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(2010-2011)

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Abbreviations

AIDS	acquired immunodeficiency syndrome
AMCOW	African Ministers' Council on Water
CDC	Centre for Disease Control
CTT	Country Task Team
DDT	dichlorodiphenyltrichloroethane
DFID	British Department for International Cooperation
GAVI	Global Alliance for Vaccine and Immunization
GEF	Global Environment Facility
GLAAS	Global Annual Assessment of Sanitation and Drinking-Water
GIZ	German International Cooperation Agency
HESA	Health and Environment Strategic Alliance
HIA	health impact assessment
HIV	human immunodeficiency virus
HWTS	household water treatment and safe storage
ILO	International Labour Organization
IRS	indoor residual spraying of insecticides
IVM	Integrated vector management
IWA	International Water Association
JMP	Joint Monitoring Programme
LLIN	long-lasting insecticidal nets
MDAST	malaria decision analysis tool
MDG	Millennium Development Goals
NAPA	national adaptation programme of action
NGO	nongovernmental organization
NPJA	national plan of joint action
PM	particulate matter
SAICM	strategic approach to international chemicals management
SANA	situation analysis and needs assessment
UN	United Nations
UNDP	United Nations Development Programme

UNEP	United Nations Environment Programme
UN-Habitat	United Nations Agency for Human Settlements
UNFPA	United Nations Population Fund
UNICEF	United Nations Children’s Fund
UNITAR	United Nations Institute for Training and Research
USA	United States of America
VCDS	vector control decision support system
WASH	Water, Sanitation and Hygiene
WHA	World Health Assembly
WHO	World Health Organization
WISE	Work Improvement in Small Enterprises
WSP	Water Safety Plans

Executive Summary

In the African Region, health and environment challenges continue to be provision of safe drinking water, sanitation and hygiene services; management of water, soil and air pollution; vector control and chemicals and wastes management; food safety; children and women's environmental health and occupational health. To address the above challenges, African countries adopted a comprehensive policy framework and an implementation process through the Libreville Declaration on Health and Environment in Africa (2008), which is henceforth the overall framework for addressing health and environment linkages coherently by streamlining the actions of the various sectors and stakeholders at country and international levels.

WHO is scaling up technical cooperation with Member States and other development partners with a view to effectively addressing health and environment in the African Region. A previous report, covering the period from 2008 to 2009, on WHO's activities in public health and environment in the African Region was published in February 2010. The present report is intended to present to governments, partners and the general public progress and achievements in the area of health and environment from 2010 to 2011. Hence, during this period, WHO strengthened its partnership with UNEP in order to sustain support for the implementation of the Libreville Declaration on Health and Environment in Africa. WHO and UNEP jointly organized, in collaboration with the Government of Angola, the Second Interministerial Conference on Health and Environment in Africa that took place in Luanda, Angola, from 23 to 26 November 2010. The Conference adopted three major documents, namely: the Luanda Commitment, Arrangements for the Health and Environment Strategic Alliance and the African Ministers of Health and Environment Joint Statement on Climate Change and Health. WHO continued to help countries undertake their strategic analysis needs assessment (SANA). At the end of 2009, only 2 countries had completed SANA. By end 2011, 13 other countries had finalized SANA.

The WHO-UNEP Joint Task Team analyzed the national SANA reports of the 12 countries that had completed SANA by the end of 2010 in order to carry out, for the first time, a continent-wide assessment of environmental determinants to human health and related national management systems. A report titled “Environmental Determinants and Management Systems for Human Health and Ecosystem Integrity in Africa: First Synthesis Report on the Situation Analysis and Needs Assessment for Implementation of the Libreville Declaration on Health and Environment in Africa” was produced and used as the main discussion paper at the Second Inter-Ministerial Conference.

The African Ministers of Health and Environment Joint Statement on Climate Change and Health requested WHO and UNEP to work with other partners to develop tools for providing technical support for the implementation of their climate change resolutions. WHO thus undertook an assessment of country adaptation plans and the strengthening of a framework for public health adaptation to climate change. The document was submitted to the 61st Session of the WHO Regional Committee for Africa and endorsed by Ministers of Health under Resolution AFR/RC61/R2. Subsequently, WHO, UNEP and other partners prepared a draft plan of action for public health adaptation to climate change for Africa (2012-2016). The draft plan was presented jointly with the African Development Bank during a side event at the 17th Conference of the Parties to the United Nations Framework Convention on Climate Change that took place in Durban, in December 2011.

Technical support continued to be provided to countries for the implementation of specific interventions aimed at reducing environmental risks to health, as well as exposure to such risks. The interventions included vector control, safe drinking water, adequate sanitation, waste and chemicals management, occupational health, children’s environmental health, occupational health, etc.

WHO provided multifaceted support on a country-by-country basis, focusing on macro and micro planning for effective delivery of two interventions towards universal vector control coverage. By the end of 2011, 23 countries had adopted policies aimed at providing LLINs to all persons at risk, not only vulnerable groups. Malaria vector control recommendations

were updated in a bid to determine interventions selection criteria, on the basis of new epidemiological evidence. The development of a vector control decision support system (VCDS) to facilitate evidence-based decision making at the local level was pursued, as well as the monitoring of insecticide resistance in malaria vectors.

During the period 2010-2011, the WHO-UNICEF Joint Monitoring Programme (JMP) pursued its data reconciliation efforts in Africa to improve the understanding of JMP methods and definitions at the national level. The JMP prepared regional snapshots to highlight data-based regional perspectives on drinking water and sanitation. A specific snapshot on sanitation was prepared as a contribution to the Third African Sanitation and Hygiene Conference organized in Kigali, Rwanda, from 19 to 21 July 2011.

In 2010, The UN-Water Global Analysis and Assessment of Sanitation and Drinking-water (GLAAS), implemented by WHO, published its first global report, with a detailed review of 28 African countries, as well as the key determinants influencing progress on water, sanitation and hygiene (WASH), namely: the existence and effectiveness of WASH-related policies, institutions, planning and monitoring, budgetary and financial flows and human resources. In 2011, an African regional snapshot was produced, revealing that WASH aid levels to sub-saharan Africa, despite the needs, are not keeping pace with aid commitments made by the rest of the world.

The International Network to Promote Household Water Treatment and Safe Storage, hosted jointly by WHO and UNICEF, provided support to five East African countries in 2011. The Network helped countries review progress in the development of national HWTS policies, good practices in household environmental health interventions, tools for effective monitoring and evaluation of HWTS and the presentation of draft national action plans for scaling-up HWTS.

WHO continued to help countries improve health through safe and environmentally sound waste management, with financial support from the Global Environment Facility (GEF) and the Global Alliance for Vaccines and Immunization(GAVI). The interventions were focused mainly on showcasing and promoting best practices for reducing health waste so as

to avoid the release of dioxins and mercury into the environment (Senegal) and helping 36 countries in the Africa Region develop national plans and policies, strengthen capacities and support the implementation of best practices.

WHO collaborated with UNEP in developing an African action plan draft framework for the reduction of chemicals risks to human health and ecosystems. The framework addresses, in particular, the necessary improvements regarding knowledge and information on chemicals, institutional coordination, regulation, public policy support and an enabling framework for action. These specific interventions are aimed at ensuring the economic, environmental and health benefits of sound chemicals management for all stakeholders and fostering policy support and investments in favor of concrete actions for reducing chemicals risks to health and environment.

