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DEPARTMENT OF ECONOMIC AND SOCIAL AFFAIRS

FIRST AFRICAN EXPERT MEETING ON SUSTAINABLE CONSUMPTION AND PRODUCTION

BACKGROUND PAPER

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Contents

ACRONYMS

AfDB	African Development Bank
AMCEN	African Ministerial Conference on the Environment
AU	African Union
ECA	Economic Commission for Africa
EU	European Union
FAO	Food and Agriculture Organization
FDI	Foreign Direct Investment
FTA	free trade agreements
GDP	gross domestic product
GEF	Global Environment Facility
GSP	Generalized System of Preferences
JPOI	Johannesburg Plan of Implementation
NEAP	National Environmental Action Plan
NEPAD	New Partnership for Africa's Development
MDGs	Millennium Development Goals
NERICA	New Rice for Africa
NSDS	national sustainable development strategy
PAES	Partnership for African Environmental Sustainability
POPs	persistent organic pollutants
PRS	Poverty Reduction Strategy
PRSP	Poverty Reduction Strategy Paper/Programme
SADC	Southern African Development Cooperation
SCP	sustainable consumption and production
SSA	Sub-Saharan Africa
UNCHS	United Nations Center for Human Settlement
UN DESA	United Nations Department of Economic and Social Affairs
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
WSSD	World Summit on Sustainable Development

AFRICAN NUMBERS

	Sub-Saharan Africa	North Africa	South Africa	Developing Countries
% Urban population	33.6	59.0	58.6	41.2
Urban population growth rate % (1992-2002)	4.7	2.9	3.1	3.1
Rural population growth rate (1992-2002)	1.7	0.2	-0.4	0.8
Population density 2001 pop/ha	0.3	0.2	0.4	0.6
Population growth rate 1992-2002	2.6	1.7	1.5	1.7
Fertility rate (births per women) 2001	5.0	3.0	3.0	3.0
Life expectancy at birth (years) 2001	46.0	68.0	47.0	64.0
Mortality rate, infant (per 1,000 live births) 2001	105.0	36.0	56.0	61.0
Cereal production per capita in Kg (2002) **	120.4	110.6	287.0	242.0
Cereal production per cap growth rate (1992-2002)**	-0.2	-2.4	8.2	-0.7
Irrigated agriculture, ha per 1000 pop (2001)**	8.4	32.5	33.7	42.4
GDP per capita, PPP (current $)	1826.0	4314.0	11290.0	3918.0
GDP per capita growth rate (1991-2001) 1995$	-0.1	1.9	0.2	1.8
External debt, per capita (DOD, current $) 2001	301.2	673.8	556.2	450.8
ODA per capita (current $) 2001	20.7	14.9	9.9	11.1
School enrollment, primary (% gross) 2000	86.0	107.8	111.0	…
Vehicles (per 1,000 people) 1996	23.0	74.0	142.0	39.0
Total renewable water resource per capita (m^3) **	5769.3	3116.1 *		6004.3
Water withdrawal as % of Renewable Resources **	3%	51% *		8%

* Middle East & North Africa
** Source: FAO Database

Source: World Bank “World Development Indicators 2003”.

I. INTRODUCTION

1. The 2002 Johannesburg World Summit on Sustainable Development (WSSD) noted that fundamental changes in the way societies produce and consume are indispensable for achieving global sustainable development. It agreed that all countries should promote sustainable consumption and production patterns, with the developed countries taking the lead, and with all countries benefiting from the process.

2. In particular, the Johannesburg Plan of implementation (JPOI) called upon all countries to:

> "Encourage and promote the development of a 10-year framework of programmes in support of regional and national initiatives to accelerate the shift towards sustainable consumption and production to promote social and economic development within the carrying capacity of ecosystems by addressing and, where appropriate, de-linking economic growth and environmental degradation through improving efficiency and sustainability in the use of resources and production processes and reducing resource degradation, pollution and waste."[1]

3. As part of the implementation of the JPOI, an International Expert Meeting on the 10-Year Framework of Programmes for Sustainable Consumption and Production was organized in Marrakech, Morocco, on 16-19 June 2003.[2] The meeting launched the "Marrakech-Process", which includes regular global and regional meetings supported by informal expert task forces and roundtables to promote progress on the framework and on promoting sustainable consumption and production.

4. For the Marrakech Process and the 10-year framework, the scope of sustainable consumption and production is defined by chapter III of the Johannesburg Plan of Implementation. That chapter focuses on industrial production and mass consumption. It is complementary to the chapters on poverty reduction, natural resource management and health. It focuses particularly on efficient and productive use of energy, water and materials and on the consumption patterns of urban consumers, including waste generation and recycling, based on those consumption patterns.

5. While efforts to promote sustainable consumption and production do not focus primarily on poverty reduction, natural resource management, or agricultural development, it is important that they be designed to contribute to those objectives, particularly in developing countries with high levels of poverty and resource-based economies. Water and energy conservation efforts, for example, can be designed to facilitate access of the poor to clean water and energy. And waste management and recycling programmes, and sustainable urban transportation systems, can be designed to provide employment for poor people, to provide them with affordable services, and to improve the quality of their lives.

Regional processes on sustainable consumption and production

6. In Latin America and the Caribbean, regional expert meetings on sustainable consumption and production have been held in Argentina (April 2003) and Nicaragua (October 2003). Those meetings developed a Regional Strategy on Sustainable Consumption and Production and

proposed the establishment of a Regional Council of Government Experts on Sustainable Consumption and Production. The Council was established under the Latin American Forum of Environment Ministers, which also endorsed the Regional Strategy on Sustainable Consumption and Production.

7. In the Asia-Pacific region, regional expert meetings were held in Indonesia (May 2003), and the Republic of Korea (November 2003). Preliminary ideas about a regional strategy were developed, with indications of priorities and needs. The meetings also called for a regional "help center" to be established with the support of UN ESCAP and the UNEP regional office. The results of the meeting in the Republic of Korea were presented to and endorsed by the Meeting of the ESCAP Committee on Managing Globalization in November 2003. It is expected that the results of these deliberations will be submitted for consideration to the 60th Session of ESCAP in China in May 2004.

8. For 2004, various activities are planned in other regions. The European Commission (EC), together with UNEP and with the involvement of UN DESA, will organize a first framework meeting in Belgium in November 2004. The EC and UNEP will also organize a sub-regional meeting for the Baltic States and a national meeting for Russia. Other regional and sub-regional meetings on sustainable consumption and production are under consideration for Central Asia, the ESCWA region and North America.

9. The second international expert meeting on the 10-year framework is being planned for mid-2005, and Costa Rica has offered to host the meeting. That meeting will review work on sustainable consumption and production, including the results of the regional meetings.

10. The first Expert Meeting on Sustainable Consumption and Production for the African region has been organized in the context of the Marrakech Process and the 10-year framework of programmes called for by the Johannesburg Plan of Implementation.

Background

11. Unsustainable patterns of consumption and production were first recognized internationally as an obstacle to sustainable development by the 1992 Rio Earth Summit. Efforts to shift to more sustainable patterns have expanded steadily since 1992, particularly in developed countries, but also in developing countries in recent years. Some positive results have been achieved, particularly toward more sustainable production, but this progress has been more than offset by increases in overall consumption levels driven by economic development, industrialization and population growth.

12. Nonetheless, experiences in many countries, developing as well as developed, have demonstrated many approaches to sustainable consumption and production that provide economic, social and environmental benefits. These include policies and programmes for increased efficiency in energy and water use, waste reduction and recycling, and cleaner production. These have been achieved through product and process standards, environmental taxes, reduction of environmentally harmful subsidies, research and development, preferential finance, recycling systems, a life-cycle approach, and information and education. In many cases,

industry has increased efficiency and reduced waste simply to increase productivity and profitability. Individuals and households have also found ways to reduce their consumption of energy and resources – and spending on those – while improving their welfare. These results and benefits can now be disseminated to benefit all countries through international cooperation and assistance.

13. Sustainable consumption and production, like sustainable development in general, involves the integration and balancing of economic, social and environmental policies. It recognizes that consumption and production promote human welfare, but may also have negative social and environmental impacts arising from production, consumption or disposal, and may constrain long-term economic development. Making consumption and production more sustainable thus involves finding smarter ways to consume and produce so as to increase the benefits of consumption and production while reducing the negative impacts.

14. Some goods and services have negative impacts primarily in the production phase, while others have their major impacts in the consumption phase, or in the disposal phase. The greatest impacts of agricultural processing industries, and pulp and paper, for example, arise from air and water pollution during the production process. Cars, on the other hand, have their greatest economic, social and environmental impacts during their fuel-consuming, exhaust-emitting lifetimes, rather than in their construction. Similarly, the main impacts of lights and appliances occur as they consume energy to provide services. Batteries, containing lead and other heavy metals, pose higher risks in the disposal phase.

15. In many cases, negative impacts arising at one phase of the product life-cycle can be most effectively addressed through interventions in another phase. Fuel consumption and air pollution from the use of motor vehicles, for example, can be addressed by improved engine and vehicle design at the production stage, such as hybrid engines with greatly reduced fuel consumption and pollution emissions. Similarly, reducing the impacts of waste may require changes in product design and marketing, as well as improvements in waste management and recycling.

16. For this reason, efforts to promote sustainable consumption and production must consider the full life-cycle impacts of goods and services and the best ways to intervene, given the particular consumption and production patterns, the policy options available, and alternative ways to meeting the consumer requirements under the prevailing economic, social, political and administrative conditions.

