

Environmental Determinants and Management Systems for
Human Health and Ecosystem Integrity in Africa

First Synthesis Report

On the Situation Analysis and Needs Assessments for the Implementation of the
Libreville Declaration on Health and Environment in Africa

October 2010



Aknowledgements

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This work was supported technically and financially by WHO, UNEP, SAICM, France, Germany, Spain and Rockefeller Foundation

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Foreword

The First Inter-Ministerial Conference on Health and Environment in Africa held in Libreville, August 2008, represented an important first step towards intersectoral actions at national and regional levels in support of the betterment of human health and ecosystem integrity in the African continent. Through the Libreville Declaration, countries committed themselves to establishing a strategic alliance between health and environment as a basis for plans of joint action.

Remarkable progress has been made in the period that has followed. The work of countries has been supported by WHO and UNEP working with partners both inside and outside the United Nations system. Agreement has been reached on a roadmap that sets out the process for implementation of the Libreville Declaration and on key national and international milestones for the period 2009 - 2010. Tools and methodologies have been developed to undertake country situation analyses and needs assessments to allow consensus identification of national priorities and the development of national plans of joint action.

This synthesis report draws together that work of countries to provide, for the first time, an opportunity to examine an African continent-wide assessment of the state of health and environment linkages in order to reach evidence-based agreements on regional priorities. The countries of Africa and those who supported them in this important work are to be congratulated.

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Acronyms and abbreviations

CTT	Country Task Team
DALY	Disability Adjusted Life Year
EBD	Environmental Burden of Disease
EIA	Environmental Impact Assessment
GEF	Global Environment Facility
HELDS	Health and Environment Data Management System
HESA	Health and Environment Strategic Alliance
HIA	Health Impact Assessment
IDSR	Integrated Disease Surveillance and Response
JTT	WHO-UNEP Joint Task Team
MDG	Millennium Development Goals
MEA	Multilateral Environmental Agreement
NAPA	National Adaptation Programme of Action
NGO	Non Governmental Organization
NIP	National Implementation Plan
NPJA	National Plan of Joint Action
PRSP	Poverty Reduction Strategy Paper
QSP	Quick Start Programme
SAICM	Strategic Approach to International Chemicals Management
SANA	Situation Analysis and Needs Assessment
SoE	State of the Environment
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
WHO	World Health Organization
WMO	World Meteorological Organization

Executive Summary

At their first conference, African ministers of health and ministers of environment explored the nature of, and opportunities offered by, the linkages between their respective sectors. They recognized the mutual importance and relevance of their sectors and the synergies that may be derived from intensified collaboration. They adopted the Libreville Declaration with its 11 priority actions, which committed their countries to establishing a strategic alliance between health and environment as a basis for plans of joint action.

A total of 12 countries have undertaken and completed a process of Situation Analysis and Needs Assessment (SANA) for the implementation of the Libreville Declaration, as a prerequisite for the development of national plans of joint actions. The SANA is a process that uses standardized procedures and methodologies, based on technical guidelines and tools prepared jointly by the World Health Organization and the United Nations Environment Programme, and with the support of partners.

The present report provides a synthesis of the outcomes of the SANA results in 12 countries. It lays out, for the first time, a comprehensive situation analysis of the state of environmental determinants of human health and ecosystem integrity and relevant management systems in Africa.

This report confirms that a large proportion of the disease burden in Africa is determined by environmental factors. Risks associated with these determinants occur either naturally (soil erosion, floods, sea-level rise, volcanic eruption, earthquakes, gas release, and drought) or as consequences of human activity (deforestation, loss of biodiversity, disease vectors, drought, marine pollution, lack of sound management of chemicals, hazardous and non-hazardous wastes, organic drinking water pollution, air pollution, floods, etc.). In addition, the above risks are exacerbated by the active and continuous natural degradation of the main African ecosystems (forest, humid and dry savannah, arid and semi-arid areas, wetlands, highlands and mountains), which are also being actively and continuously degraded by human activity.

National systems for the management of the determinants of human health and ecosystem integrity are in place, but are inadequate. Health and environment strategic alliances have not yet been operationalized formally. There is still an absence of an overarching framework to guide the management of these health and environment linkages that limits collaboration between the health and environment sectors. Poverty Reduction Strategy Papers (PRSPs) prepared by most countries towards the achievement of the Millennium Development Goals could provide a suitable framework for the coordination, monitoring and evaluation of cross-

sectoral initiatives, especially to address health and environment linkages. However they lack specific mechanisms to develop and implement intersectoral programmes.

In almost all countries, there are national institutions working on health and environment issues. The scope of their activities ranges from training, research, planning and implementation of health and/or environment interventions. However, few of these institutions work on health and environment linkages. Human resources are available with a wide range of professional skills and expertise, though the extent to which these resources are used effectively to fulfill the functions of environmental risk factor assessment and management is insufficient. Although local knowledge is acquired through research conducted by national research institutions, this research remains uncoordinated and publications are scattered through the literature. The health research agenda remains separated from that for the environment.

Countries conduct surveillance for communicable diseases and some produce state of environment assessments or reports. However, there is almost no interaction between health and environment surveillance activities, particularly on data sharing. No country so far has reported conducting comprehensive and integrated environment and health surveillance. Nonetheless, some information available to governments is used to undertake communications and advocacy activities to inform and educate communities on specific public health or environment issues. Often, communications units exist within individual programmes or departments, but their activities are uncoordinated.

Countries have ratified many of the multilateral environmental agreements and developed, when required, the necessary implementation measures. However, there is insufficient awareness, capacity and funding at national level to implement and enforce legal obligations related to these international conventions and agreements. Most importantly, budget allocations to health and environment ministries remains low. The country SANA analysis of the continent to-date has shown that the environment ministries receives 0.001% to 2% of total government spending and the health sector 3% to 11%.

Introduction

At their first conference, African ministers of health and ministers of environment explored the nature of, and opportunities offered by, the linkages between their respective sectors. They recognized the mutual importance and relevance of their sectors and the synergies that may be derived from intensified collaboration. To achieve the general objective of the conference - to secure political commitment for catalyzing the policy, institutional and investment changes required to reduce environmental threats to health, in support of sustainable development – they adopted the Libreville Declaration with its 11 priority actions, which committed their countries to establishing a strategic alliance between health and environment as a basis for joint plans.

To translate this commitment into action, countries have begun to develop National Plans of Joint Actions (NPJAs) based on evidence generated by a Situation Analysis and Needs Assessment (SANA) process. That process promotes an integrated approach to policy making in the health and environment sectors that values the services that ecosystems provide to human health. To do so, the SANA places ecosystems, on which livelihood depends, at the centre of the exercise and addresses the full array of environment determinants of health, the drivers that lead their associated risk levels, and the management of those determinants and related risks. The SANA also addresses national policies and legislation, technical and institutional capacities, existing and potential intersectoral coordination mechanisms and available resources. A SANA has to be undertaken in every country in Africa, as a prerequisite for the development of National Plans of Joint Action.