WHO also continued to provide support for the strengthening of poisons centres in Ghana, Senegal, South Africa and Kenya by availing them with data management softwares (INTOX Data Management System) and subscriptions to toxicological information resources. Further training in the use of INTOX DMS was provided to users in November 2011. In Nigeria, WHO, together with other partners, supported the Federal and State Ministries of Health in the management of mass lead poisoning in Zamfara State. In Angola, WHO supported government investigation of an illness of unknown causes.

WHO pursued the implementation of “Reduction of Health Risks through Sound Management of Pesticides” in six countries. This was the fourth year of project implementation at regional and country levels, including a comprehensive situation analysis of public health pesticides management. The situation analysis provided the basis for a number of other activities. All participating countries produced 3 to 5 year strategic plans addressing identified gaps in public health pesticides management.

Together with other partners, to reduce indoor air pollution and related household environmental health hazards, WHO strengthened country support for the promotion of clean cookstoves. WHO pursued efforts

towards the development of a comprehensive indoor air quality guideline for household fuel combustion to support national policies on the reduction of health risks due to household fuel combustion.

During the 2010-2011 period, WHO, in conjunction with Ghana's Ministry of Health and the Ghana Health Service, experimented the use of a new WHO strategic health impact assessment framework in the country's rapidly emerging oil and gas sector. This framework differs from the traditional HIA approach in that the assessment is conducted at the level of industry, and not that of a specific project. The Ghana pilot programme has already drawn the attention of other oil producing countries in the African Region. The initial experience was presented during a side-event in Luanda, in November 2010 at the Second Inter-Ministerial Conference on Environment and Health in Africa.

Recognizing the challenges of urbanization and health, WHO dedicated 2010 to urbanization and health through the organization of interlinked and mutually reinforcing global events, in a bid to highlight health risks in urban environments, as well as the existing opportunities and policies for health improvement in urban areas. The 2010 World Health Day sought to draw attention on urbanization and health and raise awareness at the highest levels. A Joint WHO/UN-HABITAT report provided evidence-based information to help municipalities and health authorities reduce health inequities in their cities. The Global Forum on Urbanization and Health that brought together mayors, municipalities and national ministries from various sectors led to a declaration of action to reduce health inequities in cities, referred to as the "Kobe Call to Action".

In 2010, WHO, together with the Ministries of Health of Ghana, Uganda and Zambia undertook efforts towards healthy home environments in which children are at a lesser risk of poisoning from paraffin and other common household chemicals. This involved establishing pilot childhood poisonings surveillance mechanisms in the 3 countries, undertaking public relations efforts focusing on media dissemination of messages on the prevention of child exposures to ordinary household poisons, consultations with kerosene dealers as regards safe packaging and the education of health providers on treatment of common childhood poisonings.

Countries were encouraged to develop occupational health policies and plans . In the African Region 13 and 10 countries have developed national plans and programmes, respectively, dealing specifically with the health of workers. WHO assisted Namibia in the implementation of its national occupational health policy and the capacity building of the Ministry of Health to lead action on occupational health. In 2010, WHO, in collaboration with ILO, developed a new tool for Work Improvement in the Health Sector, known as Health WISE, on the basis of Work Improvement in Small Enterprises (WISE).

WHO strengthened its collaboration with the African Society of Radiology for the development of referral guidelines for appropriate use of radiation imaging in resource-poor healthcare settings. The 3rd Regional Congress of the African International Radiation Protection Association, organized in collaboration with WHO and the International Atomic Energy Agency, was held in September 2010 and provided a platform for sharing current developments and future trends in radiation protection and building radiation protection capacity in the Region. WHO also participated in several regional meetings on the health impacts of mobile telephony.

Introduction

World Health Organization estimates show that about one-quarter of global disease burden and one-third of that in developing countries could be reduced through the implementation of environmental and occupational health interventions and strategies. According to most recent WHO estimates, in 2004, 15% (1.7 million) of all deaths in Africa were attributed to environmental risks factors⁹. This includes 896 000 deaths due to lack of access to safe drinking-water and adequate sanitation and hygiene, 612 000 deaths resulting from respiratory diseases due to air pollution, 57 000 deaths as a consequence of climate change and 77 000 deaths owing to occupational risks. WHO has a longstanding record of supporting countries in the implementation of environmental health interventions. The current Medium-Term Strategic Plan sets out a specific strategic objective aimed at promoting a healthier environment.

In the African Region, health and environment challenges continue to be provision of safe drinking water, sanitation and hygiene services; management of water, soil and air pollution; vector control and chemicals and wastes management; food safety; children and women's environmental health and occupational health.

Such risks, exacerbated by the adverse effects of climate change, unplanned urbanization, rapid population growth and rural-urban migration, exert pressure on already overburdened health systems that are operating in a context of human and financial resources scarcity.

To address the above challenges, African countries adopted a comprehensive policy framework and an implementation process through the Libreville Declaration on Health and Environment in Africa (2008), which is henceforth the overall framework for addressing health and environment linkages coherently through the streamlining of actions by various sectors and stakeholders at country and international levels.

⁹ WHO (2009). Mortality and burden of disease attributable to selected risk factors. Geneva, Switzerland. http://www.who.int/healthinfo/global_burden_disease/Global-HealthRisks_report_full.pdf.

WHO is scaling up technical cooperation with Member States and other development partners with a view to effectively addressing health and environment in the African Region. A previous report on WHO's activities in public health and environment in the African Region covering the period 2008-2009 was published in February 2010. The present report is therefore intended to present governments, partners and the general public progress and achievements in the area of health and environment over the 2010-2011 period.

Section 1.

THE WHO'S 2008–2013 HEALTH AND ENVIRONMENT STRATEGIC OBJECTIVES

One of the thirteen WHO 2008-2013 strategic objectives relates to the environmental determinants of health (strategic objective No. 8)⁹. This objective seeks “to promote a healthier environment, intensify primary prevention, and influence public policies in all sectors so as to address the root causes of environmental threats to health”. To achieve this objective, WHO defined 6 organization-wide expected results. For African Region they are:-

- Evidence-based assessments undertaken, and standards and guidance formulated and updated on major environmental hazards to health (e.g. poor air quality, chemical substances, electromagnetic fields, radon, poor quality drinking water, and waste-water reuse); technical support provided for the implementation of international environmental agreements and monitoring of progress towards achievement of Millennium Development Goals.
- Technical support and guidance provided to Member States for the implementation of priority programmes such as water, sanitation and hygiene, chemicals management, air pollution, waste management and integrated vector management, including in specific settings and among vulnerable population groups.
- Technical support provided to countries for the establishment of national health and environment strategic alliances to develop or update occupational and environmental health policies and regulations and prepare national plans of joint action for preventive interventions, service delivery and surveillance in the context of the Libreville Declaration on Health and Environment in Africa (2008)¹⁰.

² Reference of the MTSP.9

³ Reference Libreville Declaration.

- Guidance and tools provided to countries in using the health sector to influence policies in priority areas, assess health impacts, determine the costs and benefits of policy alternatives in those areas, and select investments in non-health sectors to improve health, the environment and safety.
- Health sector leadership enhanced in view of creating a healthier environment and changing policies in all sectors so as to tackle the root cause of environmental threats to health through means such as responding to emerging and re-emerging consequences of development on environmental health, climate change, and altered patterns of consumption and production and the damaging effects of evolving technologies.
- Evidence-based policies, strategies and recommendations developed and technical support provided to Member States for identifying, preventing and addressing public health problems caused by climate change.

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The above expected results will contribute significantly to preventive interventions for the control, prevention and elimination of communicable and non-communicable diseases (strategic objective 1), combating malaria, tuberculosis and HIV/AIDS (strategic objective 2), addressing public health in emergencies, social determinants of health, health risks factors, food safety as well as health systems strengthening (strategic objectives 5, 6, 7, 9 and 10, respectively).