17. While some countries, communities and individuals, mostly in developed countries, tend to "over-consume", with harmful impacts both on themselves and others, hundreds of millions of people, mostly in developing countries, suffer from under-consumption of food, housing, energy, transportation and other basic needs. For such people, the goal of sustainable development must be to increase consumption while conserving resources and protecting environmental systems to maximize long-term development.

18. It should be emphasized that sustainable consumption and production, like sustainable development in general, does not focus on environmental preservation, but balances the economic, social and environmental costs and benefits of consumption and production.

Assessing the sustainability of consumption and production depends on the particular conditions in an area. An area with abundant water resources but limited energy will have different priorities than an arid zone with abundant energy.

19. Changing consumption and production patterns generally does not occur quickly, but is a complex, long-term undertaking. Consumer values and lifestyles do not change easily or rapidly, and changing production may require new technology, investment and training of personnel. Consumption patterns are limited to what is available from producers, and producers will only produce what consumers will buy. Changing consumption and production requires an understanding of economics, technology, resource management, environmental science, social and cultural values, and demographic trends.

Objectives of the meeting

20. The objectives of the First African Regional Expert Meeting on Sustainable Consumption and Production are: (1) to identify regional and national priorities and needs for sustainable consumption and production in Africa; (2) to develop a regional framework for promoting more sustainable consumption and production, contributing to poverty alleviation, economic development and environmental protection; (3) to review the international 10-year framework and the Marrakech Process and consider how African countries can benefit from the process; and (4) to prepare a report to be presented to the African Ministerial Conference on the Environment (AMCEN), to other regional institutions such as NEPAD, ECA and the African Union, to DESA and UNEP, and to the next international expert meeting, for further action.

21. The report of the meeting is expected to be a summary of the discussions, with conclusions and recommendations, including recommendations on follow-up meetings and activities at the regional and national levels.

22. This paper is intended to serve as a basis for discussions at the meeting and to stimulate ideas and exchange of experience and information on ways to promote sustainable consumption and production in Africa. The paper focuses on sustainable consumption and production issues of relevance to the African situation, including practical experience in Africa.

23. The examples of actions included in this report do not constitute a comprehensive survey of the field, but are intended as illustrative of achievements and lessons learned in changing unsustainable patterns of consumption and production, as well as identifying continuing challenges and emerging issues.

National sustainable development strategies

24. Among the measures advocated in the Johannesburg Plan of Implementation (JPOI) is to "integrate the issue of production and consumption patterns into sustainable development policies, programmes and strategies, including, where applicable, into poverty reduction strategies." The JPOI urges states to take immediate steps to make progress in the formulation and elaboration of national strategies for sustainable development (NSDS) and begin their implementation by 2005.[3]

25. According to the UN Guidance Paper on the formulation of national sustainable development strategies, a national sustainable development strategy (NSDS) can be based on or be an extension of a country's poverty reduction strategy, national environmental action plan (NEAP), or economic growth and investment plan. What is important is that the strategy integrates the three pillars of sustainable development – economic development, social equity and environmental protection – in a balanced manner, and that it is fully nationally owned and fosters the participation of all sectors of society. As called for in the JPOI, a programme for promoting sustainable production and consumption patterns should be part of the NSDS process.

26. During the past decade, many African countries have made extensive efforts to integrate economic, social and environmental objectives through either elaborating new policies or strategies for sustainable development, or by adapting existing policies and plans. Benin, Burkina Faso, Ghana, Guinea, Kenya, Lesotho, Malawi, Nigeria, and Uganda have developed National Environmental Action Plans (NEAPs). Tanzania and Zambia started with National Conservation Strategies (NCS) and shifted to NEAPs. Eritrea, Nigeria and Zimbabwe have developed national sustainable development strategies independently, while Botswana and Ethiopia continued with the NCSs process. Many African countries have also formulated National Biodiversity Strategies and Action Plans (NBSAP) and National Action Plans to Combat Desertification (NAPs) in accordance with the United Nations conventions on those issues.

27. Many countries in Africa have recently formulated or are formulating Poverty Reduction Strategies Papers (PRSPs). PRSPs and sustainable development strategies are closely linked as PRSPs are intended to integrate economic, social and environmental factors. According to the World Bank Environment Strategy, "integrating environmental considerations into the new Poverty Reduction Strategy Papers is an urgent task" Currently for Sub-Saharan Africa, there are 11 interim PRSPs and 19 full PRSPs.[4]

28. A World Bank assessment indicates that the full PRSPs integrate environmental issues more than the interim PRSPs, including consideration of: (a) measures taken to enhance environmental management capacity; (b) investment in natural capital; (c) investment in human-made capital that can improve environmental quality; and (d) monitoring and evaluation of environmental programmes and plans.[5] However, in terms of implementation, the assessment found that many countries had made limited progress in the implementation of their full PRSPs. As a good example of the integration of environmental issues, the assessment cited Zambia's PRSP, which identified water resources, biodiversity, poverty and natural resources degradation, property rights, public policies for environmental management, capacity building, and gender and environment as top priorities. Zambia has enacted environmental legislation and invested in its energy sector, focusing on electrification, efficient charcoal production, improved stoves and replacement of charcoal with "millennium gel" (bio-ethanol fuel) in urban households. Zambia has also established a set of goals that can be used to monitor the implementation of its PRSP.

29. Promoting sustainable consumption and production, like sustainable development in general, requires contributions from various stakeholders including individual consumers, producers, consumer and environmental organizations, local authorities and national governments. It also requires regional and international support for exchange of information and

experience, for technical assistance for developing countries, and for cooperation on large-scale initiatives. At the international level, cooperation is promoted by the United Nations Division for Sustainable Development/DESA, UNEP and other agencies in their areas of specialization. At the regional level in Africa, there are a number of organizations that could support cooperation on sustainable consumption and production, as discussed later in the paper.

Poverty eradication as a major challenge for SCP in Africa

30. Africa is endowed with huge natural resources, diversity of cultures and rich indigenous knowledge. It is a region with huge potential for economic and social development. The last decade has seen considerable progress in stabilizing African economies and fostering sound governance structures and democratic practices. Challenges to development include pervasive poverty, high population growth, heavy debt burdens, conflict, and heavy disease burdens, including HIV/AIDS, malaria and others. Finding more sustainable approaches to consumption and production can contribute to addressing those challenges.

31. In Africa, poverty is a major obstacle to sustainable development in general and to sustainable consumption and production in particular, mainly due to the very limited choices poor people have. It is therefore particularly important that efforts to promote sustainable consumption and production should promote poverty reduction. A number of African regional processes emphasize the linkage between poverty reduction and environmental management.

32. The African Environmental Outlook 2002, prepared by AMCEN and UNEP in cooperation with other African institutions, identifies a number of actions to reduce poverty and protect the environment:[6]

(a) Endorsement and promotion of the principles of sustainable development;

(b) Acceleration of industrial development;

(c) Increase of sustainable agriculture production;

(d) Promotion of human health, well-being and development;

(e) Advocacy for better terms of trade;

(f) Generation of increased domestic financing for sustainable development;

(g) Improvement of infrastructure and sustainable human settlements in Africa;

(h) Improvement of the scientific and technological base in Africa.

33. Under the theme of poverty and environment, the NEPAD Strategic Plan for Capacity-Building for Africa (SPCB) identified the following programmes and projects:[7]

(a) Promotion of good governance (institutional);

(b) Capacity-building for formulation, implementation and monitoring of policies and strategies at the regional, national and local levels (technical);

(c) Promotion of community-based natural resources management;

(d) Prevention, resolution and management of conflicts;

(e) Development and implementation of vertically and horizontally integrated sound strategies;

(f) Environmental information, education and public awareness;

(g) Promotion of sustainable agricultural practices through the promotion of science and technology;

(h) Promotion of sustainable energy;

(i) Improvement of the policy (macroeconomics and sectoral) environment with a view to attracting foreign investment and facilitating factor (capital and labour) mobility;

(j) Cross-country harmonization of policies and strategies;

(k) Promotion of integrated management of natural and man-made disasters and movement towards sustainable development.

34. As a basis for discussion at the First African Expert Meeting on Sustainable Consumption and Production, the following sections correspond to discussion groups to be formed during the meeting. Energy, the theme for one of the groups, is addressed in a separate paper. The following sections address: (1) urban management and development; (2) water and natural resource management; and (3) industrial development. The final sections of the paper address regional cooperation and conclusions.

II. URBAN MANAGEMENT AND DEVELOPMENT

Urbanization

35. Africa's population of 851 million (2003) is growing at an annual rate of 2.3 percent, almost twice the world average of 1.2 percent.[8] High national population growth rates, combined with rapid rural-urban migration by people in search of jobs, educational opportunities, health care and other urban benefits, result in very high urban population growth rates.[9] Environmental disasters and armed conflicts also contribute to rural-urban migration.

36. Some 39 percent of Africa's population (329 million people in 2003) now live in urban areas, and the urban population is growing at 3.6 percent per year, higher than any other region. The urban population is expected to grow to 54 percent in 2030. There are 43 cities in Africa with more than one million inhabitants, a figure that is expected to increase to almost 70 cities by 2015. The world's megacities, with more than 10 million inhabitants, now include Cairo and Lagos. African cities account for 60 percent of GDP and are important centers for education, trade and employment.

37. North Africa is the most urbanized sub-region with an average urban population of 54 percent, followed by West Africa (40 percent), Southern Africa (39 percent), Central Africa (36 percent) and the Western Indian Ocean islands (32 percent).[10] The least urbanized sub-region is Eastern Africa, with only 23 percent of the population living in urban areas.[11] Malawi has the highest urban population growth rate of any country in Africa, which at 6.3 percent is three times the world rate.