The present report provides a synthesis of the outcomes of the SANA process to date, and as such documents the progress achieved by countries in fewer than two years following the 2008 Libreville Declaration. The synthesis report lays out, for the first time, a comprehensive situation analysis of the state of environmental determinants and related risks to human health and ecosystem integrity and relevant management systems in Africa, on which evidence-based regional priorities can now be identified.

Methodology

The WHO-UNEP Joint Task Team for the Health and Environment Strategic Alliance developed a Guide for Situation Analyses and Needs Assessments (SANA)¹. The guide is oriented toward an assessment of the current status of the 11 priority actions of the Libreville Declaration in African countries. The objectives of the guide are to:

- i) provide a framework within which countries can undertake their situation analysis and needs assessment for implementation of the Libreville Declaration;
- ii) facilitate harmonization of methodologies, procedures, indicators and tools for country situation analyses and needs assessments;
- iii) provide guidance on the use of the outcomes of the situation analyses and needs assessments for the preparation on national plans of joint action;
- iv) facilitate identification of national and international priorities.

The guide was field-tested in Gabon and Kenya and finalized during a workshop held in Brazzaville, Congo, from 8 – 10 September 2009. The guide was subsequently disseminated to countries for use. The SANAs have been initiated so far in 17 African countries and completed in 12². This report is based on the situation analysis and needs assessments reports of those 12 countries.

The SANA is a step-by-step assessment procedure with a standardized methodology that also allows comparison of results between countries. The first part - situation analysis - precedes the identification of needs in the second part of the process. Both the situation analysis and the needs/opportunities identification rely, to the extent possible, on data already available and conclusions derived from such data. In every country the SANA is undertaken by a group of national experts from various government ministries (beyond health and environment) and institutions, universities, research institutions, as well as representatives of other stakeholders such as development partners and civil society.

¹ WHO/UNEP (2009) – Implementation of the Libreville Declaration on Health and Environment in Africa: Guide for the country situation analysis and needs assessment for the preparation of National Plans of Joint action. United Nations Environment Programme, Nairobi.

² Angola, Cameroon, Congo, Democratic Republic of Congo, Ethiopia, Gabon, Ghana, Kenya, Lesotho, Madagascar, Mali and Tanzania.

The process requires a desk analysis of already available documentation, supplemented by interviews. The first step in the process is the review of all questions and identification of all documents necessary to undertake to the extent possible a comprehensive analysis. The second step is for each of the specific task group to carry out a detailed review of the relevant documentation and materials to extract the information required to respond to the different questions using the data collection proforma. The collated information is computerized using the data entry screen of the Health and Environment Linkages Data Management System (HELDS). The Database outputs (tables, graphs, maps) are then produced, analyzed and a national report developed.

The process is initiated by an inception meeting in which the objectives of the exercise are reviewed and national experts trained in the use of the SANA tools. After the production of a first draft report, a National Prioritization Workshop is organized bringing together key policy makers with national experts to review the first draft of the SANA so as to validate the information contained in the report and to agree on the proposed national priorities. This workshop is followed by the National Consensus meeting (the final stage of the SANA process) which allows all interested sectors, partners and the civil society to adopt and endorse the national report. This final step sets the stage for the government to develop a National Plan of Joint Action based on the priorities agreed by stakeholders.

In addition, a number of complementary assessments have been undertaken by the JTT to review the level of implementation of some major health and environment related initiatives in African countries in two case studies: the Strategic Approach to International Chemicals Management (SAICM) and the Implementation of the United Nations Framework Convention on Climate Change (UNFCCC) in relation to health.

I. The Disease Burden attributable to the environment in Africa

In the African Region, about 28%³ of the disease burden is attributable to the environment (Table 1). This share even reaches 36% in children under the age of 14 years (1). Main health outcomes affected by environmental risks in the African region include diarrhoea, respiratory infections and malaria. These three diseases carry about 60% of all known environmental health impacts. However, almost all diseases noted in the table are affected by the environment in some way, but to a lesser extent. The comparison of exposure to main environmental risks as compared to the world average shows that the African Region bears poorer conditions as to the traditional risks, namely water, sanitation and hygiene (closely linked malnutrition), and solid fuel use (Table 3). Exposure to other risk factors is similar or lower than the world's average. In relation to the above, it is estimated that there are more than 1.3 million avoidable child deaths⁴ per year attributable to the environment in this region highlight the importance of improving environmental conditions for meeting Millennium Development Goals (for example on on child mortality, water and sanitation, and solid fuel use) and other internationally agreed objectives such as the polio eradication, that could have been achieved more easier with improved sanitation..

³ Not a formal WHO estimate; data based on evidence synthesis, comparative risk analysis and expert survey.

⁴ World Health Organization. Global health risks: mortality and burden of diseases attributable to selected major risks. Geneva: WHO; 2009.

Table 1: Burden of disease attributable to environmental factors for selected diseases in the African Region, estimates for 2004 ^a

	Deaths in children		DALYs in children		Main environmental and related risks (suspected or confirmed)
	Total deaths	0-14 y	Total DALYs	0-14 y	
Population (millions)	738	318	738	318	
	(000)	(000)	(000)	(000)	
Total deaths/DALYs (all causes)	11 248	5 200	376 525	215 065	
Total environmental deaths/DALYs	3 148	1 939	106 495	77 885	
% environmental deaths/DALYs	28%	37%	28%	36%	
Respiratory infections	584	432	17 463	15 487	SFU, SHS, OAP
Diarrhoeal diseases	941	762	30 152	27 112	WSH, food safety, malnutrition, CC
Malaria	335	325	12 867	12 495	WSH, malnutrition, CC
Intestinal nematode infections	0	0	1 528	1 369	WSH
Schistosomiasis	36	2	1 502	763	WSH
HIV/AIDS	157	0	4 220	0	Occupational risks
Tuberculosis	65	9	1 765	346	Housing, crowding
Perinatal conditions	108	108	4 218	4 218	OAP, SHS, chemicals, WSH
Malnutrition ^c	39	39	3 102	3 102	WSH/malnutrition
Consequences of malnutrition ^d	77	77	2 795	2 795	WSH/malnutrition
Mental retardation, lead-caused	0	0	918	918	Lead
Other neuropsychiatric disorders	17	3	2 599	278	Occupational risks, chemicals, disasters, noise
Cardiovascular diseases	178	3	2 150	151	Stress at work, SHS, OAP, lead
Road traffic accidents	84	28	2 945	1 331	Land use, road design, urban structure
Other unintentional injuries	140	51	5 846	2 759	Housing and recreational environment, chemicals, floods, fires, CC
Others	386	99	12 425	4 761	WSH, chemicals, others

Source: Estimates for 2004 updated from: Prüss-Ustün A, Corvalan C. Preventing disease through healthy environments: Towards an estimate of the environmental burden of disease. Geneva: World Health Organization; 2006. Available from: http://www.who.int/quantifying_ehimpacts/publications/preventingdisease/en/index.html

Legend: CC: climate change; OAP: outdoor air pollution; SFU: indoor air pollution from solid fuel use; SHS: second-hand smoke; WSH: water, sanitation and hygiene, including water resource management.

