order to facilitate local people in the affected areas to manage their own development; and carrying out reform and/or effective enforcement of land and other natural resources regulatory frameworks to promote secure tenure and/ or access rights to land, water and other natural resources.

The management of, and adaptation to drought and desertification impacts, especially in view of the expected climate change and the high vulnerability of the region to climate change impacts needs to be strengthened. This requires actions to strengthen the following: capacity for systematic climate observations by specialized centers; timely climate information outreach and application; early warning systems and drought risk management institutions; knowledge networking platforms and tools such as subregional and regional forums; and the use of information communications technologies based on a mixture of traditional and modern technology.

5.9 Natural disaster risk reduction

Disasters related to meteorological, hydrological and climate extremes are increasing across the region, exacerbated by unplanned and unregulated land use, lack of environmental controls, poor enforcement of building standards, urbanization, and other factors that increase the vulnerability of people, property, and infrastructure. Hydro-meteorological events cause the majority of loss of life and economic losses in SSA. These include floods, droughts, tropical cyclones and strong winds, storm surges, extreme temperatures, forest fires, sand or dust storms, and landslides. Africa has the highest mortality-related vulnerability coefficients for droughts and very high coefficients for cyclones and volcanoes. Since the early 1980s, drought has been a perennial feature in most parts of the region. Floods are among the most devastating natural hazards in Africa and flash floods are one of the greatest hazards arising from tropical cyclones and severe storms. Drought and floods account for 80 percent of loss of life and 70 percent of economic losses linked to natural hazards in SSA. Epidemics and famine, the next most significant cause of loss of life in SSA, are strongly linked to meteorological and hydrological conditions. The ongoing climate change process will result in increased intensity, frequency and variability in the patterns of those hazards (ISDR and World Bank, 2007b).

North African countries are also subject to a range of natural hazards, but these natural hazards are not evenly distributed. In particular, in some cases major population centers along coasts, including Algiers, Alexandria and Tunis, are at significant risk. Floods may be the most frequent event across the region, but the most damaging in human and economic terms are earthquakes. Algiers is exposed to significant earthquake hazard. The trends in the Middle East and North Africa (MENA) both in terms of natural hazards and also of population, social and environmental dynamics are more hazards and more risks; more people vulnerable and more assets threatened (Buckle, P., 2007).

The JPOI states that an integrated, multi-hazard, inclusive approach to address vulnerability, risk assessment and disaster management, including prevention, mitigation, preparedness, response and recovery, is an essential element of a safer world in the 21st century. Further, in its Africa Chapter, the Plan enjoins States to deal effectively with natural disasters, including their humanitarian and environmental impacts. Issues of conflicts have already been discussed in the different sections of the chapter on sustainable development governance in Africa. This section is therefore limited to disaster risk reduction.

The Hyogo Framework for Action (HFA), 2005–2015, adopted by 168 countries in Kobe in January 2005, provides a framework for all stakeholders to contribute to the reduction of risk of disasters at the international, regional and national levels. The World Bank and the United Nations International Strategy for Disaster Reduction (ISDR) joint publication on the status of disaster risk reduction in the sub-Saharan Africa (SSA) region (2007), is the principal information source of this section. Information on North African countries is extracted from the Provisional Report of the Preliminary Regional Stocktaking of Natural Hazard Risk and Disaster Management Capacity for MENA.

5.9.1 Concrete actions taken and progress made

Regional initiatives

In response to growing risks, notable efforts have been made at the regional, sub-regional, and national levels to reduce vulnerability. At the regional level, the AU Commission, together with the NEPAD Secretariat, has developed the African Regional Strategy for Disaster Risk Reduction and a Programme of Action for the Implementation of the Africa Strategy (2005–2010). Implementation of the Strategy rests at the subregional and national levels. The First African Ministerial Conference on DRR adopted the Programme of Action in 2005. In 2006, AMCEN mainstreamed the Africa DRR strategy into its five-year programme. At the subregional level, IGAD has developed a subregional strategy for disaster reduction. ECOWAS in early 2007 approved a subregional Common Policy and mechanisms for DRR. SADC has revised its subregional strategy, factoring in DRR, and ECCAS has established a subregional center for DRR in the Republic of the Congo and is developing a subregional strategy.

National actions in SSA

Several SSA countries have reinvigorated efforts to address growing disaster risks in a proactive way, including the development of strategies and mechanisms to reduce the potential impacts of disasters before the event occurs. In Cameroon, Ethiopia, and Lesotho, for example, policies, legislation, plans, and agencies for disaster management have advanced considerably. PRSPs for countries such as Gabon, Madagascar, Malawi, Mozambique, and Niger have incorporated aspects of natural disaster risk management as part of a national poverty reduction strategy. In support of these efforts to integrate risk reduction strategies into development strategies for good governance, sustainable economic growth, and poverty reduction, ISDR and the World Bank have developed a number of initiatives in the region.

Under the new Global Facility for Disaster Reduction and Recovery (GFDRR), regional disaster risk reduction initiatives in partnership with SSA countries are being promoted to develop proactive and strategic approaches to managing hazard risks. In this context, an analysis of the state of disaster risk management in the region was carried out to identify priorities and propose a strategic approach on how to better support countries in their efforts to protect their investments in poverty reduction and to promote sustainable development. A total of 33 countries participated in the survey, providing country reports on the state of disaster risk reduction. These countries are Botswana, Burundi, Cameroon, Cape Verde, Union of Comoros, Democratic Republic of Congo, Republic of Congo, Cote d'Ivoire, Djibouti, Equatorial Guinea, Eritrea, Ethiopia, Gabon, The Gambia, Guinea Bissau, Kenya, Liberia, Madagascar, Malawi, Mali, Mozambique, Namibia, Niger, Nigeria, Rwanda, Senegal, Seychelles, Sierra Leone, Somalia, Tanzania, Togo, Zambia, and Zimbabwe.