38. This rapid growth of cities has given rise to rapidly increasing demand for water, energy, land and housing, increasing generation and accumulation of solid and hazardous waste, and increasing traffic and congestion in the larger cities.[12] In most African cities, economic growth, job creation and infrastructure development have been unable to keep pace with the growing population, resulting in high levels of unemployment, inadequate access to land, housing, social services and vulnerability to natural and man-made disasters.[13]

39. The rapid urbanization has also lead to large and rapidly growing unplanned and unserviced informal settlements (slums) with poor housing, water supply, sanitation, waste disposal, electricity, transportation and communications. In Nairobi, for example around 55 percent of the urban population lived in informal settlements in 1993.[14]

Urban planning and standards

40. Studies by UN-HABITAT have concluded that Africa has "fairly adequate provisions of urban planning and development regulations on the books; the problem is largely in the degree of compliance."[15] While planning efforts have been made by city councils, many cities lack the capacity to clearly articulate long-term needs and formulate strategies to attain sustainable urban development. Urban planning is a complex process, made more difficult in Africa by rapid urbanization, high urban unemployment, poverty, inadequate shelter; inadequate and poorly maintained physical infrastructure, environmental degradation, weak human and institutional capacity, and limited resources.

41. The urban sector in Africa faces many challenges, including the following:

(a) Enforcement of planning regulations remains the biggest challenge African cities face, primarily due to weak local governance and insufficient qualified personnel, particularly in technical areas such as health and hazardous waste management. There is also a lack of capacity to keep up with technological change, especially relating to environmental control.

(b) Another problem in enforcing urban planning regulations is the inability to provide building permits or approve applications in a reasonable time. The current socio-economic conditions and politics tend to contribute to violation of development plans and procedures as provided for in regional, town and national planning regulations. Other factors affecting urban planning and management include inadequate finance, inadequate equipment and political interference in the activities of city councils.

(c) While national housing strategies and policies in Africa highlight the need for every citizen to have access to adequate housing and to increase the proportion of housing owned by citizens, housing constitutes a major problem in most African cities. The provision of serviced land for the growing urban populations has not been realized as planned, and there is a large gap between cost and affordability. Developers are building housing with no regard for planning.

Urban infrastructure for water and sanitation

42. Sub-Saharan Africa has a lower rate of access to improved drinking water sources than other regions. The lack of progress is, in most cases, not due to scarcity of freshwater, but to weak water management capacities. Partly as a result of contaminated drinking water and poor sanitation, the under-5 child mortality rate in Africa is higher and has declined less over the 1990s than in any other region.[16]

43. During the 1990s, the number of people in Africa with access to improved drinking water supplies increased, although access in urban areas in sub-Saharan Africa did not keep up with population growth. Some countries achieved substantial progress, such as Tanzania, which increased access by 30 percentage points over the 1990s. Urban-rural disparities are particularly high in sub-Saharan Africa.

Proportion of population without access to improved water supplies

	Sub-Saharan Africa		Northern Africa	
	1990	**2000**	**1990**	**2000**
Urban	14%	17%	6%	5%
Rural	60%	55%	20%	16%

Source: WHO-UNICEF Joint Monitoring Programme, www.wssinfo.org

44. For access to sanitation facilities, while the number of people with access has increased significantly over the 1990s, in Sub-Saharan Africa, it has not kept up with rapid population growth in either urban or rural areas. Over 300 million people in Africa do not have access to adequate sanitation. Almost all of the wastewater in the cities of sub-Saharan Africa is discharged into waterways untreated, contaminating the water for downstream users.

Proportion of population without access to adequate sanitation

	Sub-Saharan Africa		Northern Africa	
	1990	**2000**	**1990**	**2000**
Urban	24%	25%	6%	4%
Rural	54%	58%	35%	18%

Source: WHO-UNICEF Joint Monitoring Programme, www.wssinfo.org

Waste management

45. While developed countries have long had house-to-house waste collection and have reduced the environmental impact of waste disposal in recent years through sanitary landfills and high-temperature incinerators, in the developing world few cities have adequate waste collection

and disposal systems, and the accumulating waste threatens health, damages the environment, and detracts from the quality of urban life.[17]

46. In view of the many urgent needs facing African governments, waste management is generally given low priority, as reflected by the resources allocated to the issue. In particular, because waste is largely an urban problem and a local responsibility, the issue is not a priority for national policy-making institutions. However, waste and its environmental impacts is a common problem throughout the region, and awareness of the seriousness of the situation is growing.

47. The problem of waste management is compounded by the mixing of hazardous waste, including medical waste, with ordinary municipal waste. As a result of the relatively small industrial and manufacturing sectors in most countries, accounting for less than 27 percent of the regional GDP, the problem of hazardous waste is less than in other regions, but the industrial sector is growing steadily.

48. Solid waste management in Africa is an important issue for several reasons:

(a) As in the rest of the world, much of the waste and pollution in Africa is concentrated in urban areas because of high population densities and a concentration of economic activity. Only a small proportion of the waste generated is collected in most cities (See annex 1). Streets, open spaces and marketplaces are commonly littered with solid waste, and drainage systems are often clogged or totally blocked;

(b) Increasing urbanization, incomes, and changing consumption habits are increasing the volume of waste generated;

(c) Most city councils are weak and poorly funded and cannot afford house-to-house waste collection. Delivery of household waste to collection points must be done by households or organized by community groups or private entrepreneurs;

(d) Unplanned, informal settlements, which make up over half of some cities, are often not accessible by trucks due to their narrow winding streets;

(e) Municipal authorities have generally been unsupportive of informal waste collection efforts.

49. While laws and regulations governing solid waste have been put into place in many countries, such legal frameworks are not effective if they are not supported by effective institutions with adequate authority and financial and human resources. Most city councils in Africa have some municipal waste management system, usually placed under a sub-department of health, which undertakes some waste collection, or contracts it out to the private sector.

50. To finance waste management systems in the face of very limited public revenues, some degree of cost recovery may be needed. However, high disposal fees encourage illegal dumping, especially if regulatory enforcement is weak. Subsidized disposal fees can be targeted to sectors that may have fewer resources to pay for disposal such as low-income communities and small businesses.[18]

51. Efforts have been made in many cities to adopt waste management methods and technologies employed in developed countries. However, such methods are expensive and complex, and they have generally not met the needs of African cities, in particular in low-income neighborhoods where access for large vehicles is limited.

52. In most African cities, scavenging and informal recycling have long been the norm, sometimes with house-to-house collection with handcarts. In some countries, government policy has begun to consider how to make such systems work more effectively and safely, recognizing their importance not only to waste collection and recycling of useful materials, but also to employment of the poor and unskilled. Support measures for such informal enterprise include legalizing scavenging activities, encouraging formation of scavenger cooperatives, awarding public contracts for collection of waste and recyclables to small entrepreneurs, establishing public-private partnerships between local authorities and scavengers, and keeping ordinary waste separate from hazardous waste. Scavenging must be managed so that it does not interfere with leveling, covering and compressing waste in landfills as a public health measure.[19]

53. In many cases, efforts to introduce "modern" waste management systems conflict with scavenging. When containers of waste are put outside for collection, scavengers may open the bags to look for recyclables, spreading garbage through the streets. Attempts by police to prevent scavenging are usually unsuccessful and deprive poor people of their meager livelihoods. In some cases, efforts are being made to integrate traditional scavenging practices with modern waste collection and disposal systems through cooperation with scavenger associations and other community groups. Strengthening the capacities of municipal authorities is essential, together with exchange of information on methods that are cost-effective within the Africa context. Efforts to promote waste prevention and minimization, recycling and reuse, and informal sector micro-enterprises that link income generation to environmental protection are other measures that need to be considered.

Per capita solid waste generation and collection in major African cities

City	Per capita solid waste (kg/day)	Households with waste collection (%)	Population (millions)
North Africa			
Egypt, Cairo	0.5	65	14.5
Morocco, Rabat	0.6	90	1.6
Tunisia, Tunis	0.5	61	1.8
Sub-Saharan Africa			
Benin, Porto Novo	0.5	25	0.6
Burkina Faso, Ouagadougou	0.7	40	1.6
Burundi, Bujumbura	1.4	41	-
Cameroon, Douala	0.7	60	1.1
Congo. DR, Kinshasa	1.2	0	6.3
Congo Rep., Brazzaville	0.6	72	0.9
Cote d' Ivoire, Abidjan	1.0	70	3.4
Gambia, Banjul	0.3	35	0.5

Ghana, Accra	0.4	60	1.7
Guinea, Conakry	0.7	50	1.3
Mauritania, Nouakchott	0.9	15	0.6
Namibia, Windhoek	0.7	93	-
Niger, Niamey	1.0	25	0.5
Nigeria, Ibadan	1.1	40	2.0
Lagos	0.3	8	8.0
Senegal, Dakar	0.7	36	2.3
Tanzania, Dar es Salaam	1.0	25	2.3
Togo, Lome	1.9	27	0.8
Uganda, Kampala	0.6	20	0.8
Zimbabwe, Harare	0.7	100	1.5

Source: World Resources 1998-99, p.278, Data Table 9.3 Urban Data

Reuse, recycling and disposal of waste

54. In sub-Saharan Africa, there are a few formal systems of material recovery and recycling. However, there is wide reuse of plastics, bottles, paper, cardboard, and cans for domestic purposes. Such informal collection and recycling is common among the urban poor in almost all African cities. Some items are reused as is, while others are converted into new products for local use, e.g. smelting of aluminum cans and other scrap metals into household utensils. Old car tires are converted into shoes, ropes, and flower pots; paper and plastic waste are transformed into tourist products; and paper and cardboard are recycled into newspapers.