^a Not a formal WHO estimate; data based on literature review, comparative risk analysis and expert survey.

Table 2: Disease burden attributable to selected environmental risks, African Region, 2004

Risk factor	Deaths			DALYs		
	Deaths	% of total deaths	Deaths, children 0-14 years	DALYs	% of total DALYs	DALYs, children 0-14 years
Population (millions)	738		318	738		318
	(000)	% total	(000)	(000)	% total	(000)
Total deaths/DALYs (all causes)	11 248	100%	5 200	376 525	100%	215 065
<i>Selected environmental risks</i>						
Unsafe water, sanitation, hygiene	896	8.0%	726	28 700	7.6%	25 794
Urban outdoor air pollution	61	0.5%	11	881	0.2%	381
Indoor smoke from solid fuels	551	4.9%	500	18 057	4.8%	17 500
Lead exposure	9	0.1%	0	1 050	0.3%	918
Second-hand smoke	53	0.5%	43	1 719	0.5%	1 568
Global climate change	57	0.5%	50	2 029	0.5%	1 901
<i>Selected occupational risks</i>						
Risk factors for injuries	42	0.4%	NA	1 385	0.4%	NA
Carcinogens	6	0.1%	NA	87	0.0%	NA
Airborne particulates	29	0.3%	NA	553	0.1%	NA
Ergonomic stressors	0	0.0%	NA	102	0.0%	NA
Noise	0	0.0%	NA	381	0.1%	NA

Source: WHO 2009 (2)

II: Environmental Determinants of Human Health and Ecosystems Integrity

This section of the report reviews environmental determinants and risks occurring naturally and those emanating from human activities, as perceived and reported by countries. The lack of quantitative data is striking in all country reports, pointing out inadequate environmental monitoring and therefore making the synthesis of information under this section more descriptive than statistical.

II.1. Major risks occurring naturally

The most frequently reported risks include soil erosion, floods, sea level rise, volcanic eruption, earthquakes, gas release, and drought in the various human settings.⁵

Soil Erosion: African governments have put in place soil conservation programs. However, owing to various pressures such as the increased demand for biomass, soil erosion is reported as an important risk factor to health and ecosystem integrity in both rural and urban settings. Erosion leads to loss of productive capacity of soils, and hence food production causing malnutrition, as well as drinking water contamination. It blocks storm water drains and sewer lines. Erosion exacerbates the spread of waterborne diseases, the risk of landslide, shortens life for drinking water treatment infrastructure and the destruction of human habitats, leading to disabilities and death.

Floods: Floods are reported to be occurring with increasing frequency in all countries. The effects of floods on health are mainly through contamination of drinking water sources by surface run offs which leads to deposition of silt and other solid waste in water sources including wells and ponds. It also leads to loss of shelter, exposing children to pneumonia and other climate and water related diseases, and increases breeding sites of mosquitoes, as well as reduced food production and malnutrition. Related socio-economic consequences include loss of livelihood for communities due to cessation of economic activities. In coastal zones, floods are also associated with sea level rise, a condition being attributed to climate change.

Drought: Drought is one of the manifestations of chronic environmental degradation, closely related to loss of forest cover, and has been reported as a major risk to human health in seven out of twelve countries. The increasing trend of drought-induced disasters and other hazards is reflected in the increasing number of people needing food assistance. The magnitude of drought and its impact varies from country to country; for example in Ethiopia, within the last three decades, there have been many national and localized droughts and at least 20 major drought years were noted affecting most parts of the country, particularly Tigray and Wollo Regions. In addition, between 1990 and 2005, 6.3 million people required food assistance amounting to over 654,000 tonnes on average each year. In Kenya, recurrent episodes of drought have led to social conflicts and human stress, reduced

⁵ Others include; landslide, cyclone, land degradation, sand dune encroachment, locust invasion, and salinity

agricultural output, animal die-offs as well as depleted farm yields and veterinary products. Notably, 4.4 million people were affected in 1999/2000 while about 2-3 million people were affected by the 2004 drought. This reported to have caused contamination of existing water supplies, reduced access to safe water, acute lack of food and dependence on sewage agriculture, leading to exponential increase of cholera incidences in 2009.

Sea level rise: Sea level rise is described as an increasing risk by all countries with coastal zones although the magnitude of this phenomenon is largely unknown. However it is reported to affect breeding sites of marine life in the wetlands and beaches and, is also associated with increased salinity of soft water and erosion of coastal zones causing destruction of development infrastructure and of ecosystems.

Volcanic eruption, earthquakes and gas release: A total of five countries reported that they were facing various levels of earthquake and/or eruption risk. For example, the Rift Valley area of Kenya is an active volcanic zone and records an average of 1000 volcanic activities a year. A significant earthquake was experienced in the Ol Doinyo Lengai area in 2007 measuring 5.2 on the Richter scale, causing destruction of human settlements. In Cameroon, Mont Cameroun remains an active volcano and in 1992, eruption on its Western side lasted for 6 months, killed 100 persons, destroyed crops, railway infrastructure and human dwellings. The Lake Nyos in Cameroon remains at risk of toxic gas emissions (CO₂).

II.2. Major risks resulting from human activities

The most commonly reported risk factors resulting from human activity are deforestation, biodiversity loss, disease vectors, drought, marine pollution, lack of sound management of hazardous and non-hazardous wastes, organic drinking water pollution, air pollution, floods, all of which affect both rural and urban settings⁶. Many of these risks are further exacerbated by the lack of sound chemicals management.⁷

Water pollution: Most commonly reported cause of water pollution is due to inadequate waste management. The analysis of the reports from the 12 countries revealed that, a significant proportion of the urban population has poor access to proper solid waste management and sanitation. Poorly managed waste presents a health risk to communities. Ground water is commonly contaminated by pit-latrines and soak pits in most peri-urban and informal settlements, leading to potentially high levels of coliform counts in drinking water. This is primarily because untreated waste and waste that remains uncollected or improperly disposed of can be a source of chemical and/or organic contaminants and can become breeding sites for diseases vectors. Such wastes contaminate drinking water and

⁶ While soil erosion, floods, drought and sea level rise are classified in this section as major risks occurring naturally, it is very likely that global warming and sea level rise are caused by human activity. Climate change already has a measurable impact on many natural and human systems, including increasing the occurrences of floods, droughts and extreme weather events.

⁷ Others reported risk resulting from human activity include floods, marine pollution, drought, road accidents, climate change, noise pollution, erosion, pesticide exposure, health care wastes, poor and crowded housing, mines and explosive devices

other water resources and contribute to diarrhoeal and vector-borne diseases. Example from Ethiopia indicates that the main water pollution cases are related to industrial activities, sewage, domestic and rural wastewater as well as agricultural activities. There are challenges related to treatment of waste water and effluent from industries.

Air pollution: Analysis of the country reports reveals that both indoor and outdoor air pollution remain a challenge in Africa. Indoor air pollution is primarily due to use of biomass fuels (firewood, crops residues, and animal cow dung) for cooking and heating. This form of air pollution is attributed to a number of health conditions including lung cancer, cataracts, eyes irritations, skin diseases, increase acute respiratory illness and aggravation of asthma (especially in children), as well as asphyxiation, with a possibility of death.