Section 2.

MAIN 2008-2009 ACHIEVEMENTS

In the context of the implementation of the Libreville Declaration on Health and Environment in Africa, the report of the WHO Regional Director 2008-2009⁹, under strategic objective No. 8, states that the First Inter-ministerial Conference for Health and Environment in Africa was jointly organized by WHO and UNEP and hosted by the Government of Gabon, in Libreville, from 26 to 29 August 2008. The Conference was attended by more than 300 participants from 52 African countries, including 82 Ministers and Heads of Delegation.

Ministers adopted the Libreville Declaration on Health and Environment in Africa, in which they committed African countries to implement 11 priority actions for addressing health and environment issues in Africa, in particular, the establishment of a health and environment strategic alliance.

As a follow-up to the Libreville Conference, WHO and UNEP jointly convened the First Meeting of Partners for the Health and Environment Strategic Alliance in Windhoek, Namibia, from 25 to 27 February 2009. During this meeting, partners made the “Windhoek Statement of Partners on the Implementation of the Libreville Declaration on Health and Environment in Africa” in which they committed to provide support to the establishment of the Health and Environment Strategic Alliance and promote the initiation, as soon as possible, of country situation analysis and need assessments (SANA) for the preparation of national plans of joint action (NPJA). Partners adopted a roadmap to support the implementation of the Libreville Declaration, which describes key processes and milestones for the implementation of the Libreville Declaration at national and international levels.

⁹ Reference: Report of the Regional Director, 2008-2009.

WHO and UNEP Regional Directors established a joint task team to coordinate the implementation of the Libreville Declaration at country and international levels. The team developed SANA guidelines. The guidelines were finalized and disseminated to countries for use after field testing in Gabon and Kenya. In addition, the Joint Task Team prepared guidelines for the development of national plans of joint action as well as a computer-based programme for the management of health and environment linkages information. By the end of 2009, at least 10 countries had initiated the NPJA process.

Other key 2008-2009 achievements included continued collaboration between WHO and UNICEF on the Joint Monitoring Programme on access to drinking water and sanitation. Their latest report reveals that in 2008, only 60 % of the total population in sub-saharan Africa had access to improved drinking water sources with a major discrepancy between urban (83%) and rural areas (47 %). The report also shows that barely 31% of the population in sub-saharan Africa used improved sanitation, again with a significant difference between urban areas (44 %) and rural areas (24%)⁵. These figures are nearly identical to those of 2006, suggesting that more investments and resources are required for increasing access at a rate that exceeds population growth.

Efforts to improve drinking-water quality concerned the development of a manual and support for implementing water safety plans (WSP) in the Region and household water treatment and safe storage (HWTS), as an interim solution to safe water, was fostered through capacity building workshops in three African countries. Lastly, combining the delivery of HWTS with indoor air pollution reduction mechanisms was piloted in Kenya and Cameroon, in a bid to integrate household environmental health interventions in order to improve public health more effectively.

WHO is working with partners in malaria control to achieve universal access to long-lasting insecticidal nets (LLIN) and indoor residual spraying (IRS) interventions. This support was provided to countries, with a clear focus on

⁵ WHO/UNICEF. Progress on sanitation and drinking-water, 2010 update. Geneva, Switzerland.

resource mobilization through assistance in funding proposal development, provision of technical guidelines, training of field staff and assessment of interventions coverage.

Regarding climate change, in collaboration with the World Meteorological Organization, WHO organized a regional consultation to develop an agenda on climate change and health in Africa. The report of this consultation served as the Region's contribution to the preparation of the Global Action Plan on Climate Change and the Interministerial Conference on Health and Environment in Africa that was held in Gabon in 2008.

Finally, WHO strengthened its technical cooperation with countries on key environmental health areas. Health care waste management received special attention, through a GAVI funded project which is being implemented in 36 countries. Technical support continued to be provided to all malaria endemic countries for effective vector control in the context of integrated vector management. WHO also joined forces with UNEP, UNITAR, the SAICM Secretariat and the Stockholm Convention Secretariat to jointly implement initiatives and programmes for strengthening chemicals management in the Region, and also with ILO to implement the Global Action Plan on Occupational Health and Safety. Countries were supported in the development of policies relating to health and environment, in general, and workplaces in particular. They also received support for improving human resource capacities and addressing growing waste disposal challenges associated with electronics. Country capacities were strengthened and they were supported in the promotion of tools such as Healthy Cities that facilitates cross-sector actions for health and environment in rapidly growing urban areas. Efforts were equally made to increase awareness and action on the vulnerability of children to environmental health threats through the production of educational materials on Children's Environmental Health.

The 2008-2009 report acknowledges that countries that initiated the implementation of the Libreville Declaration fostered stronger and more direct policy options that created synergies among the various development sectors. There was renewed hope that sectors outside health would be fully engaged in delivery of health- and environment-based interventions in a coordinated manner to achieve greater reductions in the incidence of air-, water- and vector-borne diseases, injuries and chemical incidents.

Section 3.

IMPLEMENTATION OF THE LIBREVILLE DECLARATION ON HEALTH AND ENVIRONMENT IN AFRICA

During the reporting period (2010-2011), WHO strengthened its partnership with UNEP in order to sustain support to the implementation of the Libreville Declaration on Health and Environment in Africa, focusing on providing more countries the required technical and financial assistance for situation analysis and needs assessment. Specific actions are described in the following subsections.

3.1. Strengthening the policy framework

Efforts aimed at strengthening the policy framework were key to the implementation of the Libreville Declaration. In this respect, WHO and UNEP jointly organized, in collaboration with the Government of Angola, the Second Interministerial Conference on Health and Environment in Africa in Luanda, Angola, from 23 to 26 November 2010. The general objective of the Conference was to sustain the political commitment made at the Libreville Conference on enhanced intersectoral actions and co-benefits for human health and the environment in support of sustainable development.

The Conference fully achieved the above objective by adopting three major documents of high political significance: the Luanda Commitment, Arrangements for the Health and Environment Strategic Alliance and the African Ministers of Health and Environment Joint Statement on Climate Change and Health.

The Luanda Commitment outlines the continent's top health and environment priorities and requires governments to take further specific actions to address them. The said priorities are:

- provision of safe drinking water;
- provision of sanitation and hygiene services;
- management of environmental and health risks associated with climate variability and change, including rise in sea level affecting in particular Small Island Developing States ;
- sustainability of forests and wetlands management;
- water, soil and air pollution management and biodiversity conservation;
- vector control and chemicals (particularly pesticides) and wastes (including biomedical, electronic and electrical wastes) management;
- food safety and food security, including the management of genetically modified organisms in food production;
- children and women's Environmental health;
- Occupational Health; and
- natural and human-induced disasters management;

Ministers resolved to complete situation analysis and needs assessment in all African countries and prepare their national plans of joint action by the end of 2012. They also agreed to avail their contribution to the achievement of Millennium Development Goals by 2014 and establish an Integrated Health and Environment Surveillance System.

The Health and Environment Strategic Alliance (HESA) is the coordination mechanism intended to support the joint implementation of the Libreville Declaration. At the country level, HESA steers and executes an iterative situation analysis and needs assessment process, facilitates the identification of national priorities, develops NPJA, provides guidance for the formulation of cross-sector activities stemming from NPJA and involving a wide range of partners, monitors and evaluates progress and undertakes advocacy and resource mobilization. At the international level, HESA supports country efforts through advocacy, collaboration, resource mobilization, capacity building, technical guidance and progress monitoring.