55. It is estimated that the organic content of municipal waste in African cities is as high as 70 percent, suggesting that composting could be a useful recovery option.[20] However, this has been tried in various countries at different scales with very poor results, mainly because of low demand for the final product. Several reports indicate that small scale composting has been initiated in a number of countries including Benin, Cameroon, Egypt, Kenya, Nigeria, South Africa, and Zambia; but the practice has not had significant impact on the reduction of solid waste.

56. Cairo, Egypt, has had for decades a large, well-organized informal system of waste collection that collects about one-third of the 9000 tons of solid waste generated every day, mostly from the more affluent neighborhoods. The activity provides employment for about 40,000 people who collect, transport, sort, sell and remanufacture discarded material. About 80 percent of the waste is either recycled by the collectors or sold to others who reuse or recycle it, probably the highest municipal waste recycling rate in the world. A major problem for the system has been requirements by the city authorities to move the activities out of town in an attempt to clean up the urban neighborhoods. The system is also now threatened by the new national policy to contract out waste collection to large "modern" waste management systems.[21]

57. In the Sainte Rita community in Cotonou, Benin, some 2700 households and organizations pay monthly fees to a community programme that trains and employs youths to collect their waste. Recyclable paper and plastic is sold for reprocessing, and organic material is composted for the programme's farming operations.[22]

58. In Lusaka, Zambia, in 2000, the Sustainable Lusaka Programme of the Lusaka City Council organized a similar system, providing training and grants to community organizations in low-income neighbourhoods to form household waste collection enterprises serving 200-1300 houses. Trainees were given loans to buy vehicles, boots and safety clothes. Households and shops were informed of the services and fees and invited to subscribe for $0.20-0.40 per week per house and $1 per shop. While many did so, some of the organizations were not well run, had problems collecting fees, could not cover their costs, and the number of subscribers has declined. There were also problems in transferring waste from the primary neighbourhood collectors to the secondary municipal collectors, which served only the middle- and upper-income neighbourhoods.[23]

59. Dar-es-Salaam, Tanzania, has a population of 2.5 million, 75 percent of whom live in unplanned settlements. Waste accumulation there had reached a crisis point in 1992, with only about 2 percent of the waste collected by the municipal collection system, and the rest accumulating in streets, around market places and around drainage systems. In 1992, the city organized a consultation on the issue with public, private and community organizations. With international support, the municipal collection system was expanded, with household waste collected by hand-carts. Most of the formal city area is now covered by 20 private companies charging monthly fees of $3 and employing a total of about 1500 workers. Some 24 community organizations and NGOs employing about 800 workers cover parts of the unplanned settlements, receiving municipal subsidies and charging monthly fees of $0.30. About 33 percent of the 2400 tonnes of waste generated is now collected, with about 9 percent of that being recycled.[24]

60. A problem for individual scavengers is that industry often demands a minimum quantity from suppliers, so scavengers have to sell through middlemen. The middlemen can often take most of the profits as there are few of them and many scavengers. By forming cooperatives, scavengers can bypass the middlemen and increase their earnings. In a number of developing countries, mostly in Latin America and Asia, scavengers have formed such cooperatives and become part of formal solid waste management programmes. Through such programmes, waste collection has been expanded at relatively low cost, creating jobs and benefiting low-income communities. Instead of being a problem, scavengers can be part of the solution to the problem of solid waste collection and disposal in the cities of low-income countries.[25]

61. For waste disposal in Africa, a majority of landfills are dumps on open land, wetlands, and lands with water near the surface, often with no liners, fences, compactors or soil cover. This facilitates scavenging, but at high risk. Some countries, such as South Africa, Uganda, Ghana and Egypt, are upgrading their landfills to sanitary ones.

62. Incineration and waste-to-energy recovery are not widely practiced in Africa, and attempts to introduce modern incineration in Tanzania and Nigeria have failed. The high organic and water content of the waste makes incinerators energy consumers rather than energy producers. Proper incinerators are also very expensive to construct and run.

Sustainable transportation

63. Transport is a linchpin of economic and social development. It links people, producers and consumers, urban and rural areas, and global, regional and local markets. In Africa, while the construction and maintenance of transport infrastructure is the responsibility of government, often financed through borrowed funds, the provision of services is often left to the private sector.

64. In most African countries, only a few percent of the population own cars. The great majority of the population is dependent on public transportation, walking or cycling, with a growing number using motorcycles. Nonetheless, in some of the larger cities, limited transport infrastructure is resulting in serious congestion, with peak-hour traffic delays of one to two hours for many commuters. In Cairo, for example, average peak-hour traffic moves at less than 10 km/hr.

65. Major challenges for the transport sector in Africa are:

(a) *Increasing access and affordability.* There is need to expand transport networks, particularly secondary and tertiary networks, and public transport (buses and rail) to improve access to markets, employment, health care and education. Lack of access in rural areas and peri-urban informal settlements is a particular challenge to sustainable development. It is not uncommon for people in rural areas to walk over 10 km each way to farms, schools and clinics.

(b) *Improving road maintenance.* Road maintenance in Africa is in crisis. Over a two-decade period (1964-84), $45 billion worth of road infrastructure assets were lost in eighty-five developing countries owing to inadequate maintenance.[26] Essential maintenance is not carried out on a timely and satisfactory basis, increasing vehicle operating costs and reducing productivity, economic growth and social development.

(c) *Improving transport planning, policy and regulations.* Democratization, decentralization, globalization and the emergence of a strong entrepreneurial class in many African countries are resulting in growing personal incomes and rapidly changing markets. Higher incomes and market changes generate demand for a greater variety and a higher quality of transport services than is currently available. There is thus a need for improving planning and implementation capacity for sustainable transport system to ensure safety, reduce adverse effects on health and the environment, and create conditions for stakeholder participation.

(d) *Rapid motorization.* With the increase of population and economic activities in African cities, the number of motor vehicles is growing at a faster rate than the proportion of urban space devoted to roads.

(e) *Improving markets and competitiveness in transport services*. In many countries, the public sector monopolizes legal public transport services, but cannot meet the growing demand. There is thus a need for policies to encourage greater involvement of the private sector, while strengthening regulatory institutions and performance standards to protect the public interest and ensure fair competition.

(f) *Enhancing community participation.* There is a need for increasing participation in decision-making on local transport investment and maintenance, establishing extension services to provide necessary technical advice and training, and supporting the development of rural transport. Low-cost labor-intensive projects for local road construction and maintenance and shifting the responsibility for road maintenance from central government to local authorities can be an important strategy.

(g) *Road safety and environmental protection.* Motorized transport, while playing a critical role in development, also causes accidents, traffic congestion, air pollution and noise. New vehicle technologies and traffic management systems can reduce these effects.

(h) *Lead emissions*. Africa is among the last regions where motor vehicles continue to use almost exclusively leaded gasoline.

(i) *Promotion of infrastructure for public and non-motorized transport.*

66. Lead from gasoline remains the most harmful pollutant in vehicle emissions, with particularly serious health impacts on infants and children. Many countries have found switching to unleaded gasoline practicable, technically feasible, cost-beneficial, and quick. In addition, the use of unleaded gas is a prerequisite to introducing catalytic converters which can help reduce other pollutants by as much as 90 percent.[27] A survey of the motor fuel supply in Africa indicates that Cape Verde, Egypt, Libya, Mauritius, Morocco, Reunion, Sudan, Tunisia and Western Sahara are presently using only unleaded gasoline, while the rest are using leaded gasoline, a dual system, or are introducing unleaded gasoline. The table in the annex reflects the status and efforts being made to shift to unleaded gasoline.

67. In most large cities of the developing world, formal public transportation systems, with large buses running on high-traffic routes, are not meeting the rapidly growing demand for transportation. In response to the demand, informal transportation provides essential transport services, especially for informal settlements, as well as making a major contribution to employment. Pedicabs, mopeds, motorized tricycles and motorcycles are often the only vehicles that can penetrate the narrow alleys in informal settlements and are used for short trips. Private vans, such as Nairobi's matatus, Manila's Jeepneys, and Jakarta's mikrolets, serve larger streets for longer trips. Informal transport often complements formal services, serving areas not served by the formal services and providing feeder services to the large buses on main routes or to rail services. Late at night, informal services may be the only means of transport for people without their own cars.

68. In some cases, the "informal" services are actually regulated private transport services, while in other cases they are strictly informal and officially illegal but unofficially tolerated. The informal transport sector is often highly organized through route associations, informal codes of conduct, and even vehicle dispatchers. In some cities, the informal transport sector provides up to 15% of urban employment – with sales and services providing additional employment - and is a particularly important source of employment for recent migrants to the city. For users, a diverse supply of formal and informal transportation modes provides people, particularly low-

income people, with reasonably reliable and affordable transportation and delivery services. Some cities are moving from official opposition, or reluctant tolerance, of informal transport to more active management to promote safety and convenience of passengers, complementarity of formal and informal systems, orderly traffic flow, decent working conditions for drivers, and environmental protection.[28]

69. Bicycles provide inexpensive transportation without air pollution, and with relatively little contribution to congestion. Four to eight bicycles can use the road space occupied by one car, and 20 bicycles can park in the space occupied by each car. Bicycles are particularly important for low-income people and young people. However, transportation infrastructure and policies in many cities are not supportive of safe and convenient cycling. In Kenya, a luxury tax on bicycles at the rate of 80 percent until 1986 was gradually reduced, and finally eliminated in 2002, resulting in a large increase in bicycle sales. Most African countries still tax bicycle imports as luxury items, limiting access by poor people to low-cost transportation.