Outdoor air pollution results from elevated level of fine particulate matter (PM10 and PM2.5) in ambient air, typically emitted by vehicles, open air burning of waste and other materials, industrial and energy generation processes. Collectively they are associated with increased daily and long term premature mortality due to cardio-pulmonary diseases, acute respiratory infections and cancers.

Soil degradation and pollution: The major causes of soil degradation are the rapid population increase, severe soil loss, deforestation, low vegetation cover and unbalanced crop and livestock production. Utilization of crop residues for fuel and other uses disturbs the sustainability of land resources. The balance between crop, livestock, and forest production is disturbed, and the farmer is forced to put more land into crop production. In Lesotho, for example, over 100 km² (approximately 2% of the total land area) has been degraded due to overgrazing and incorrect farming practices as well as mismanagement of the rangeland and chemicals/pesticides residues. Similarly in Ghana, over 72% of all land areas of the country is considered vulnerable to desertification.

Soil degradation is noted as causing a loss of soil fertility leading to reduced agricultural production which poses threats to food security, thus resulting in malnutrition among vulnerable population groups, children under five years of age in particular.

The absence of effective waste disposal systems leads to soil degradation and pollution that favors the proliferation of disease vectors and generates other public health concerns.

Food contamination: Food contamination is a risk factor that is commonly reported from both rural and urban settings. Its occurrence is often related to aspects of environmental degradation such as drinking water pollution, and soil contamination with pesticides and fertilizers.

Contaminants of the environment find their way in the food chain and escalate problems of food safety. Common problems associated with food contamination include inadequate or inappropriate slaughter and cold storage facilities, as well as infestation by vectors as a result of poor sanitation and personal hygiene.

Biodiversity loss: Many countries report the existence of a large diversity of animal and plant species. However, these are in danger of disappearing due to uncontrolled exploitation and loss of natural habitats. Rapid population growth is putting increasing pressure on the region's natural resource-base. As a result, processes such as deforestation overgrazing, soil erosion and desertification have become major threats to the remaining biodiversity in Africa, thus endangering traditional medicine and food security.

Diseases vectors: Poor management of solid waste, fast flowing and stagnant water, floods, and general poor hygiene create a conducive environment for proliferation of diseases vectors. These disease vectors particularly thrive where waste, including human excreta, are indiscriminately disposed of without due regard to implication for human health. The major disease vectors include mosquitoes, tse –tse fly, black flies, rodents. Malaria transmitted by mosquitoes is one of the leading causes of mortality and morbidity in sub-Saharan Africa. Other vector borne diseases such as dengue, chikungunya, rift valley fever, onchocerciasis, human African trypanosomiasis, lymphatic filariasis remain public health problems in Africa.

Chemicals and hazardous waste

African Countries are facing increased exposure to chemicals as a result of the growth of global trade in chemicals, the changing production patterns and the predicted relocation of chemical production to developing countries, the growing market for chemicals products, increasing urbanization and the lack of adequate resources for infrastructural development and maintenance particularly in the water sector and increased industrial employment and corresponding work place exposure to chemicals. Chemicals safety remains a major challenge to the continent. Chemicals are an important source of air, water and soil pollution. This pollution is exacerbated in many countries due to the growing extractive industries. Exposure to harmful substances is one of the most significant environmental risks to human health. As chemicals production increases globally, wildlife contamination has become even more pervasive and troubling health threats are even more apparent. Chemicals substances and their derivatives, are widely used in many development and economic sectors including industry, agriculture, mining, water purification, public health – particularly disease eradication – and infrastructure development. Pesticides are the group of chemicals that is of greatest concern for most African countries due to their importance in agriculture, particularly in Sub-sahara Africa, mainly an agricultural region, which has been using pesticides for pest and disease control for more than 40 years.

In some cases, chemical exposures of particularly high concern can occur at the point of disposal or recycling. This is the case for electronic waste. E-wastes contain toxic chemical substances such as lead, cadmium, beryllium, mercury, polychlorinated biphenyls, brominated flame retardants, and polyvinyl chloride. Polychlorinated biphenyls in obsolete capacitors and transformers continue to be a problem as well. Illegal trade involving chemicals comes in many forms, including export and import of hazardous and electronic waste, ozone-depleting substances, metals, counterfeit products, persistent organic pollutants, and banned pesticides. This trade continues despite being prohibited under several Multilateral Environmental Agreements (Stockholm, Rotterdam and Basel Conventions, Montreal Protocol). The adverse impacts of illegal trade are considerable: degradation of environmental resources, health dangers to inhabitants, revenue losses by

governments and producers of legitimate products, and the undermining of international treaties. Many of the transboundary shipments of e-waste are illegal, and do not comply with existing multilateral environmental agreements. Many African countries are a frequent destination for the electronic waste (e-waste) of developed countries. Efforts to recycle the toxic metals in e-waste endanger workers and cause environmental contamination.

Health risks associated with climate variability and change

It is now widely accepted that, at the least, a warmer and more variable climate threatens to lead to higher levels of certain air pollutants, increased transmission of diseases from poor water, sanitation and hygiene, and an increase in the adverse health consequences of extreme weather events in climate vulnerable countries⁸. It is also recognized that Least Developed Countries and Small Island Developing States, which currently experience high burdens of climate sensitive diseases and include highly vulnerable populations, are likely to experience significant negative impacts of climate change, without immediate and adequate adaptive (i.e. preventive) measures. It had been estimated that the global warming that has occurred since the 1970s was causing over 140 000 excess deaths annually by the year 2004. Climate change was estimated to be responsible already for 3% of diarrhoea, 3% of malaria and 3.8% of dengue fever deaths worldwide, with a total attributable mortality of about 0.2% of deaths; of these, 85% were child deaths (WHO, 2009)⁹. The World Health Assembly adopted Resolution WHA/61.R19¹⁰ and a workplan on climate change and health which *inter alia* requested the Director-General to continue close cooperation with Member States and appropriate United Nations organizations, and other agencies and funding bodies, in order to develop capacity to assess the risks from climate change for human health and to implement effective response measures.

I.3. Ecosystem integrity

In Africa the ecosystem integrity can be addressed through the assessment of forest, humid and dry savannah, arid and semi-arid areas, wetlands, highlands and mountainous ecosystems.

Forest degradation: Forest degradation is caused by encroachment for agriculture and excision for infrastructure development. The most important human effects resulting from the degradation of forest ecosystems are the loss of water catchments, reduction of capacity for climate moderation, acceleration of soil erosion and degradation, increased air pollution as well as increased incidence of water and vector borne diseases.

⁸ IPCC (2007) Synthesis report:

http://www.ipcc.ch/publications_and_data/publications_ipcc_fourth_assessment_report_synthesis_report.htm

Accessed on 26 October 2010

⁹ WHO, 2009. [Global health risks: mortality and burden of disease attributable to selected major risks](#). World Health Organization, Geneva.