Lastly, in Luanda, Ministers agreed to implement an essential public health package to enhance the climate change resilience status of all countries by 2014 and reduce vulnerability and use ecosystems services to build natural adaptive resilience to the adverse effects of climate change.



The Vice President of Angola, H.E. Dr Fernando da Piedade Dias dos Santos, speaking at the opening of the Second Interministerial Conference on Health and Environment in Africa.

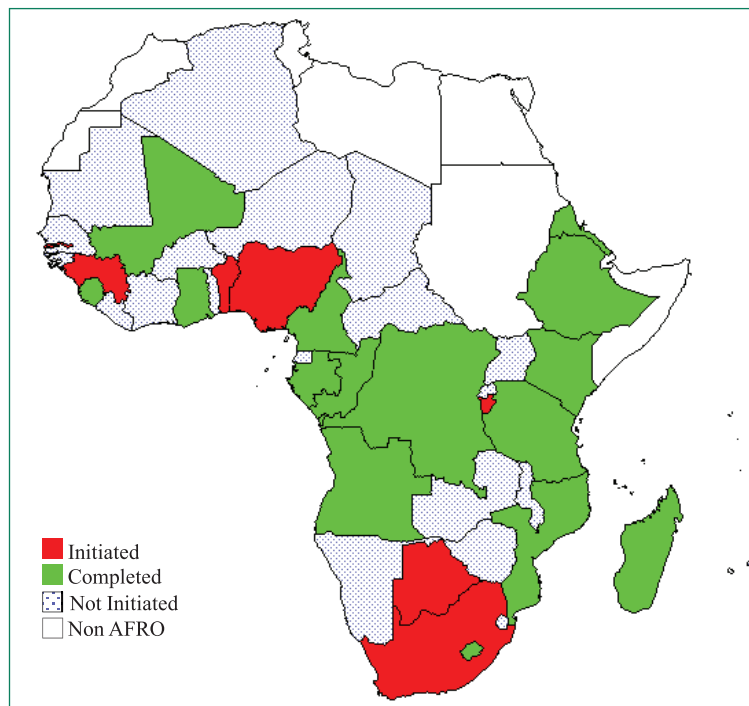
3.2. Scaling-up situation analyses and needs assessments

The implementation process of the Libreville Declaration comprises three phases: SANA, NPJA, and implementation. At the end of 2009, only 2 countries (Gabon and Kenya) had completed SANA. By the end of 2011, another 13 countries had finalized SANA by endorsing their national reports. They are Angola, Cameroon, Republic of Congo, Democratic Republic of Congo, Eritrea, Ethiopia, Ghana, Lesotho, Madagascar, Mali, Mozambique, Sierra Leone and Tanzania. Five other countries, namely: Benin, Botswana, Burundi, Nigeria and Seychelles have initiated the process while Comoros, The Gambia, Guinea and South Africa requested technical and financial support to undertake this activity.

All countries undertaking SANA established a Country Task Team (CTT). In most countries, CTT is composed of 10 to 20 national experts with experience in public health and epidemiology, environment, policy analysis, economics, statistics etc. CTT is a representation of all the ministries concerned; health, environment, agriculture, industry, planning, infrastructure, land, etc.; academia and research institutions; development partners and civil society. CTT affords experts from various backgrounds an opportunity to engage effectively in technical and scientific dialogue and reach consensus on the status and relative importance of environmental risk factors that impact health development as well as ecosystems conservation. It is thanks to such dialogue that, on the basis of SANA, it was easier for decision-makers from the various sectors concerned to agree on national health and environment priorities.

The following countries , based on SANA, completed the preparation of NPJA. They are: Ethiopia, Gabon, Kenya, Madagascar and Mali.

Implementation of Libreville Declaration : Progress in situation analysis and needs assessments (SANA)



3.3. Analyzing trends in environmental risk factors and national management systems

The WHO-UNEP Joint Task Team analyzed the national SANA reports of the 12 countries that had completed them by the end of 2010. This enabled to develop, for the first time, a continent-wide understanding of environmental determinants to human health and related national management systems. A report titled “Environmental Determinants and Management Systems for Human Health and Ecosystem Integrity in Africa: First Synthesis Report on the Situation Analysis and Needs Assessment for Implementation of the Libreville Declaration on Health and Environment in Africa”⁶ was produced and used as the main discussion paper at the Second Inter-Ministerial Conference.

The analysis confirmed that a large proportion of the disease burden in Africa is linked to 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 a consequence of human activity (deforestation, loss of biodiversity, disease vectors, drought, marine pollution, poor management of chemicals, hazardous and non-hazardous wastes, organic drinking-water pollution, air pollution, floods, etc.). In addition, the above risks are exacerbated by continued human and natural degradation of African’s principal 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 determinants of human health and ecosystem integrity are being put in place, but remain inadequate.

The analysis indicated that health and environment strategic alliances have not yet been operationalized formally. The absence of an overall framework to guide the management of health and environment linkages limited cross-

⁶ Environmental Determinants and Management Systems for Human Health and Ecosystem Integrity in Africa: First Synthesis Report On the Situation Analysis and Needs Assessment for Implementation of the Libreville Declaration on Health and Environment in Africa <http://www.unep.org/roa/hesa/Events/2ndInterMinisterialConference/ConferenceDocumentsPreSessionDocuments/tabid/6851/Default.aspx> (accessed on 21 November 2011).

sectoral collaboration. Poverty reduction strategy papers 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, focused on addressing health and environment linkages. However, they failed to provide specific mechanisms to develop and implement intersectoral programmes.

In almost all countries, there are national institutions devoted to health and environment issues. Their activities range from training, research, planning and implementation of health or environment interventions. However, few of these institutions worked on health and environment linkages. Available human resources offered a wide range of professional skills and expertise, though the extent to which these resources were used to assess and manage environmental risk factors was insufficient. Although local knowledge was acquired through research conducted by national research institutions, such research remained uncoordinated and publications were dispersed. Health and environment research agendas remained separated.

Some countries conducted communicable disease surveillance, while others undertook environmental assessments or prepared reports. However, there was almost no interaction between health and environment surveillance activities, particularly as concerns data sharing. None of the countries conducted a comprehensive and integrated environment and health surveillance. Nonetheless, some information available to governments was used to undertake communications and advocacy activities to inform and educate communities on specific public health and environment issues. Often, communication units existed within individual programmes or departments, but their activities were not coordinated.

Countries have ratified several multilateral environmental agreements and developed, when required, the necessary implementation measures. However, there was insufficient awareness, capacity and funding at national level to implement and enforce legal obligations attached to these international conventions and agreements. In fact, budgetary allocations to health and environment ministries remained low. SANA revealed that environment ministries receive 0.001% to 2% of total government budgets, and health ministries 3% to 11%.

3.4. Supporting the establishment of health and environment strategic alliances at country level:

Fifty-two African countries adopted the Libreville Declaration on Health and Environment in Africa in 2008. Hence, they committed to establish a strategic alliance between health and the environment. To translate this commitment into action, all countries initiating the implementation of the Declaration established a multidisciplinary and multisectoral Country Task Team.

One of the objectives of the Libreville Declaration is to facilitate joint action between the ministries of health, environment and other relevant ministries and stakeholders on issues pertaining to health and environment. In order to monitor and document the effective implementation of the Declaration at country level, WHO prepared an assessment tool to enable countries evaluate the extent to which joint actions are effectively being implemented. The tool (guide for assessment of health and environment intersectoral action) will be used by the Country Task Teams that were established for the purpose of situation analysis and needs assessment. This tool is currently being field-tested to document best practices in selected countries such as Cameroon, Ethiopia, Gabon, Kenya, Mali and Sierra Leone. Some of these countries have demonstrated very close collaboration and effective joint actions between health, environment and other sectors. Selected examples are presented below.