70. In developed counties and in Latin America and Asia, a growing number of cities are promoting and facilitating the use of bicycles in response to increasing air pollution and congestion. Many cities in both developed countries and developing countries, including Bogotá (Colombia), Santiago (Chile) and Mexico City, are providing protected bicycling lanes or bicycle paths as part of their transportation policies.[29] Lima (Peru) is promoting bicycle use through a revolving fund supported by the World Bank providing credit vouchers usable in bicycle shops.[30]

III. WATER AND NATURAL RESOURCE MANAGEMENT

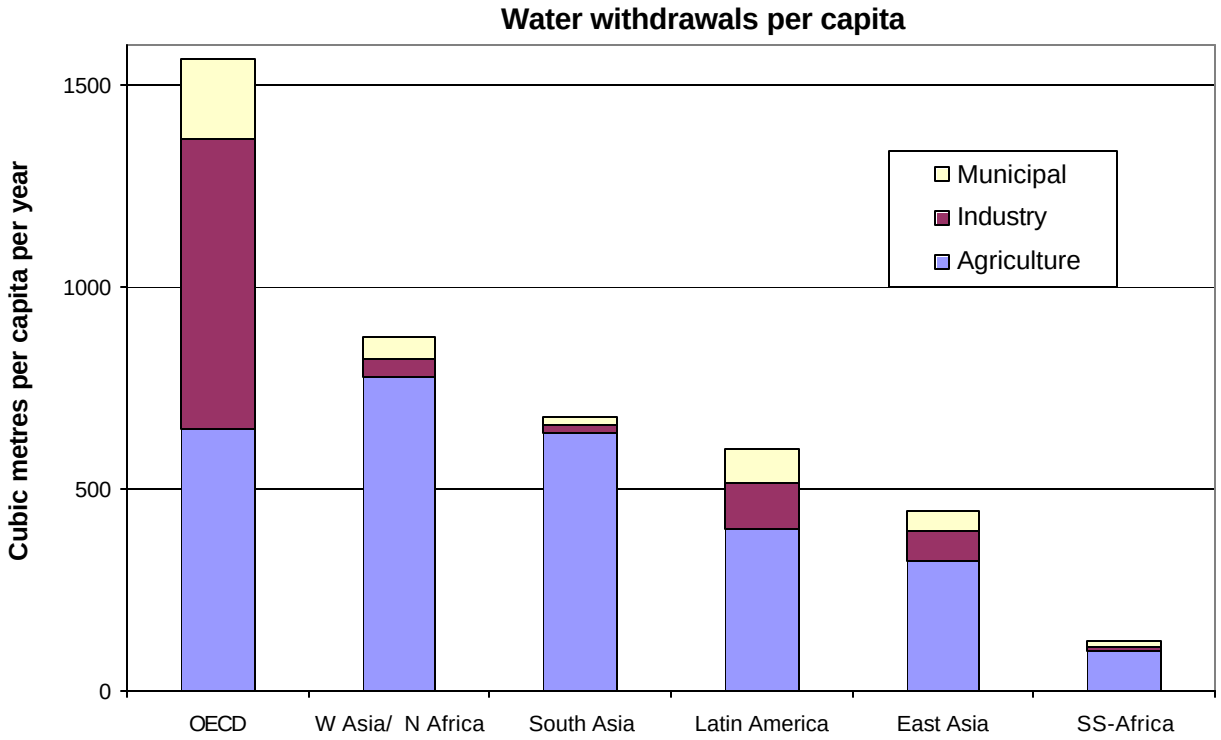
Water management

71. Freshwater availability and management are critical factors for sustainable development, including for agriculture, industry, and urban development. Western and Central Africa have relatively abundant water resources, while Northern Africa, the Horn of Africa and South Africa suffer from water scarcity. Overall, two thirds of Africa's land area is arid or semi-arid, and careful water management and water conservation are essential to meet the growing needs for water. Water resource development and management is particularly important in countries with a high dependence on agriculture as the main economic activity and source of livelihoods.

72. Many countries in Africa experience highly variable rainfall, with both floods and droughts. The result is a continent very vulnerable to climate change. Water stress (less than 1700 m^3/capita/year) or water scarcity (less than 1000 m^3/capita/year) already exists in 14 of the 53 African countries.[31]

73. Agriculture provides livelihoods for about 60 percent of the population in Africa and is the largest user of water, accounting for more than 88 percent of total water consumption. However, only 4 percent of cropland is irrigated in sub-Saharan Africa, and there is substantial undeveloped irrigation potential in many countries. Adequate and reliable supplies of water for irrigated agriculture can increase crop yields of crops by 100 to 400 percent, increasing incomes and reducing poverty.[32] As indicated in the figure below, in Sub-Saharan Africa, water consumption for all sectors is far below the levels in other regions, both developed and developing.

74. Agricultural production is also limited by irrigation inefficiency. It is estimated that about half of the region's irrigation water is currently lost through seepage and evaporation.[33] Improved management of water for agriculture could increase the effective irrigated area up to 44 percent while only using 14 percent more water.[34] Access to credit, marketing and agricultural extension services can multiply the positive impact of irrigation and promote the development of labour-intensive processing industries.



Source: DESA/DSD from World Water Vision

75. In its Action Plan of the Environment Initiative, NEPAD calls for integrated management of water resources to ensure sustainable use of water. In particular, it recommended activities to assess the availability of water resources and strengthen water resource management systems, with a focus on capacity-building and institutional strengthening and support for institutional, legislative, regulatory and economic reforms.[35]

76. The Conference on Water and Sustainable Development, held in Ghana in April 2002 and coordinated by the United Nations Inter-Agency Group on Water and the African Development Bank (AfDB), launched a Rural Water Supply and Sanitation Initiative to accelerate access to water and sanitation services in Africa, with a goal of 80 percent coverage by 2015. The West African Water Initiative and the EU Water Facility for Africa, the Caribbean and the Pacific, which are intended to catalyze additional funding and attract new partners for the water sector in Africa, are other examples of new partnerships to improve water and sanitation services. In addition, the African Ministerial Council on Water (AMCOW), within the overall framework of NEPAD, is strengthening intergovernmental and sub-regional cooperation on water supply and sanitation, monitoring progress of regional initiatives, analyzing financial and technological investments, and assessing best practices.[36]

77. While cities consume less than 10 percent of the total water used globally, the concentrated nature of that demand poses a heavy burden on limited local water supplies, both in terms of volume of demand and pollution from wastewater discharge. The high costs of water collection, treatment and distribution, as well as wastewater collection and treatment, are a major burden on public budgets and are beyond the capacity of most developing countries.

78. Water conservation measures in cities can enable a limited supply to provide greater effective services. Bulawayo, Zimbabwe, is located in a dry, drought-prone region with an average of 460 mm of rainfall per year. Due to the limited potential for increasing the water supply to address recurring water shortages, the city has taken a number of water conservation measures, including reducing leakage from the municipal water distribution system, reusing treated but non-potable water from water treatment plants for irrigating trees and lawns, and reusing higher quality water from the largest and most advanced treatment plant for irrigating grain and pasture. An increasing block-tariff pricing structure, with low prices for a small amount of water for basic needs, and higher prices for larger consumption, has reduced average water consumption by 23 percent while ensuring that basic social needs are met. At times of severe drought, water rationing is applied and the use of watering hoses is banned, reducing water consumption from the normal average of 140 litres per capita per day to 100 litres. These measures have been supported by public information campaigns for water conservation.[37]

Food production

79. Africa's land resources, although abundant, have seriously deteriorated in quality and productivity because of poor practices, exacerbated by inappropriate and inequitable land tenure systems. Food consumption has increased over the past three or four decades based on increasing imports.

80. Africa's total cereal production has declined since 1970. In the 1930s, Africa was a food exporter; in the 1950s it was self-sufficient. By 1980 sub-Saharan Africa was importing eight million tons of cereals annually.[38] The experience over the past several decades suggests that the low level of food production in Africa and the frequent famines in the Horn of Africa are not simply due to climatic variability or poor African soils, as sometimes suggested, but also to policy and institutional failure. While drought may affect production in some years, climate variability does not explain the continuous decline of food production for three or four decades. Nonetheless, Africa remains highly vulnerable to the impacts of climate change on agriculture, with limited capacity for adaptation.

81. NEPAD's Action Plan of the Environment Initiative calls for the development of sustainable agriculture and stresses the need to promote interactions between researchers and farmers, participation of women in decision-making processes on agriculture, use of appropriate technologies for sustainable agriculture, early warning systems for drought or floods, access to affordable funding and credit, and access to international markets for agricultural products.[39]

82. Agricultural products, particularly coffee, tea, cocoa, and rubber, constitute Africa's main exports, and Africa is at the same time a net importer of food. This pattern of commodity exports and food imports is due in part to subsidies for food production and export in developed

countries. While specialization of production and trade can promote development, the dependence of African countries on food aid and food imports distorts development priorities, alters consumer tastes and preferences, and undermines efforts to increase domestic food production.

83. As a result of its dependence on trade in primary products, Africa has remained largely marginalized from the integration of world industrial production and financial flows that has supported high growth rates in other developing countries, particularly in East Asia. The natural resource-based commodity exports are also subject to large price fluctuations in international markets, making economic planning difficult. The largest trading partner for most African countries is the European Union, which takes accounts 50 percent of African exports, and provides about 50 percent of imports. North America is second, accounting for 9 percent of exports and 7 percent of imports.[40]

84. Export of organic agricultural products at premium prices to meet the rapidly growing demand in developed countries is often cited as having a large potential for African agriculture. For Africa, organic farming has the advantage of reducing dependence on expensive imported chemical fertilizers and pesticides, while preserving soil fertility. There is a need for a balanced strategy to tap export markets for organic food, while increasing production for local consumption to reduce dependence on imported food.