¹⁰ http://www.who.int/globalchange/A61_R19_en.pdf (accessed on 17 June 2010).

In a number of countries, forests have been reduced to croplands, and croplands have changed into grasslands, while the grasslands are turning into deserts in certain areas. In rural areas, deforestation is mainly caused by need to expand agricultural land, while logging often leads to deforestation due to opening of hitherto inaccessible areas. The changes are noticeable through declining yields in crops and livestock per unit of land and longer distances travelled for fuel-wood, water and grazing. In the woodlands normally associated with marginal areas that are prone to drought and desertification, the fragile balance and the system capacity are affected by overgrazing, over cropping, poorly planned irrigation systems and unsustainable indigenous land use systems. The slash and burn method of land preparation contributes to desertification, while cutting down of trees for charcoal degrades large sections of the forest.

Degradation of humid and dry savannah: Humid savannah degradation is mainly associated with poor land use practices. Its most important effects are the loss of habitat for plants and animals, and the loss of biodiversity. Dry savannah degradation associated mainly with overgrazing and over cultivation causes soil disturbance, completes vegetation loss, increases dust levels and particulates matter in the air, and contributes to easy transmission of diseases.

Degradation of arid and semi-arid areas: The arid and semi-arid ecosystems (Sahel and desert) are threatened by overgrazing and encroachment on bush land. The conversion of marginal lands to crop production has generally had adverse effects on land management systems in this ecosystem, resulting in land degradation. These areas continue to experience high heat stress.

Wetland and coastal zone degradation: Wetlands are being degraded by unplanned and unsustainable reclamation, encroachment on riparian reserves, utilization of swamps and mangrove forests, unprecedented infrastructure development, and informal settlement. Reports from a number of countries indicate that the most important consequences are flooding, loss of fishery (a key source of nutrients), drying of seasonal rivers (mainly in rural settings) and loss of potable water sources. These areas are also subjected to erosion and sedimentation, chemical, organic and domestic waste pollution. Coastal zone degradation associated with unplanned development projects and uncontrolled urbanization. The most important effects are poor waste disposal and pollution from land based sources, and insufficient viable wastewater treatment and solid waste management. Beaches are affected by soil erosion. The immediate health consequences of wetland degradation are increased cases of malaria, diarrheal diseases, as well as perennial cases of other waterborne and vector borne diseases.

Degradation of highlands and mountainous ecosystems: In countries such as Madagascar, Ethiopia and Lesotho, a large proportion of the population is found in highlands and mountain zones. The major threats include deforestation for fuel and timber, conversion of grasslands for agriculture and livestock use, soil degradation, over grazing and population growth. All these put existing faunal and floral resources at risk. In some rural settings in Kenya for instance, the mountainous areas are still relatively intact constituting important water towers; concerted campaigns are ongoing to protect them. The health consequences

of the degradation of these ecosystems is reduced food production and capacities, water catchment functions, and changes in vector borne disease transmission patterns.

III: National systems for the management of environmental determinants

The eleven priority actions in the Libreville Declaration address the elements of national systems for the management of environmental determinants and their associated threats to human health and ecosystem integrity. In this section, the information generated from the SANA process on the status of these elements is reported.

II.1. Health-and-environment strategic alliances at the country level

No countries reported that there have been systematic joint planning processes between the health and environment sectors. All SANA reports indicate clearly that health and environment sectors remain separated, working in isolation rather than in concert. The two sectors operate under their own and separate legislative frameworks and only work together on issues based on ad-hoc arrangements in case of matters requiring inter-sectoral interventions. In that case, health and environment ministries work together on issues using informal committees, such as committees of water, and chemicals related issues such as pesticides. Notably, only one country had produced guidelines that defined a process for establishing such issue based inter-sectoral cooperation.

In general, the health sector plans and programmes, are largely focused on medical and curative aspects and less on the management of related environmental risks. Similarly, environment plans and programmes tend to focus on pollution monitoring and regulatory policy and rarely address environmentally related health objectives.

II.2. Health and environment linkages in National Policies, Strategies, Regulations and Plans

Health-and-environment linkages feature to varying degrees in policies, strategies and regulations. It is evident from country assessments that absence of an overarching framework to guide these linkages limits the level of inter-sectoral collaboration. However, in some countries there is recent environmental legislation which provides such linkages to be built, although they are not yet operationalized.

In general, strategic, policy, regulatory and legislative frameworks related health deals essentially with waterborne disease, respiratory infections, malaria and other vector borne diseases, hygiene and sanitation, waste, air pollution and pesticides. Those related to environment deal essentially with climate change, deforestation, loss of biodiversity, waste, sanitation, desertification and air pollution.

Policy documents consistently include most if not all of the necessary components, whereas strategy documents often lack information on interventions and guidelines to assist in the

implementation of policy. Legislative documents, on the other hand, contain statements on health risks and regulatory frameworks but are short of recommendations on human and financial resources, guidelines at the national level and interventions to assist program and project managers in the process of implementation of policies and strategies. In general, policy and other documents need to provide more details about risk factors, their impact on the environment and provide guidance to support implementation of policy at all levels and need to be reviewed and updated regularly.

III.3. Priority Intersectoral Programmes

The majority of countries have prepared Poverty Reduction Strategy Papers (PRSPs) in order to achieve the Millennium Development Goals. The PRSPs provide frameworks for the coordination, monitoring and evaluation, however they lack specific mechanisms to develop and implement intersectoral programmes, especially to address health and environment linkages. It is noted that there are limited concrete objectives that link health and environment. This has resulted in only a small number of programs characterized by joint actions on the part of the health and environment sectors, despite the fact that policies and strategies often acknowledge the issues involved. Furthermore, many national sectoral development plans continue to be developed and implemented in parallel without taking into account the main national development and poverty reduction strategic frameworks. In general, it is noted that there is a lack of funding for the implementation of PRSPs.

III.4. National capacities

All countries have reported the existence of several national institutions working on health and environment issues. In Cameroon for instance, up to 18 different ministries work on health and /or environment issues. In addition to this, other institutions include, public and private research institutes, universities, and NGOs. The scope of their activities ranges from training, research, planning and implementation of health or environment interventions. There is limited proportion of these national institutions that work on health and environment linkages. It is also reported that human resources are with a wide range of professional skills available in the countries. However, the extent to which these resources are efficiently used to fulfill the functions of environmental risk factors is unclear. Often, these institutions work separately with very limited sharing of information between them, hence no exchange of experiences. In some countries, there is a risk of overlap of mandates among the various institutions, leading to duplication of activities. An important issue is that funding of national institutions is often ineffectively distributed with the bigger proportion allocated to recurring cost and very little to support implementation of activities.

III.5. Knowledge Acquisition and Management

Considerable amount of research activities focuses on issues that ultimately relates directly or indirectly to health and environment linkages. In all countries it is reported that research is conducted on health and or environment issues. Therefore, local knowledge through formal and informal publications is acquired. Over the period 2007- 2009, Mali published at least 67 research papers; Ghana published 61; Gabon 36; Ethiopia 33; and Kenya 20. However, the researches conducted by different national institutions and research centers are scattered, usually without prioritization, uncoordinated and do not have direct relation with the countries' research agenda.