In Cameroon:

Cameroon completed the SANA process in 2010. The process was managed by an existing interministerial committee of national experts that was established even before the adoption of the Libreville Declaration. Prior to the Libreville Declaration, the committee had not been functioning properly. Thereafter, the Government of Cameroon revised the Terms of Reference and the composition of the committee, whose mandate was expanded to health and environment issues and involving the ministries of planning, finance, the WHO Country Office and other development partners.

The intersectoral collaboration established through the implementation of the Libreville Declaration was used to coordinate the management of cholera outbreak in Cameroon. Cameroon has been experiencing cholera epidemics since 2000. The most recent one occurred in 2010, with a total number of 10 759 cases reported. By the 49th week of 2011, the total number of cases reported was 22 752. To address the outbreak efficiently, the Government of Cameroon established the National Multisectoral Cholera Coordination Committee, composed of representatives of the various ministries concerned (health, environment, forestry, water resources, finance, social affairs, planning, women's affairs, education, and defense), WHO, UNICEF, UNFPA and other relevant partners. The Committee also has decentralized representation in the country's Regions and Districts.

The Committee adopted a five-pillar based approach to control the cholera outbreak with the following components: coordination, social mobilization, case identification and management, surveillance and provision of water, sanitation and hygiene (WASH) services. At the central level, there is a Weekly Coordination Committee chaired by the Minister of Health. At the regional level, the Regional Committee comprises the representatives of the above-mentioned ministries, including community-based organizations and NGOs. The Regional Committee is chaired by the Governor of the Region.

The roles and responsibilities of the different actors were clearly defined. The Ministry of Health was responsible for the overall coordination of activities, development of health promotion materials and information and case reporting. The Ministry of Environment was in charge of environmental sanitation. The Ministry of Environment and the Ministry of Urban Affairs and Housing provided support to municipalities for the deployment of urbanization and health interventions such as environmental sanitation. The Ministry of Defense provided temporary shelters (tents) and ensured the distribution of safe drinking water to communities. The Ministry of Water was responsible for improving water supply to communities through the construction of new wells and water storage tanks. The Ministry of Education undertook the promotion of handwashing and health education in schools.

The role of WHO was to provide technical support to the National Committee. The WHO Country Office specifically supported the regional and district operational teams by facilitating communication, data gathering, analysis and reporting, provision of data management logistics including telephone equipment and internet access, distribution of promotional materials. As of date, there has been a notable decline in the number of cases reported weekly.



Water treatment during a cholera epidemic in Cameroon

In Ethiopia:

Ethiopia completed the SANA process in 2010. The Assessment indicated that some of the major challenges in addressing health and environment linkages effectively were weak coordination of activities, policy fragmentation, overlapping of mandates between ministries and stakeholders and lack of a coherent coordination mechanism. To address the problem, the

Government of Ethiopia, on the basis of the recommendations of the SANA report, decided to establish a national Health and Environment Strategic Alliance (HESA) from among the relevant government

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In Kenya:

In Kenya, the implementation of the Libreville Declaration established a dynamic collaboration between the Ministry of health and the Ministry of Environment. WHO supports the National Environmental Sanitation and Hygiene Working Group which brings together all actors in the water and sanitation sectors through the Kenya Country Task Team (KCTT). Apart from the ministries of health and environment, members of the Kenya Country Task Team included the Ministry of Agriculture, the Ministry of Education and the Ministry of Water, the Kenya Medical Research Institute (KEMRI) and the University of Nairobi (UoN).

The WASH project, being one of the largest water and sanitation programme in Kenya, was selected for the Assessment. It is a five-year project which started in 2008. Although the project was designed before IMCH2, it is aligned to the principles of the Luanda Commitment on health and environment. It aims at improving child survival rates and development through increased access to sustainable improved water and sanitation and good hygiene practices for communities and schools. The project specifically addresses provision of safe drinking water, hygiene and sanitation services,

environmental health of children and women, and management of natural and human-induced disasters. In the context of the Libreville Declaration, an intersectoral committee supports and coordinates project activities. The following sectors participated in project development: health, environment education and agriculture. WHO, UNICEF and other UN Agencies are part of project coordination, including NGOs and donor countries (United Kingdom and The Netherlands). The project has so far achieved, amongst others, access to improved water to 773 000 people and sanitation to 415 000 people.

Another project selected for the Assessment and that demonstrated effective implementation of the Libreville Declaration is the Rehabilitation and Restoration of the Ecological Viability of the Nairobi Rivers Basin. The purpose of the project was to enhance the ecological integrity and economic value of the rivers of the Nairobi river basin. The three rivers are River Nairobi, River Mathare and River Ngong. The Programme was also intended to improve the welfare of the vulnerable population living 30 metres along the riparian reserve.

The project coordinating mechanism was ensured by a secretariat comprising: the Ministry of Health, the Ministry of Land, the Ministry of Environment and Mineral Resources, the Ministry of Water, WHO and other UN Agencies, civil society and the private sector. WHO played an essential role to ensure that the project takes into consideration a number of priorities under the Luanda Commitment, namely: provision of safe drinking water, provision of hygiene and sanitation services, sustainable management of forests and wetlands, vector control and management of solid wastes, improvement of children and women's environmental health, improvement of occupational health and management of natural and human-induced disasters.

The project's main activities included awareness raising and assessment of social impacts, surveys and delineation of the riparian reserve, control of illegal discharges, establishment of pilot demonstration sites, implementation of an integrated solid wastes management system, rehabilitation of the Nairobi dam, reparation and installation of sewerage and related infrastructure.

In Mali:

The Mali CTT comprised seventeen members from the following institutions: the national directorates of health, sanitation, control of pollution and nuisances, water and forestry, agriculture, industry, land transport and hydrology, mines and water resources and Meteorology; the Permanent Secretariat for Environmental Management; the Faculty of Science and Technology; the National Institute for Public Health Research and the Central Veterinary Laboratory . The Mali CTT completed SANA in 2010, with the technical support of WHO.

WHO helped the CTT develop a project to implement multisectoral water, sanitation and hygiene interventions within the context of the Libreville Declaration. The following sectors took part in the project : health, environment, education, agriculture, municipalities and NGOs. The project received a two-year grant from the Government of Luxembourg, amounting of 166 320 euros. The project was launched in November 2010 and its implementation started in January 2011.

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The objectives of the project were to promote water, sanitation and hygiene, in particular household water treatment, excreta disposal, hands washing with soap and hygiene interventions at community level (including at market places), focusing in particular on households and schools in two districts, namely: Niono and Yorosso.

The implementation of the Libreville Declaration established strong collaboration ties between the Ministry of Health and the Ministry of Environment. Joint actions between both Ministries are now effective, as demonstrated by the rapid and effective preparation of a national action plan for public health adaptation to climate change. The action plan coordination committee was chaired by the Minister of Environment, who was officially designated by the Cabinet to oversee this process. Indeed, the two Ministries concluded agreements for the transfer of specific activities under the coordination, including funds management, from one ministry to another, in relation to their comparative advantages.

The above examples show that the Libreville Declaration is ushering fresh impetus to intersectoral coordinated actions, particularly at policy level. It has opened new avenues for a more rapid and effective response to environmental threats.