85. Among the issues that need to be considered in promoting sustainable food production and consumption are:

(a) Promoting the emerging maize and cassava green revolution. Maize is an important staple food in Eastern and Southern Africa, while cassava is a staple in West Africa. There is a need to promote improved varieties and techniques, together with processing, marketing and transformation of maize and cassava to value-added products, as well as the use of these crops as raw materials for agro-industry.

(b) Promoting research and development on improved agricultural technologies, with support systems and services to increase agricultural productivity and improve marketing and food processing efficiency;

(c) Increasing food production for local consumption.

86. Increasing food production and consumption requires fertile land and a good water supply, as well as the ability to harvest, store and distribute products to consumers. Sustainable agriculture requires:

(a) Conservation of soils and nutrient status;

(b) Optimal use of fertilizers;

(c) Selection and preservation of seeds and genetic stock;

(d) Careful use of pesticides;

(e) Efficient use of water and energy;

(f) Protection of water quality though the careful disposal of wastes;

(g) Minimization of waste and productive use of by-products.

87. New crop varieties and cultivation techniques could increase agricultural production in Africa. The West Africa Rice Development Association (WARDA), using molecular biology and conventional breeding, has developed new rice varieties that combine the ruggedness of African rice with the productivity of Asian rice. In the mid-1990s, WARDA started on-farm testing of NERICA under rain-fed conditions, with farmers participating as partners. Farmers in Guinea, with technical backstopping by WARDA scientists and funding by the World Bank, led the way in adopting these varieties and the related technical packages. By 2000 about 20,000 farmers were growing rice on 2500 hectares using the new varieties. The most important characteristics of these varieties are early maturity (3 months), pest, disease and water stress tolerance, reduced weeding requirements, and high yields. This promising technology can now be up-scaled. The success achieved to date was due to: (i) scientific cooperation between government agencies, WARDA and donors; and (ii) participation of farmers in variety selection.[41]

Access to international markets

88. Improved access to international markets could provide access to better and cheaper supplies, promote economic growth and facilitate technology transfer. However, there are a number of obstacles to more effective integration of African countries in international markets. Africa has a large number of small and landlocked countries, the highest ocean freight rates for grains, the lowest communications capacity (e.g. telephones per 100 people) and the lowest electric power capacity.

89. African countries are beneficiaries of various unilateral preferential trading schemes offered by the European Union, the United States and Canada. These include the Generalized System of Preferences (GSP) of OECD countries, the Everything-But-Arms (EBA) initiative of the EU for least developed countries (as part of its GSP Scheme), and the African Growth and Opportunity Act (AGOA) of the United States, which extends benefits under its GSP for African countries. African countries also benefit from preferential access into the EU market under the Lomé Trade Preferences for ACP States, which has been continued until December 2007 under the framework of the Cotonou Agreement. North African countries have been engaging the EU under the Euro-Mediterranean Association Agreements, including the negotiation and implementation of free trade agreements. South Africa has concluded a Trade and Development Agreement with the EU.

90. However, industrialized countries continue to impose various market access barriers on African exports, including import tariffs, non-tariff barriers, and domestic production and export subsidies. Tariff peaks in Japan and EU, for example, are concentrated on agricultural and food products produced by developing countries, including dairy products, vegetables, processed coffee, tea, cereals, cocoa and tobacco products. The degree of tariff escalation is also significant. For example, in the EU, the import of cocoa beans attracts a zero import duty, but semi-processed cocoa paste faces an import duty of 9.6 percent, and fully processed chocolate faces a tariff or tariff equivalent of 25 percent. Developed country phyto-sanitary regulations for

protecting against agricultural pests and ensuring food safety also represent a challenge to African agricultural exports.

IV. INDUSTRIAL DEVELOPMENT

Industrialization

91. Three features characterize Africa's industrial sector. First is the low average annual growth of industrial output of only 0.6 percent per year in recent years, while population growth has averaged 3 percent. The share of manufacturing in GDP averaged only about 11 percent in the 1990s. Secondly, the industrial sector is characterized by a low level of capacity utilization (30-50 percent on average). Thirdly, Africa industries are based on imports of technology, inputs and expertise from developed countries. Africa contributes only about 1 percent to the world industrial output, and even that small contribution comes mainly from the 12 out of 53 African countries that possess a relatively diversified industrial base. The remaining 41 countries together contributed only 28 percent of the region's manufacturing value-added.[42]

92. Foreign direct investment (FDI) in the industrial sector is very limited, and Africa continues to receive the lowest share of FDI of any region in the world. Obstacles to increasing foreign private investment include unstable and uncertain macroeconomic and business environments, poor governance (including corruption), limited rule of law and lax enforcement of contracts, inadequate legal and regulatory frameworks (including poor tax administration), a lack of transparent public-private sector dialogue, weak infrastructure and institutions, slow human capital development; and financial systems characterized by low levels of financial intermediation and sophistication. The rather limited FDI to Africa comes mostly from a few OECD countries, notably France, Germany, the United Kingdom and the United States.

93. With the emergence of a group of newly industrializing states in Southern Africa, Africa may now be entering a new era of industrialization, based largely on textile exports. Botswana, Mauritius, Madagascar, Swaziland and Lesotho are among these countries.

94. In Mauritius, the garment industry started to develop in the 1970s, after the Multi-Fiber Arrangement (MFA) quotas began to restrict the industry in other garment-exporting countries, especially in Asia. The exemption of Mauritius from these restrictions encouraged the development of the garment sector, mostly in export processing zones (EPZs). EPZ development has been a central component of the country's economic development strategy. Through the years, Mauritius has gradually emerged as a middle-income country, and costs, such as wages, have increased. As a result garment manufacturers in Mauritius have started to subcontract the labour-intensive part of garment production to countries with lower labour costs, particularly Madagascar.

95. In Madagascar, the garment industry took off at the beginning of the 1990s and grew to employ about 65,000 people by 2001. Madagascar's main attraction for garment manufacturers is its low labour costs. Manufacturers consider Madagascar to be inexpensive even when accounting for other problems such as the bad infrastructure.

96. In Lesotho and Swaziland, investment in the garment industry started in the 1990s, drawn by a favorable investment climate — most importantly the export possibilities presented by favorable and quota-free entry to the United States and European markets. Companies in Lesotho and Swaziland produce mainly for the United States market, for large retailers such as the Gap, Wal-Mart and K-Mart. Some companies produce for the regional market as well, mostly for South Africa. A small quantity of goods is shipped to Canada and the European market. The industry has gotten an enormous boost from the US African Growth and Opportunity Acti (AGOA), which brought new opportunities and gave garments from Lesotho and Swaziland duty-free and quota-free access to the United States market

97. Garment manufacturers have invested in Botswana mainly due to the strong combination of incentives offered by the government through its Financial Assistance Package (FAP). The FAP incentives, under which the majority of companies have invested, include an unskilled labour grant through which manufacturers are refunded 80 percent of their factories' shop-floor wage bill during the first two years of production. This is reduced to 60 percent for the third year, 40 percent for the fourth year, and 10 percent for the fifth year. However, the strong reliance on the FAP to attract investment has not been a sustainable development option for Botswana, as many companies seem to move out after a few years without having made any substantial investment.[43]

Corporate social responsibility

98. One of the actions called for in the JPOI is to enhance corporate social and environmental responsibility and accountability. A key development of the past decade has been the highly publicized public pressure on multi-national corporations to improve their operations in developing countries in relation to human rights, environmental pollution and labour conditions.

99. The World Business Council for Sustainable Development offered the following definition: "Corporate Social Responsibility is the continuing commitment by business to behave ethically and contribute to economic development while improving the quality of life of the workforce and their families as well as of the local community and society at large."[44]

100. In the African context, corporate social and environmental responsibility can address issues that affect the daily life of Africans through capacity building, transfer of technology, support for local communities, protecting and improving the environment, and health care and education, notably for HIV/AIDS. Environmental management accounting and environmental and social auditing are also important means for implementing and monitoring corporate environmental and social performance. As corporations have a responsibility to provide a return to their investors, government policies and regulations and enforcement must support corporate responsibility and ensure that social and environmental responsibility are not uncompetitive.

101. Public pressure in developed countries on multinationals operating in developing countries extends to their sub-contractors and suppliers as well as their own operations. Some multinationals have introduced a supply-chain management approach, assisting their suppliers in improving their technology, operations, management, accounting, working conditions and environmental performance, both to improve productivity and to protect themselves from

criticism and consumer resistance. Governments can support such efforts to improve management capacity and industrial performance, while maintaining competitiveness, by working with the multinationals and monitoring organizations to set appropriate standards and assist companies to meet them.

Working conditions

102. Industrial working conditions vary greatly among countries, with African workers often experiencing poor working conditions characterized by:

(a) Unhealthy and unsafe workplaces;
(b) Compulsory overtime;
(c) Trade union repression;
(d) Low wages;
(e) Lack of government protection and limited enforcement of labor laws.

103. Restrictions on trade union activity in developing countries can be a matter of concern to consumers in developed countries. In a survey conducted in Swaziland by a developed country monitoring organization, the companies visited severely restricted the right and ability of unions to organize and represent their members' grievances to employers. Existing labour legislation also restricts the power of unions to influence working conditions. In one company, a worker who was organizing members for the union was fired and others threatened with termination of contract if the organizing continued. In several factories, workers were warned not to organize. While union organizing is allowed by law, the Department of Labor is not able to effectively enforce the law. The Department of Labor indicates that it is tougher on transgressions by domestic companies than on foreign-owned companies. Minimum wages for a "casual laborer" are $14 per week, while a first level sewing machinist receives a minimum wage of $21 per week. However, instead of using minimum wages as a floor, companies tend to use them as a ceiling for wages.[45]

Cleaner production

104. Cleaner production refers to the introduction and use of technologies, materials, production processes, management systems and operating practices that increase material and energy efficiency and reduce risks to humans and the environment.[46] In general, newer technologies from developed countries are cleaner than older technologies, both because they are more efficient and because they have been designed to meet the increasingly stringent environmental regulations in developed countries. Africa, as a new industrializing region, has the potential to avoid the environmentally damaging industrialization that European and Asian countries experienced during their industrialization through use of modern technologies.