In all countries the health research agenda remains separated from the environmental one, though, when research on health and environment determinants is undertaken, it is carried out on an ad hoc basis. The review also indicates that in most of the countries there is lack of coordination mechanisms at the national level for undertaking of research in the area of health and environment linkages. Some countries (Madagascar and Cameroun) have instituted mechanisms to share information from sectoral research through internet or a ministry of scientific research and innovation. The review also reveals that there are limited human and financial resources available for research in the inter-linked area of health and environment.

III.6. Systems for Health and Environment Surveillance

All twelve countries conduct surveillance for communicable diseases through the implementation of the Integrated Disease Surveillance and Response (IDSR) Strategy. However non communicable disease surveillance is not systematic. With respect to environmental surveillance ministries of environment undertake the writing of State of Environment Assessments or Reports. Most countries produce the State of Environment Reports (SOE), with varying degrees of frequency ranging between every two to five years. Several of these reports take a broad view of environment, and include some coverage of socio-economic and cultural factors. It is within this socio-economic and cultural focus that health issues appear to be most frequently highlighted if highlighted.

Of the twelve assessed countries, a total of 6 countries have reported to conduct Environmental Impacts Assessments for development projects. Regarding other specific aspects of health and environment it is noted that: 9 countries conduct surveillance for water quality (7 regularly); 7 countries conduct air quality surveillance (4 regularly); 11 countries regularly conduct surveillance of weather and climate variables; 6 countries conduct surveillance of chemicals and solid waste disposal (2 regularly); 10 countries conduct surveillance of biodiversity (7 regularly).

With regard to integrated health and environment surveillance, it is established that for the most part, the environmental and health institutions in the twelve countries work separately. These surveillance activities are carried out in a sectoral and fragmented way with little collaboration between the two sectors. In all countries, surveillance on water quality is undertaken to some extent, while ambient and indoor air pollution is only done on ad hoc basis. In eight of the twelve countries, there are inadequate financial and human resources for the surveillance of health and environment issues in general.

III.7. International Conventions.

There are more than 30 conventions, protocols and agreements that have direct relevance to health and environment in Africa. All the countries have ratified most of the Multilateral Environmental Agreements (MEAs) and developed, when required, the necessary formats of action plans (National Implementation Plans (NIPs), country programs, action plans, strategies etc. MEAs require regular reports (Basel, Rotterdam, Stockholm UNFCC Convention, Montreal Protocol and SAICM).

It is recognized that there is insufficient awareness and/or capacities at national level to implement and enforce legal obligations related to the ratification of international conventions and agreements. As a result, two of the countries have not ratified and therefore are not parties to various international conventions and agreements, including the Bamako Convention which the Libreville Declaration specifically requested African Countries to ratify. Out of the 12 countries, only 4 have ratified the Bamako convention.

Related to the issue above, is the non-implementation of the obligations of the Conventions and agreements already ratified by the 12 countries. Some conventions to which countries are party do not have National Implementation Plans (NIPs) and/or mechanisms to enhance their national compliance obligations. There is therefore an apparent lack of commitment by countries with regard to the implementation of these conventions and agreements.

In cases where countries have ratified and are implementing the conventions, there is little effort at developing synergies among these conventions. Each instrument has a focal point ministry and/or designated authority in the focal ministry, however, few sectors, partner institutions engaged themselves with conventions and agreements for which they are not focal points.

The 12 countries highlighted the fact that there are limited human and financial resources dedicated to the implementation of international conventions and agreements. For this reason the countries are not able to prepare their national plans and other appropriate mechanisms for the implementation of the conventions. Not much effort is being made to access funds where there is a financing mechanism, with the exception of the Multilateral Ozone Fund. But for the Global environment Facility (GEF) and SAICM Quick Start Programme (QSP) Trust Fund, more needs to be done to access the technical and financial resources at the disposal of African States. Even in cases where national action plans have been prepared, their implementation is still constrained by lack of financial and technical

resources, both at the local and international level. One of the countries indicated that international conventions and agreements are rarely funded under its national budget.

Some countries reported that funding is mainly related to financing mechanisms such as the GEF or SAICM QSP. Where such funding is not available, government contributions tend to fall between nil and 30%, indicating a lack of regular government commitment.

Example1: Implementation o the Strategic Approach to International Chemicals Management in Africa and collaboration with the Basel convention

The Strategic Approach to International Chemicals Management was developed to particularly provide a comprehensive and coherent policy framework in this area. Implementation of the Strategic Approach and its objectives remains uneven in the African region. Sustainable financing has been a major challenge for SAICM implementation. A number of factors contribute to this issue including insufficient priority for sound chemicals management, weak implementation of chemicals policies, lack of integration of chemicals management into national development strategies, inadequate coordination among relevant stakeholders. Opportunities for multi-sectoral and multi-stakeholder engagement, if properly harnessed may assist in the leveraging needed resources, including personnel, expertise and finances. To this effect, paragraph 23 of SAICMs Overarching Policy Strategy stresses the importance of inter-ministerial and inter-institutional arrangements at a national level. Paragraph 26 of the Overarching Policy Strategy identifies regional meetings as of continuing significance and resolution II/2 of the International Conference on Chemicals Management further underlines the need to enable stakeholders in each region to exchange experience, identify priority needs in relation to implementation of the Strategic Approach and to develop regional positions on key issues. The Libreville Declarations 11 action points emphasizes similar and complementary objectives and approaches to SAICM ones in addressing chemicals and hazardous waste in Africa. Furthermore, like SAICM, The declaration mandates UNEP and WHO to jointly support the implementation of the Declaration. Many of the themes in SAICM capacity needs assessments are related to the commitment to minimize the risks to the health of human populations and environments arising from chemical use e.g., evaluation of the health and environment implications of chemical processing plans through environmental impact assessments and audits, strengthening of legislative support for environmental and health protection in chemical management projects, and promotion of training, research and field studies on risk reduction to protect health and environment. These are also among the findings of the synthesis reports from some 17 African countries which have completed their SANA reports. Implementation of the Libreville Declaration in connection with and integrated initiatives such as SAICM for sound chemicals management can further strengthen opportunities for tackling cross-cutting issues and challenges maximizing cohesion in the two endeavours. Identified priorities emanating from SANA might be further pursued in the context of SAICM, noting that the SAICM Quick Start Programme has facilitated funding support for a pilot SANA project in Gabon and Kenya. Efforts to find a sustainable funding mechanism for sound chemicals management including SAICM may therefore also benefit SANA implementation. In addition lessons learnt and successful health and environment interventions emanating from the Libreville implementation processes including HESA might be shared and inspire joint health and environment actions in other SAICM regions beyond the African continent.