The findings revealed that the region has made significant progress in DRR and a number of policies, institutions, and organizations have been set up to mainstream DRR. National Disaster Management Organizations have been established, legislation is in place, a number of policy statements have been articulated both in disaster and non-disaster periods, and political commitment towards DRR has been gradually increasing. There is also

growing recognition of the region's needs to improve and enhance the effectiveness and efficiency of disaster management and risk reduction.

National actions in MENA countries

Arrangements within most MENA countries exist for emergency management and are organized and coordinated at a national level, either through a specially constituted agency or through the office of the Prime Minister or President. These are typical arrangements for dealing with response activities. These constitute actions directed at containing and controlling the hazard event, immediate protection of life and critical property and with the short-term aftermath of humanitarian aid, debris removal and maintaining public safety. As such, these arrangements do not deal with DRR as a holistic approach to managing natural hazards, disasters and development. Hence the conclusion that DRR in the region is under-developed and is not supported either by a robust institutional base or by effective and contemporary practice in risk assessment, mitigation and linkage with development activity. However, capacity exists to build on to achieve a holistic approach: Within the region, initial legislative frameworks exist in most countries; there is political will and commitment to link hazards, DRR and long term mitigation and remediation activities through better development policy and practice; and a number of agencies beyond the emergency services are already involved at the periphery of the national DRR process.

In the period since 1980 the World Bank has been involved in more than 40 disaster-related projects in the MENA region. Globally the World Bank has contributed more than \$40 billion towards post disaster recovery projects. This involvement demonstrates not only the Bank's commitment and the commitment of the international community, but also the willingness of MENA (and other) governments to collaborate in disaster management and DRR projects. UNDP is another major partner across MENA and its country reports show that across the region there is a commitment to long-term effectiveness in disaster management and to DRR, although the capability has yet to be developed.

5.9.2 Challenges and constraints

The major constraint facing the region is translating gains made into sustainable programmes and investments that tangibly reduce long-term vulnerabilities in the region. This is due to a variety of factors, one of which is inadequate capacity to mainstream DRR at the national and community levels. In some countries, lack of knowledge, skills, competencies, personnel and information at various levels to implement, monitor, and coordinate DRR programmes and projects were identified as hurdles to progress.

Most disaster management institutions also face financing gaps, which impact the extent to which DRR initiatives are actualized. Financing of disaster management projects is a shared responsibility; however, norms for allocating budgets for risk mitigation as part of ongoing development planning, have not been established in many countries.

Other findings, which confirm some of the challenges highlighted in the Africa Regional Strategy for DRR: (i) the lack of effective institutionalization of disaster risk reduction in Africa; (ii) inadequate information management and communication, training and research for disaster risk reduction; (iii) inadequate involvement of citizens in DRR; (iv) limited risk identification and assessment across the region; and (v) weak integration of disaster risk reduction in national development plans.

Countries also identified other major challenges such as reorienting towards DRR from emergency management, weak governance of DRR mechanisms, and weak knowledge and information base for DRR decision-making.

Challenges and constraints in the MENA region include a significant lack of documentation and understanding of the economic cost of disasters in MENA and inadequate institutional base and effective and contemporary practice in risk assessment, mitigation, as well as linkage with development activity

5.9.3 Lessons learned and the way forward

Improvement in the identification, assessment, and awareness of disaster risks: There is a need to strengthen knowledge on the variety, geographical coverage, type and extent of disaster risks across the region.

Capacity development and coordination: The lack of technically oriented human resources at national levels has hampered the effective implementation of policies and projects. Cross-sectoral training for all professionals involved in disaster management is vital to the success of the regional strategy, as well as for the implementation of national policies. In addition, there is a need for reflection on coordination between DRR institutions in the region.

Enhancement of knowledge management for DRR: The transformation of disaster management practices towards a DRR approach will occur when knowledge of disaster risks and reduction options is disseminated effectively to all partners. It is therefore necessary for the strengthening of national and regional mechanisms and forums for knowledge transfer.

Increase in public awareness of DRR: Increasing public awareness of disaster risks and reduction options is pivotal to the empowerment of people to protect their livelihoods against disaster risks. Risk reduction information needs to be provided regularly through all means of communications interaction between risk reduction authorities and the public at all levels.

Improvement in Governance of DRR Institutions: Disaster management institutions need to be strengthened, if DRR is to be integrated into development. This requires that the governance of these institutions be improved and that they develop the requisite capacity with adequate and secure resources.

Integration of DRR into emergency response management: DRR needs to be integrated into emergency response and post-disaster rehabilitation and reconstruction activities in the region. A long history of disasters in the region has shown that timely and comprehensive recovery comprising relief, rehabilitation, and reconstruction interventions, can reduce vulnerability and promote development if local coping capacities contribute to sustainable recovery.

Increased financial support for DRR initiatives: Regular development support must factor in disaster reduction to achieve sustainable outcomes in a region that faces current climate shocks, and pervasive social and economic vulnerability.

Mainstreaming DRR into development planning: With many development projects underway in the region, there is a need to proactively factor in disaster risk. There is a need for increased political support to build more holistic assessments of disaster impact into development planning.

Recommendations of the MENA Regional Workshop on DRR and Natural Hazard Risk Management, which was held in Cairo, Egypt from 18-21 April 2007, are similar to those proffered above.

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