105. However, many African countries, with very limited investment capital, have used older, less expensive and less efficient technologies.[47] They may have limited access to environmentally-sound technologies, either because it is protected by the companies that developed it, or through lack of information. National Cleaner Production Centres have been established in Ethiopia, Kenya, Mozambique, Morocco, South Africa, Tanzania, Tunisia, Uganda and Zimbabwe to assist companies in acquiring clean technologies. However, many

industries are still unaware of the potential benefits of cleaner production, and legislation, regulation and enforcement to require or encourage cleaner production is usually weak or non-existent.

106. In many cases in both developed and developing countries, poor performance is due to lack of understanding of the costs of waste and efficiency and how to reduce those costs. Mauritius is planning the introduction of industrial waste audit regulations to identify cost-effective ways to improve productivity and encourage industries to self-regulate and adopt cleaner technologies, as a precursor to the eventual adoption of the ISO-14000 standard. Mauritius is also using award schemes for environmental excellence, local accreditation and certifying bodies, as well as providing soft loans for investments in domestic solar heaters. The country is also participating in a UNEP pilot project to implement cleaner production in selected industries: sugar production, food processing, knitwear manufacture and tourism.[48]

107. Leather making is an important manufacturing sector in Africa and is also a major foreign exchange earner. However, the industrial pollution generated by the sector is a prime area of public and government concern. An African regional project was launched by UNIDO in 1997 with support from Switzerland to reduce major tannery pollutants such as chromium salts, sulphides, and nitrogen compounds. The project introduced five cleaner technologies: high-exhaustion chrome tanning; low-sulphide dehairing; compact retanning; carbon dioxide deliming; and wet-white processing. Trials conducted at 11 tanneries in Ethiopia, Kenya, Malawi, Namibia, the Sudan, Uganda, Zambia and Zimbabwe indicated good potential for all five processes.

108. A key tool in developing cleaner production strategies is an environmental audit that assesses a company's potential to improve its environmental performance. Such audits have been carried out in Africa in collaboration with the National Cleaner Production Centres established by UNIDO and UNEP in nine countries in the region. In Zimbabwe, the Bata Shoe Company's tannery in Gweru has an excellent record of environmental care and a long-standing commitment to good housekeeping and cleaner production through technology upgrading and adaptation. Under a UNIDO project financed by the Netherlands, Midiron Enterprises in Bulawayo, Zimbabwe, acquired and tested a hair-separation unit to contain effluents and solid waste in a cost-effective way.[49]

109. Improving water efficiency and reducing water pollution from industry is also a function of National Cleaner Production Centres (NCPC). In a Uganda fish processing plant, for example, cleaner production methods reduced water consumption by 30 percent, with a savings of $6000 per year.[50]

Hazardous waste

110. The OECD defines hazardous wastes as "wastes, which, if improperly managed, could harm man and/or the environment because they are toxic, corrosive, explosive or combustible."[51] Hazardous waste can include contaminated oils from gas stations, acids and solvents produced by chemical and pharmaceutical companies, as well as by-products of the fertilizer industry. In

Africa, major hazardous wastes include oil from transportation, redundant pesticides, hospital wastes and chemical wastes.

111. As Africa industrializes, hazardous wastes are bound to increase, particularly from such industries as metals, mining and processing, and pharmaceuticals. At present, hazardous wastes from hospitals, clinics and wood industries, for example, are often dumped in rivers or seas without any treatment. Some wastes are also dumped in unimproved landfill sites, where they can contaminate soil and groundwater. Hazardous wastes have also been exported to Africa from developed countries either for recycling, reuse or disposal. The price of hazardous waste disposal in the developed world can be over $2500 per ton, prompting the rise of international "waste merchants," who arrange to dump the hazardous waste in third world countries, with Africa as a favorite target.

112. The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal addresses the need to effectively manage hazardous wastes, but many African countries have not yet ratified the Convention. In addition, the Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade entered into force in February 2004. At the regional level, the OAU has adopted the 1991 Bamako Convention on the Ban of the Import into Africa and and the Control of Transboundary Movement and Management of Hazardous Wastes within Africa, which contains all the elements of the Basel Convention. What Africa now needs is concerted and coordinated efforts at the national and regional levels to raise awareness and build human and institutional capacity for policy and legal reform and enforcement addressing hazardous waste.

Persistent organic pollutants (POPs)

113. Persistent organic pollutants (POPs) are a serious threat to human and ecosystem health, and some of these POPs are widely used pesticides in Africa.[52] Once released into the environment, POPs can accumulate in humans or other species, allowing very low levels of POPs in water or soil to magnify into serious health or environmental problems.

114. The most urgent chemical problem Africa faces today is the huge stockpiles of obsolete pesticides and other chemicals. Virtually every African country has such stockpiles that have accumulated over periods as long as 40 years. The African Stockpiles Programme estimates that at least 50,000 tonnes of obsolete pesticides, as well as tens of thousands of tonnes of contaminated soil, have accumulated in African countries.[53] Many of these chemicals and their containers are in poor condition and threaten local and regional environments through the contamination of soil, water, food and air.

115. The Africa Stockpiles Programme offers several reasons for the huge African stockpiles, including (1) inappropriate procurement by parastatal agencies of products that farmers are unable or unwilling to use; (2) untimely distribution and delays in moving products from ports to warehouses to farmers, resulting in missed applications and unused quantities at the end of the season; (3) inadequate storage and stock management; and (4) donations in excess of need.

116. Today, many African countries are signatories of the Stockholm POPs Convention, which calls for banning and destruction of some of the world's most dangerous chemicals, and which enters into force in May 2004. Of the 12 persistent organic pollutant (POP) chemicals currently targeted by the Stockholm Convention, 9 are pesticides. These pesticides make up an estimated 30 percent of known obsolete pesticide stockpiles. Clean-up work has commenced in several countries with assistance from organizations such as the Food and Agriculture Organization (FAO).

Sustainable public procurement policies

117. Governments, local authorities, large institutions and large companies are major consumers of goods and services. Some have used their large purchasing power to take a leading role in changing consumption patterns and promoting markets for sustainable goods and services.

118. In Africa, because of the small size of the private sector, the public sector, at all levels, is the largest economic sector apart from agriculture, constituting about 9 to 13 percent of GDP. The public sector purchases a variety of goods and services for education, health, roads, defense and security, as well as agricultural and industrial products.

119. For Sub-Saharan Africa as a whole, this means a $30 to $43 billion public procurement market.[54] Although the shares of South Africa and Nigeria, with public sector spending of $16 and $23 billion, dominate the region, the remaining $13-$19 billion in other countries remains significant, particularly relative to the small manufacturing and modern services sector in those countries. The use of this money to buy products that meet economic, social and environmental considerations can be a large boost to the market for those products and set an example for private sector and household purchasing.

120. A number of governments, mainly in developed countries, have initiated “green” procurement programmes, focusing their purchasing, where possible, on environmentally sustainable goods and services. Government purchases of energy-efficient lighting, air conditioners, refrigerators, computers and other appliances, and fuel-efficient or low-emission vehicles, for example, can make government operations more sustainable, while promoting markets for such products for other consumers. While such products may be slightly more expensive to purchase, the savings in operating costs can more than repay the additional initial cost. Another example, for countries with large forest areas, might be purchasing wood products from sustainably managed forests, which could promote such forestry. Where water is scarce, public procurement of water-efficient toilets, showers and washing machines in public institutions could conserve water for other purposes and ensure availability of such products and related services for others.

121. A number of governments have also used public procurement to advance social goals, such as employment, anti-discrimination, good labour conditions and human rights. South Africa, within the framework of the Preferential Procurement Policy Framework Act (2000), promotes domestic industries, in particular, small, medium, and micro-enterprises, while adhering to international procurement standards.

122. Introducing sustainable public procurement can be difficult, particularly where administrative capacities are weak. It should therefore start slowly, with a few products and simple criteria. It could be done as part of general improvement in public procurement systems. In Africa today, national governments and development assistance agencies are promoting public procurement reform, and over one fourth of the countries in Africa are believed to have launched public procurement improvement programmes.[55] The Common Market for Eastern and Southern Africa (COMESA) has been designated as the focal point for procurement reform in that sub-region and had received funding from the African Development Fund for the purpose.

123. The nature and characteristics of public sector procurement reform varies from country to country. Some countries aim to reduce excessive restrictions and regulations, while others are trying to control and manage public spending, and still others focus on strengthening contract enforcement mechanisms. In all cases, the goal of public sector procurement reform is to ensure that public funds are used effectively and efficiently and for purposes they have been designed for, to establish a system that delivers the right item at the right time at the right price, to establish a transparent public accountability system, and to instill public confidence in government. Building sustainability criteria, together with life-cycle costing, into the system could contribute to those goals.

124. At the global level, government procurement reform has become an important issue in the WTO. At the 2001 Doha Ministerial meeting, there was consensus that WTO-sponsored public sector reform should be limited to transparency only, and would not restrict the scope for countries to give preferences to national contractors.