3.5. Implementation of the Joint Statement on Climate Change and Health

The African Ministers of Health and Environment Joint Statement on Climate Change and Health requested WHO and UNEP to work with other partners to develop tools for providing technical support for the implementation of their on climate change resolutions. WHO thus undertook an assessment of county adaptation plans and the strengthening of a framework for public health adaptation to climate change.

(a) Health considerations in national adaptation plans of action to climate change

Between 2004 and 2009, developing countries prepared national adaptation plans of action to climate change. These multisectoral plans were aimed at responding to the most urgent adaptation needs of countries. In 2010, WHO undertook a review of health considerations in NAPA (including 29 from Africa). The purpose of the exercise was to assess the extent to which public health aspects were taken into consideration in countries' adaptation measures⁹. The review focused on identifying health impacts, adaptation needs and proposed actions and the implementation framework. It revealed that 39 of 41 reviewed NAPA (95%) considered health as being one of the sectors on which climate change was seen as having an impact. However, only 23% (9/39) of these plans were found to be comprehensive in terms of health-vulnerability assessment. In total, 73% (30/41) of the

⁹ Manga L and al, 2010. Overview of health considerations within National Adaptation Programmes of Action for climate change in least-Developed Countries and Small Island States. Available at: www.who.int/phe/Health_in_NAPAs_final.pdf (last accessed, 14 January 2010).

reviewed NAPA included health interventions within adaptation needs and proposed actions, but only 27% (8/30) of these interventions were found to be adequate. The total number of selected priority projects was 459, but only 50 (11%) of these projects focused on health. The total estimated cost of the priority projects was USD 1 852 726 528 with only US \$ 57 777 770 (3%) allocated to health. It was concluded that, apart from a few exceptions, the current consideration of public health interventions under NAPA was inadequate for ensuring public health protection against the negative effects of climate change.

(b) Framework for public health adaptation to climate change

In 2011, WHO prepared a framework for public health adaptation to climate change¹⁰. The document was submitted to the 61st Session of the WHO Regional Committee for Africa and endorsed by Ministers of Health through Resolution AFR/RC61/R2. The overall objective of the framework is to guide the formulation of country-specific action plans that will form the health component of national climate change adaptation plans aimed at minimizing the adverse public health effects of climate change. Countries were requested to implement essential public health and environment interventions. A core group of interventions was proposed as follows: baseline risk and capacity assessments, capacity building, awareness raising and social mobilization, integrated environmental and health surveillance, public-health oriented environmental management, scaling-up of existing public health interventions and research. The Resolution requested the WHO Regional Director to, amongst others, establish a Pan-african programme for public

⁸ WHO, 2011 – Framework for Public Health Adaptation to Climate Change. Document AFR/RC61/PSC/8.

health adaptation to climate change. Countries such as Benin, Ethiopia, Mali and South Africa have initiated the preparation of their national adaptation plans on the basis of this framework.

WHO, UNEP and other partners prepared a draft plan of action for health adaptation to climate change in Africa 2012-2016. The draft plan was presented jointly with the African Development Bank as a side-event at the 17th Conference of the Parties of the United Nations Framework Convention on Climate Change that took place in Durban, in December 2011.

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Photo credit: Lucien Manga

WHO stand at the UNFCCC COP 17 in Durban

Section 4.

COUNTRY SUPPORT FOR THE MANAGEMENT OF ENVIRONMENTAL RISK FACTORS

In the African Region, key environmental health challenges continue to be the provision of safe drinking water, sanitation and hygiene services; management of water, soil and air pollution; vector control and chemicals and wastes management; children's environmental health and occupational health. Such risk factors are aggravated by the negative effects of climate change, unplanned urbanization, rapid population growth and rural-urban migration. During the reporting period (2010-2011), WHO's activities focused on providing countries technical support to help address environmental determinants to health.

4.1 Vector control

(a) Scaling up malaria vector control interventions

Long-lasting insecticidal nets (LLINs) and indoor residual spraying (IRS) of insecticides remain the central components of the integrated vector management (IVM) strategy. WHO provided multifaceted support on a country-by-country basis, with focus on macro and micro planning for effective delivery of two interventions towards universal coverage. By the end of 2011, 23 countries, namely: Angola, Botswana, Burkina Faso, Burundi, Cote D'Ivoire, DRC Congo, Eritrea, Ethiopia, The Gambia, Gabon, Guinea, Guinea Bissau, Kenya, Liberia, Malawi, Madagascar, Mozambique, Nigeria, Senegal, Sierra Leone, Tanzania, Zambia and Zimbabwe had adopted policies to provide LLINs to all persons at risk, and not only vulnerable groups. Over 150 million LLINs were distributed in the Region in 2010-2011.

WHO facilitated malaria programme reviews in 19 countries (Benin, Botswana, Burundi, Comoros, Ethiopia, Malawi, Madagascar, Mozambique, Namibia, Niger, Rwanda, Sao Tome & Principe, Senegal, South Africa, Tanzania, Togo, Uganda, Zambia and Zimbabwe) and IRS-specific reviews in three countries (Botswana, Nigeria and The Gambia). Country epidemiological and entomological data were used to stratify malaria situations to guide selection of appropriate vector control strategies for each stratum. It was specifically critical for countries that opted for malaria elimination to reorient the IVM strategy accordingly. WHO helped Botswana, Eritrea, Kenya, The Gambia and Sierra Leone develop national IVM guidelines that combine malaria control with neglected tropical diseases.

Snapshot on the current coverage of malaria vector control interventions in the African Region:

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Regional average percentage of children sleeping under LLINs increased from about 44% in 2009 to approximately 73% in 2010-2011. LLIN use by under-five children exceeded 40% in 14 countries (Burkina Faso, DRC Congo, Kenya, Malawi, Madagascar, Mozambique, Nigeria, Rwanda, Tanzania, Uganda and Zambia), reaching 70% in Mali and 75% in Madagascar. The proportion of pregnant women using LLIN exceeded 40% in 10 countries (Burkina Faso, Democratic Republic of Congo, Eritrea, Kenya, Niger, Madagascar, Rwanda, Tanzania, Uganda and Zambia), reaching 60% in Rwanda and 71% in Niger and Madagascar.

The number of countries applying IRS for malaria control increased from 24 in 2009 to 29. Subsequently, IRS population coverage increased from about 50 million in 2009 to around 75 million people over the last two years. In 12 countries, it was estimated that between 30-85% of the at-risk population was protected using IRS. More than 25 Sub-Saharan countries utilize both IRS and LLINs interventions, although usually in different geographic areas. Five countries

in Eastern and Southern Africa reported achieving universal coverage of both LLINs and IRS and the large majority of the at-risk population in the rest of the countries are using IRS and/or LLINs. Alongside WHO's technical support, partners such as PMI contributed financial resources to the introduction and expansion of IRS in areas where the method was not applied previously, hence contributing to the increase in coverage.

(b) Standards for organizing and strengthening vector control services

An increasing number of countries are embarking on malaria elimination. Hence, the need expressed by countries for guidance on the organization and strengthening of vector control services. To this end, WHO developed standards for organizing and strengthening vector control services in view of eliminating malaria and other vector borne diseases in the WHO African Region. The said standards were reviewed and endorsed by a technical consultation on malaria vector control organized in Brazzaville, in October 2011. The standards provide guidance on the functions of a vector control service at community, district, provincial and central levels. They define vector control service delivery standards at all levels in decentralized health systems. They also provide basic information required by national authorities to develop comprehensive and detailed job descriptions in relation to the national context and define a minimum package of technical resources and a generic plan to organize and strengthen vector control services.