The SAICM Quick Start Programme Trust Fund is being accessed by countries to enhance the capacity of African Countries to monitor and control transboundary movements of hazardous wastes and chemicals and fight illegal traffic under the Basel Convention. “The Probo Koala” programme, which was launched in the aftermath of the Probo Koala dumping in Côte d’Ivoire, aims at developing national legislation and policies to enhance the implementation and the enforcement of the Basel, Rotterdam and Stockholm Conventions in coordination with

the WHO International Health Regulations (WHO, 2005). The programme is currently being implemented in Côte d'Ivoire, Djibouti, Mozambique Kenya and Tanzania. The Parties to the Basel Convention launched in 2008, the Partnership for Action on Computing Equipment (PACE), to increase the environmentally sound management of e-waste. PACE promotes a life-cycle approach. Key activities include the development of guidelines on environmentally sound refurbishment, repair, recycling and material recovery, the promotion of pilot schemes for the environmentally sound management of used and end-of-life computing equipment in developing countries and countries with economies in transition, and the development of awareness-raising and training tools and activities.

Example 2: Health Considerations within National Adaptation Programmes of Action of African Countries, under the United Nations Framework Convention on Climate Change

Twenty eight African countries have developed National Adaptation Programmes of Action (NAPAs) with the support of the United Nations Framework Convention on Climate Change. A review of health considerations within these plans has been undertaken with the objective of informing policy makers, experts and the general public on where we stand now in terms of planning and to help shape the way forward in order to better address health in the current climate-change process. In total, 92% of these countries consider health as being one of the sectors on which climate change is seen as having an impact. However, only 23% of the countries have undertaken comprehensive health-vulnerability assessment. Also, the extent to which health is affected by climate change is inadequately understood and addressed within the NAPAs. In most countries there is a weak epidemiological analysis, lack of an evidence base, an absence of clear public health objectives, and unclear and fragmented strategies to address climate change risks. Similarly, climate change health adaptation strategies are still inadequate. The analysis not only shows that the number of projects focused on health is small (11% of the total), the resources proposed to be attached to them are even smaller (3% of the total). Most NAPAs were developed more than three years ago and all now need to be reviewed. This will provide an opportunity to strengthen their health components.

III.8. National Monitoring and Evaluation Mechanisms

None of the twelve countries have reported a specific formal integrated monitoring and evaluation mechanism for health and environment programmes. In countries where PRSPs exist, they provide an opportunity for cross-sectoral programme of monitoring and evaluation. With regard to peer review, no formal mechanism have been reported. 6 of the countries have an institution with legal mandate for environmental monitoring and have adopted the practice of producing annual or biennial State of Environment Reports by the specialized agency on Environment in those countries. In others, monitoring is a one time event while in others, national priorities are monitored on continuous basis. In the same countries the practice is to produce health statistical abstracts as guided by WHO country Profile Formats. There is no indication generally on whether there is an annual budgetary allocation for this activity except in one country which has had it since 2002 and advocacy is undertaken as and when need arises, and as defined by the lead sector.

In four of the countries, the issue of monitoring and evaluation of health and environment appears at the top policy level. However, when it comes to implementation, performance monitoring and evaluation becomes less prioritized.

III. 9. Assessment of Health and Environment Risks.

All countries reported the existence of national legislation and/or regulations on environmental impact assessment. Regulatory oversight for environmental impact assessment (EIA) activities rests with national environmental authorities. EIAs are most commonly used at the project level, typically required as a precondition for issuing environmental permits. However, some countries reported that they also use Strategic Environmental Assessment, to identify major environmental or social consequences associated with policies or plans. No country reported that the health impacts of policies, plans, or projects are systematically considered. In instances where health issues have been taken into account, it is often done as part of a wider environmental impact assessment framework, usually as a sub-set of socio-economic issues. In this case, coverage of health issues was found to be general, scanty and often lacking in sufficient detail with respect to the assessment of health impacts on vulnerable population groups, such as women, children and the elderly. No country reported the existence of any regulatory or policy requirement for health impact assessment (HIA). The lack of a specific legislative requirement for health impact assessment, either as a stand alone or integrated environment and health impact assessment process, was cited as well as the need for guidelines and tools on HIA or on integrated environment and health impact assessment was also cited.

III.10. Partnerships for Advocacy

Communications and advocacy activities are undertaken by most governments to inform and educate communities on specific public health or environment issues. All countries, specific communications units exist within individual programme or departments. However, their activities remain largely fragmented. Communication and advocacy for hygiene and sanitation or, education for the prevention of the proliferation of disease vectors in relation to malaria and other communicable diseases are reported as typical health and environment communication interventions that are implemented solely by communications units of ministries of health. Ministries of environment on their part undertake advocacy and communications on environment issues, without necessarily articulating the possible outcomes or impacts on health. Therefore, consolidated national plans for communication and advocacy on the linkage of health and environment are rare, and partnerships for

advocacy very limited. There are currently little advocacy efforts linked to focus groups that address the youth, parliamentarians and local government authorities. Nevertheless opportunities to develop such focused communications activities have been identified, including parliamentarians' networks, NGOs, School programmes and social and environmental impact assessments of development projects.

III.11. National Budgetary Resources for Health-and-Environment Programmes

Budget allocation to health and environment ministries remains low. The environment sector receives 0.001% to 2% of total government spending and the budget of the health sector ranges from 3% to 11 %. It is evident from the country reports that there is consistent under-resourcing of joint health and environment activities when they exist. This is in spite of the very substantial burden of disease and related economic and social consequences that could be averted. There are reported additional difficulties of under-resourcing of health and environment sectors due to the current economic crisis.

Generally, health ministries focus on curative programmes in terms of both, professional training and existing institutional structures rather than on primary prevention and promotion of health. Environment ministries tend to be most active in the areas of legislation and regulation enforcement rather than addressing economic and social root causes of environmental degradation and human ill-health and achieving the necessary behavioral changes. Therefore, there are very limited joint health and environment initiatives that are funded jointly by the health and/or the environment sectors. One of such cases could be the projects on the demonstration of the cost-effectiveness of alternatives to DDT for disease vector control that are implemented by the ministries of health of some countries but funded by the Global Environment Facility. Another initiative is the SAICM Quick Start Programme funding of the implementation of the Libreville Declaration in 2 countries .

IV. Conclusions

The assessment undertaken by twelve African countries through their Situation Analysis and Needs Assessment (SANA) exercises demonstrate that environmental factors are still important determinants of the disease burden in the continent. These factors are themselves driven either by natural phenomena or to a larger extent by human activities. Country assessments reveal that, on one hand, soil erosion, floods, drought, sea-level rise, volcanic eruption, earthquake and gas release are the most important natural environmental determinants of human health and ecosystem integrity. On the other hand, human activities lead to water pollution, air pollution soil degradation and pollution, food contamination, biodiversity loss and the proliferation of disease vectors. The most important environmental risks associated with these determinants are water quality, sanitation, chemicals and waste management, and air pollution. In addition, the extent to which climate variability and change affect ecosystems and therefore human health still needs to be documented in greater detail.

Countries appear to be insufficiently prepared to manage effectively the determinants described above that of necessity require intersectoral collaboration. To date, there is no report from countries of any formal coordination mechanism that focuses specifically on health and environment linkages. This underlines the urgent need for operationalization of the health and environment strategic alliance proposed through the Libreville Declaration.