V. REGIONAL COOPERATION

NEPAD

125. To promote development in Africa, African leaders, through the African Union, launched the New Partnership for Africa's Development (NEPAD), which is accepted throughout the region, and by the international community, as the primary development framework for Africa. Regional efforts to promote sustainable consumption and production should fit into the NEPAD process. For the environmental dimension, NEPAD commissioned the African Ministerial Conference on the Environment (AMCEN) to prepare an Action Plan of the Environment Initiative (APEI).[56]

126. The APEI was developed through eight thematic workshops: on desertification, invasive species, poverty and environment, forests, wetlands, health and environment, marine and coastal environment and freshwater resources, and climate change. The APEI was adopted by NEPAD to address the environmental challenges facing the continent, to combat poverty, and to contribute to the long-term socio-economic development of the region. Economic growth, income distribution, poverty eradication, social equity and better governance were identified as key issues for Africa’s environmental agenda. The Action Plan highlights the key role of AMCEN in achieving NEPAD’s goals of implementing national strategies for sustainable development by 2005 and reversing the loss of environmental resources by 2015.

127. The NEPAD Action Plan (in Annex II) contains an extensive list of projects identified by the NEPAD thematic workshops. Under sustainable consumption and production the following projects were highlighted:

(a) Assessment of the current status of production facilities;
(b) Build capacity to assess alternative cleaner production technologies;
(c) Development of cleaner production capacity;
(d) Research into alternative approaches to the use of current hazardous formulations;
(e) Development of strategies for rehabilitation of contaminated sites;
(f) Development of integrated vector management programmes.

128. Based on a long-term approach, the APEI will be implemented within the NEPAD framework, taking into consideration the achievements and work programme of AMCEN and other relevant African initiatives. An implementation mechanism and financial resources are still required and the international community, African countries and the private sector have been called on to fill the need. At the Second Special Session of AMCEN on the Action Plan of the Environment Initiative (June 2003), the Ministers requested the AMCEN President to submit a detailed report on the implementation of the Action Plan at the next AMCEN meeting in June 2004 in Tripoli.

129. A NEPAD partnership conference was held in Algiers in December 2003 to consider the funding of projects identified in the Action Plan. The Conference adopted the Algiers Declaration, recognizing that "partnership among African countries themselves and between them and the international community are key elements of a shared and common vision to eradicate poverty … and place their countries on a path of sustained economic growth and sustainable development." It also called for the speedy implementation of the NEPAD Action Plan of the Environment Initiative.[57]

130. As part of the APEI, NEPAD has also prepared a Strategic Plan to Build Africa's Capacity to Implement Global and Regional Environmental Conventions. Other related efforts are NEPAD's Strategic Plan for Capacity-Building for Africa (SPCB) and GEF's Capacity Development Initiative.

AMCEN

131. The African Ministerial Conference on the Environment (AMCEN) was established in 1985 to provide continent-wide leadership by promoting awareness and consensus on global and regional environmental issues, especially those relating to the international conventions on biodiversity, desertification and climate change. AMCEN also develops common positions to guide African representatives in negotiations on legally-binding international environmental agreements. AMCEN is housed in UNEP headquarters in Nairobi with its own secretariat. AMCEN holds regular sessions every two years, with special sessions sometimes convened in other years. A regular session of AMCEN is to be held in Tripoli, Libya, in June 2004, and a special session is planned for Dakar, Senegal, in early 2005.

The African Union

132. Headquartered in Addis Ababa, the African Union (AU) convenes annual meeting of the Heads of States and Government of all African countries. The AU initiated and launched the New Partnership for Africa's Development (NEPAD).

ECA Conference of Ministers

133. The Economic Commission for Africa (ECA) is a regional arm of the United Nations, mandated to support the economic and social development of its 53 Member States, foster regional integration, and promote international cooperation for development in Africa. The ECA Conference of Ministers of Planning and Finance meets annually to review economic and social development in Africa. The Conference also serves as an economic arm to the African Union.

VI. CONCLUSION

134. A strategy for promoting sustainable consumption and production comprises a set of policies and programmes to make more efficient use of material, human and environmental resources, to reduce pollution and waste and improving productivity, and to make more effective use of investment capital. In the African context, such a strategy should address particularly the need for economic growth and poverty reduction.

135. Developed countries should take the lead in promoting sustainable consumption and production, particularly those related to over-consumption, while developing countries need to focus on economic growth, poverty reduction, natural resource management, and improving health. At the same time, they have the opportunity to avoid unsustainable patterns of consumption and production and to "leapfrog" to sustainability. The experiences of developed countries in making consumption and production more sustainable should be made available to developing countries.

136. National strategies, policies and programmes for sustainable consumption and production should be integrated into national sustainable development strategies and national poverty reduction strategies. The development of a regional framework for information exchange and cooperation on sustainable consumption and production can encourage and support national activities. The international 10-year framework can provide external support and assistance for regional and national activities in Africa. A first priority for most countries in Africa will be raising awareness of the potential for making consumption and production more sustainable, with economic, social and environmental benefits. This will be followed by activities for capacity building at the policy, institutional and human resources level.

137. In the area of urban development and management, priorities for sustainable consumption and production include waste management and transportation. Municipal waste management systems should integrate modern international approaches to waste disposal, particularly sanitary landfills, with local solutions to waste collection and recycling, providing employment opportunities for unskilled workers where possible. Hazardous waste should be kept separate from ordinary solid waste and disposed of safely. For transportation, a priority should be local

solutions providing convenient and affordable transportation for all, including formal public transport systems and informal transport, as well as provision for safe walking and cycling.

138. In the area of water and natural resource management, a priority should be development and careful management of available water resources and protection of water quality. Where large unused water resources exist, a priority should be to increase water supplies, particularly for irrigation. Where water is scarce, a priority should be to use water more efficiently in all sectors.

139. In the area of industrial development, a priority should be to use modern, clean, energy and water-efficient technologies. Government policies and programmes should promote cleaner production, working with national cleaner production centres. Policies should also encourage corporate social responsibility with respect to working conditions and environmental performance.

140. Africa has an emerging common political will in the form of NEPAD, and increasing capacity, to face the enormous challenges of sustainable consumption and production in support of long-term sustainable development.

Annex 1

AFRICA LEADED GASOLINE CURRENT STATUS BY COUNTRY

Country	Leaded only	Unleaded	Dual system	Future Plan
Angola	X			attended 2001 Dakar Conference and SADC Sub-regional Workshop; future plans unknown
Benin	X			-adopted action plan at Cotonou Subregional meeting in April 2002; governments to change standards for lead content in gasoline to 0.15 g/l in December 2003 and 0 g/l by December 2004
Botswana			X	dependence on supply from South Africa to result in phase-out of leaded petrol by 2006
Burkina Faso	X			government has set up a technical committee (CTESP) to implement action plans to phase out leaded gasoline; activities were to be launched by April 2002; progress unknown
Burundi	X			workshop to formulate action plan being organized;
Cameroon	X			- Ministerial Declaration stating that the country will stop distributing leaded petrol in November 2005
Democratic Republic of Congo	X			Held national level workshop on elimination of leaded gasoline in June 2002; future plans unknown
Côte d'Ivoire	X			government started study and drafted various decrees on exhaust
Equatorial Guinea	X			-imports petrol from Cameroon and Gabon, so has leaded until end 2005, when they switch over
Ethiopia		X		fully unleaded as of January 2004
Gabon	X			will start producing unleaded at the end of 2005
Ghana		X		fully unleaded as of January 2004
Kenya			X	unleaded available in major cities; no firm date from government on fully phasing out leaded gasoline; Task Force set up in September 2003 to look at issue
Lesotho			X	-dependence on supply from South Africa to result in phase-out of leaded petrol by 2006
Madagascar			X (major cities)	attended 2001 Dakar Conference; unleaded introduced in major cities; future plans unknown
Malawi	X			expected to go fully unleaded in February 2004
Mali	X			working with World Bank on development of an Action Plan; workshop to be held later this year
Mauritania		X		fully unleaded as of January 2004
Mozambique			X (major cities)	expected to go fully unleaded in February 2004
Namibia			X	dependence on supply from South Africa to result in phase-out of leaded petrol by 2006
Niger	X			adopted action plan at Cotonou Subregional workshop in April 2002; government to change standards for lead content in gasoline to 0.15 g/l in December 2003 and 0 g/l by December 2004
Nigeria	X			adopted action plan at Cotonou Subregional Workshop in April 2002; to reduce lead content from 0.45g/l to 0.15g/l in 2002 to

				lead-free in 2003 and onwards -expected to be fully unleaded by end 2003
Rwanda	X			expected to be fully unleaded by March 2004
Sénégal	X			decree issued in January 2002 provides that maximum lead content must be reduced from 0.8 g/l to 0.15 g/l in 2003 and will be completely phased out by 2005;
South Africa			X	total phase-out of leaded petrol planned for 2006
Swaziland			X	dependence on supply from South Africa to result in phase-out of leaded petrol by 2006
Tanzania			X (major cities)	national workshop to develop an action plan held in June 2003; awaiting response from Government
Togo	X			adopted action plan at Cotonou Subregional Workshop in April 2002; governments to change standards for lead content in gasoline to 0.15 g/l in December 2003 and 0 g/l by December 2004
Uganda	X			very nascent stages of planning workshop to formulate action plan; expected to take place in late 2003;
Zambia			X	attended 2001 Dakar Conference; Energy Regulation Board has unleaded fuel specification, but future plans unknown
Zimbabwe			X	imports recently suspended)

Source: UNEP, Partnership for Clean Fuels and Vehicles. http://www.unep.org/pcfv/Documents/MatrixAfricaLead.pdf

Notes

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