(c) Revision of current recommendations on malaria vector control

The above-mentioned technical consultation also reviewed current recommendations on malaria vector control, since countries were increasingly adopting the IVM strategy and there was a need to clarify criteria for the appropriate selection of interventions

based on new epidemiological evidence. Experts agreed that IRS and ITNs can be considered as measures of general applicability, while other vector control measures may be applicable in particular circumstances; and that the process of deciding which mosquito control method is appropriate in a given context should be guided by an analysis of the level of malaria endemicity and vector bionomics, the eco-epidemiological setting, the health management system and the ability to sustain the programme. Countries were encouraged to implement regulatory measures for preventing the creation of man-made vector breeding sites or ensuring proper vector management.

(d) Development of a vector control decision support system

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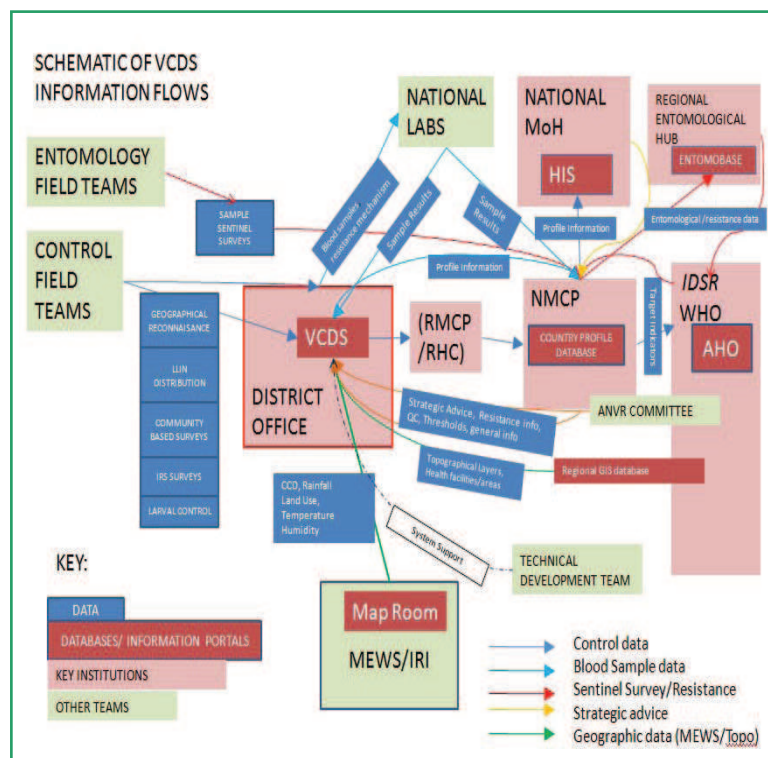
In 2009, WHO initiated the development of a vector control decision support system (VCDS) to facilitate evidence-based decision making at the local level, where entomological capacities are often lacking. The project, which received financial support from the Gates Foundation, aims at assisting district health teams to plan and manage their control operations more effectively. The project was planned in three phases: development of a prototype, pilot testing and roll out. WHO collaborates with institutions specialized in IT systems and in geographical information systems applied to health.

Substantial progress was made between 2010 and 2011 for the development of VCDS. The prototype phase was completed and preparations for field testing initiated. The prototype adopted the district health information system as a platform to provide tools for managing data and producing outputs for vector control activities.

VCDS is a user-friendly tool with functions and options enabling, amongst others, to create a repository for entering data on geographical reconnaissance, vector control operations (IRS and LLIN distribution), background information (e.g. rainfall), community-based survey to evaluate control efficacy, user

controlled data planning, and for integrating health statistics on malaria incidence. It also helps determine thresholds and parameters (referred to as constants in the system) for decision support tools including the ability to calculate key indicators using data combinations to generate M&E reporting statistics such as the roll back malaria targets.

The system is inherently hierarchical and can be scaled up from district to national and regional level. Data exchange between levels is possible. It can work standalone over an internal network or internet. The System is flexible and adaptable to the data gathering and reporting needs of district, national and regional structures (to be determined early at the pilot phase) and is structured in a modular form capable to adapt to changing priorities over time.



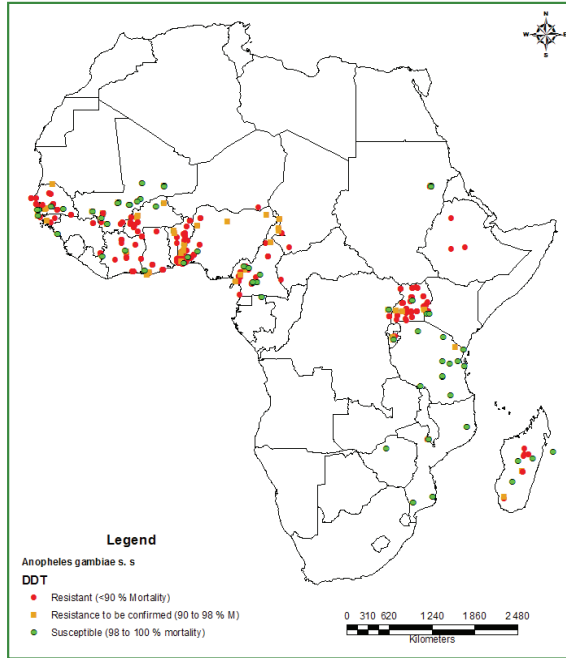
Conceptual framework of the vector control decision support system

4.2. Insecticide resistance monitoring

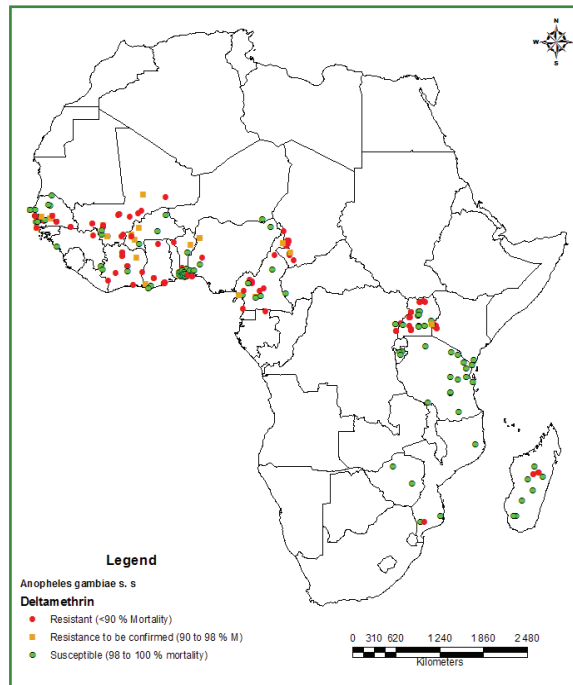
WHO continued to strengthen and coordinate the work of the African Network on Vector Resistance to Insecticides. One of the major outcomes of this activity was the preparation of the second Atlas on insecticide resistance in malaria vectors in the African Region. A total number of 1 909 bioassay results covering 364 different sites in 30 countries were collated, included in a specific database and analyzed. The data covers the period from 2004 to 2010. The atlas presents trends in vector resistance in major malaria vectors to the commonly used insecticides in public health.

The information generated shows that in the majority of surveyed localities in West, Central, and Eastern Africa, *An. gambiae* was found resistant to DDT and Pyrethroid, particularly in West Africa. Data from Eastern and Southern Africa suggest that DDT and pyrethroid resistance of *An. gambiae* s.s. in this part of the continent was much less critical compared to Central and West Africa. Resistance to carbamate (carbosulfan) was already detected in Côte d'Ivoire and is now spreading (Bendiocarb) across West Africa. Resistance to organophosphates (Fenitrothion) was observed in very few localities.