Countries have in general developed policies that are broad for the development of health and environment sectors. However, important gaps have been identified in relation to policy formulation, harmonization and updates. In addition, effective policy implementation is hampered by a lack of adequate enforcement tools and capacities. Specific policies to orient government action on emerging areas such as climate-change adaptation and mitigation are sometimes lacking, but importantly also, improved policies to address effectively traditional risk factors such as access to safe drinking water and sanitation are also lacking.

In spite of the existence of some intersectoral frameworks such as the Poverty Reduction Strategy Papers (PRSPs), few countries have reported intersectoral programme implementation to address particularly health and environment linkages. It is noted that countries have established institutions that work on health and/or environment issues such as training, research planning, expertise and implementation of interventions. Many of these institutions have substantive capabilities and capacities. However, these capabilities and capacities are under-utilised in the development of effective policies and programme implementation to tackle public health concerns and related ecosystem management needs.

Public health programmes accommodate disease surveillance as an important component of their activities, while environment programmes still face challenges in conducting regular assessments. Country information management systems still have difficulties in gathering on a systematic basis quantitative data on key environmental risk factors to human health to adequately inform policy makers. There is limited interaction and exchange of information between the two sectors. It is therefore not yet possible to relate changes in the epidemiological patterns of environment-related diseases with changes in the natural environment on a regular basis, given that surveillance in public health remain disconnected from environmental early warning, monitoring and assessment that relates to determinants of human health and ill-health.

To date, an important number of international instruments and multilateral environmental agreements remain unratified, leading to failure of implementation and enforcement, especially in the case of the Bamako Convention. Countries have identified a need for an integrated monitoring tool for the implementation of binding and non-binding health and environment agreements.

Countries have expressed a specific need for national frameworks on advocacy and partnerships related to health and environment through which health, environment and other sectors can carry out jointly advocacy activities.

Overall budget allocations for health and environment ministries remain low and in the case of environment remain minimal and for health far too low in relation to necessary programme activities. Given that currently, health and environment issues are addressed separately, there are even less financial resources to address health and environment linkages as they relate to human health and ill-health.

V. Recommendations

Against the evidence gathered from 12 countries on environmental determinants and the related national management systems and taking into consideration the political commitments made in the Libreville Declaration through its 11 priority actions, it is recommended that African Governments should:

1. Continue to maintain their focus on the provision of safe drinking water and sanitation, and the management of air pollution, chemicals, waste, disease vectors, soil degradation and pollution, and the risks due to climate variability and change, in the context of national strategies for primary prevention and as integral components of National Plans of Joint Action.
2. Ensure the continued delivery of ecosystems services to human health and well-being, through a rational use of natural resources, particularly by ratifying and implementing multilateral environmental agreements, as integral components of National Plans of Joint Action.
3. Develop or update their national frameworks to support adaptation to climate change by inter alia: undertaking comprehensive assessments of the risks posed by climate variability and change on population health and health systems; implementing integrated environment and health surveillance; delivering preventive and curative interventions for the effective management of identified climate-sensitive public-health concerns; and preparing for, and responding to the public health consequences of extreme weather events.
4. Maintain and strengthen country task teams that are established for the situation analysis and needs assessment to support the development of National Plans of Joint Action and ensure the coordination of their implementation in order to facilitate the achievement of health and environment objectives existing already under national development plans.
5. Articulate health messages within environmental advocacy frameworks and encourage the health sector to underline the importance of ecosystems in community health education messages. Health and environment sectors need to address national policy makers jointly and help to raise the issues discussed on the policy agenda.
6. Establish and/or strengthen processes and requirements that will ensure the systematic assessment, surveillance and monitoring of the environment and health impacts of policies, plans and projects. This will require alignment and harmonization

of laws, policies, regulations, strategies and plans in areas where health and environment interface.

7. Develop an integrated framework for monitoring and evaluation of multilateral environmental agreements to which they are signatories and/or parties.
8. Create mechanisms to systematically link environment monitoring to health surveillance in order to forecast and predict epidemiological changes related to environmental modifications and implement timely preventive interventions to mitigate the negative impacts of environmental determinants on human health.
9. Accommodate within their national human resource plans for health a greater proportion of environmental expertise to create conditions for the proper assessment, planning and delivery of primary prevention interventions.
10. Identify specific institutions and task them with the responsibility of coordinating the production of health and environment outlook reports. These institutions should be adequately resourced to fully play that role.
11. Increase the national budgetary resource allocation to the health and environment sectors and increase their investments on integrated surveillance activities, health impact assessments, ecosystems preservation, climate change adaptation, international conventions, human resources, inter-sectoral coordination, advocacy and communications activities, monitoring and evaluation, and research.
12. Exploit local knowledge in the development of locally-appropriate interventions for environmental management and disease prevention, including by establishing formal systems that will ensure that information generated through research by national institutions is used optimally for decision making.
13. Conduct economic analysis of health and environment linkages, incorporating cost-benefit analysis that support policy changes for sustaining life supporting ecosystems and public health primary prevention in order to make the case for sound investment and development policies.

WHO, UNEP and partners should continue their technical and financial support to countries for the implementation of the Libreville Declaration, specifically by assisting them in the situation analysis and needs assessments and the preparation of national plans of joint action. They should also establish at the international level, a mechanism to coordinate the actions of partners in support of this process.

Annex: The 11 Action Points of the Libreville Declaration on Health and Environment in Africa

we African countries commit ourselves to:

1. Establishing a health-and-environment strategic alliance, as the basis for plans of joint action;
2. Developing or updating our national, subregional and regional frameworks in order to address more effectively the issue of environmental impacts on health, through integration of these links in policies, strategies, regulations and national development plans;
3. Ensuring integration of agreed objectives in the areas of health and environment in national poverty reduction strategies by implementing priority intersectoral programmes at all levels, aimed at accelerating achievement of the Millennium Development Goals;
4. Building national, Subregional and regional capacities to better prevent environment-related health problems, through the establishment or strengthening of health and environment institutions;
5. Supporting knowledge acquisition and management on health and environment, particularly through applied research at local, subregional and regional levels, while ensuring coordination of scientific and technical publications so as to identify knowledge gaps and research priorities and to support education and training at all levels;
6. Establishing or strengthening systems for health and environment surveillance to allow measurement of interlinked health and environment impacts and to identify emerging risks, in order to manage them better;
7. Implementing effectively national, subregional and regional mechanisms for enforcing compliance with international conventions and national regulations to protect populations from health threats related to the environment, including accession to and implementation of the Bamako Convention by those countries that have not done so;
8. Setting up national monitoring and evaluation mechanisms to assess performance in implementing priority programmes and peer review mechanisms to learn from each other's experience;
9. Instituting the practice of systematic assessment of health and environment risks, in particular through the development of procedures to assess impacts on health, and to produce national environment outlook reports;
10. Developing partnerships for targeted and specific advocacy on health and environment issues towards institutions and communities including the youth, parliamentarians, local government, education ministries, civil society and the private sector;

11. Achieving a balance in the allocation of national budgetary resources for intersectoral health-and-environment programmes.