An. Arabiensis resistance to DDT was found in different parts of Africa. At continent level, *An. funestus* remains globally susceptible to insecticides except in Southern Africa (South Africa & Mozambique), where it is resistant to pyrethroids (but susceptible to DDT). This resistance is due to a mechanism other than *kdr* mutation (detoxification). This resistance is spreading in this part of the continent. For instance, Pyrethronoid resistance was observed or suspected in some localities in Tanzania, Malawi and Kenya. Further studies are required to confirm such resistance.



Distribution of DDT resistance in *Anopheles gambiae*



Distribution of DDT resistance in *Anopheles gambiae*

4.3 Supporting water, sanitation and hygiene interventions

Improving access to safe drinking-water and sanitation and promoting safe hygiene practices are key environmental public health elements. At WHO, the importance of this essential public health intervention gained support and visibility in the 2011 World Health Assembly (WHA) through Resolution 24/64: Drinking-water, Sanitation and Health, the first of its kind in 20 years. The Resolution urges Member States to recognize safe drinking water, sanitation and hygiene as the basis for primary prevention in health strategies and calls for a comprehensive WHO strategy on water, sanitation and health⁹. In addition, further support for water, sanitation and hygiene actions was recognized under WHA Resolution 64/14: Cholera: Mechanism for Control and Prevention, also passed in 2011¹⁰.

The specific water, sanitation and hygiene domains for which WHO provided countries leadership and support were coordination, policy development, strategic planning and guidelines. Such actions were conducted through monitoring of access to water supply and sanitation, in collaboration with UNICEF; tracking of water and sanitation sector inputs (Global Assessment of Access of Drinking Water and Sanitation (GLAAS) and support for drinking-water quality monitoring); support for safe drinking water through the International Network on Household Water Treatment and Safe Storage, in partnership with UNICEF and development of water safety plans, emergency preparedness and response systems and health care waste management. These actions are described in greater detail below.

⁹ WHO. World Health Assembly Resolution 64.24. *Drinking-water, sanitation and health*. May 2011. http://apps.who.int/gb/ebwha/pdf_files/WHA64/A64_R24-en.pdf

¹⁰ WHO. World Health Assembly Resolution 64.15. *Cholera: mechanism for control and prevention*. http://apps.who.int/gb/ebwha/pdf_files/WHA64/A64_R15-en.pdf

(a) Monitoring access to safe drinking water and sanitation

During the reporting period, the WHO-UNICEF Joint Monitoring Programme (JMP) pursued its data reconciliation activities in Africa, in a bid to increase the understanding of JMP methods and definitions at the national level and reduce the gap between global and national coverage. The principal method used for the country reconciliation process consisted in bringing together the various national monitoring actors, analyzing the data and estimates, identifying and understanding the existing gaps between the different approaches, methods, definitions, categories and examining possible improvements enabling to provide better estimates reflecting the actual drinking-water and sanitation situation at national level.

During this period, WHO organized data reconciliation workshops in East, Southern and West Africa. The exercise helped to improve the quality of survey tools in countries and increase collaboration between the relevant national agencies in charge of the water and sanitation monitoring.

In Mali, a working group was established, comprising representatives of the ministries in charge of drinking water, sanitation and health, the National Institute of Statistics and technical partners such as WHO and UNICEF. The group revised indicators for estimating access to water and sanitation, as well as minimum standards for individual latrines. It also helped the country adopt a standard questionnaire to be used for future water and sanitation surveys.

In Madagascar, the process resulted in a precise definition of water and sanitation indicators to be used by all stakeholders including the National Statistics Office. An official nomenclature of the definitions was also adopted.

In Ethiopia, the first data reconciliation workshop was organized in October 2010, in the context of preparations for the Ethiopian National Water and Sanitation Inventory. The second workshop was organized by WHO, in November 2011, to discuss the most recent JMP data and to reconcile them with national estimates, review the GLAAS questionnaire and harmonize national monitoring with global monitoring methods and processes. Due to WHO's efforts that brought together the health and water sectors and the National Statistics Agency, the workshop enabled to resolve data discrepancies and strengthen national data collection and management capacities. Both JMP and GLAAS activities helped to improve understanding and decision-making as regards inputs to the water and sanitation sector and the related outcomes in terms of access to water and sanitation services.

In support of regional events in Africa, the JMP prepared regional snapshots to highlight the regional perspective on drinking water and sanitation, based on JMP data. Therefore, a snapshot on Africa and another one on sub-saharan Africa were prepared in 2010. A specific snapshot on sanitation was prepared as a contribution to the Third African Sanitation and Hygiene Conference (Africasan 3) which was held from 19 to 21 July 2011 in Kigali.

Africasan 3, was hosted by the Government of the Republic of Rwanda and the African Minister's Council on Water (AMCOW). Despite progress made by a few countries since the last Conference in 2008, in Durban, participants acknowledged that the overwhelming majority of countries in the continent are not yet on track to meet the sanitation MDG. WHO organized four events, including a data reconciliation side-event, a monitoring seminar, a luncheon within the context of the 5-year drive to 2015 initiative and the presentation of GLAAS highlights. Conference participants acknowledged the contribution of the JMP in providing regular statistics on water and sanitation, thus contributing to decision-making in countries.

JMP produced a detailed report titled Challenges in Access to Drinking Water: Equity, Safety and Sustainability. The Report highlights the high disparities in the African Region (>25%) in improved drinking-water use in urban and rural areas, as well as fecal contamination trends in drinking-water sources. The analysis serves as an important point of departure for addressing access inequities in the Region.

Figure 7: Use of improved and unimproved water sources in Africa in 2008

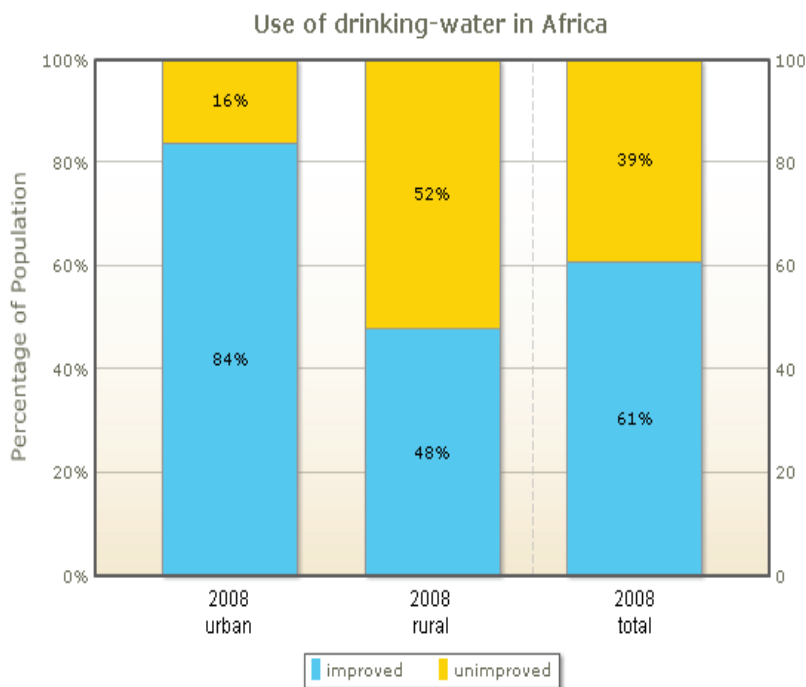
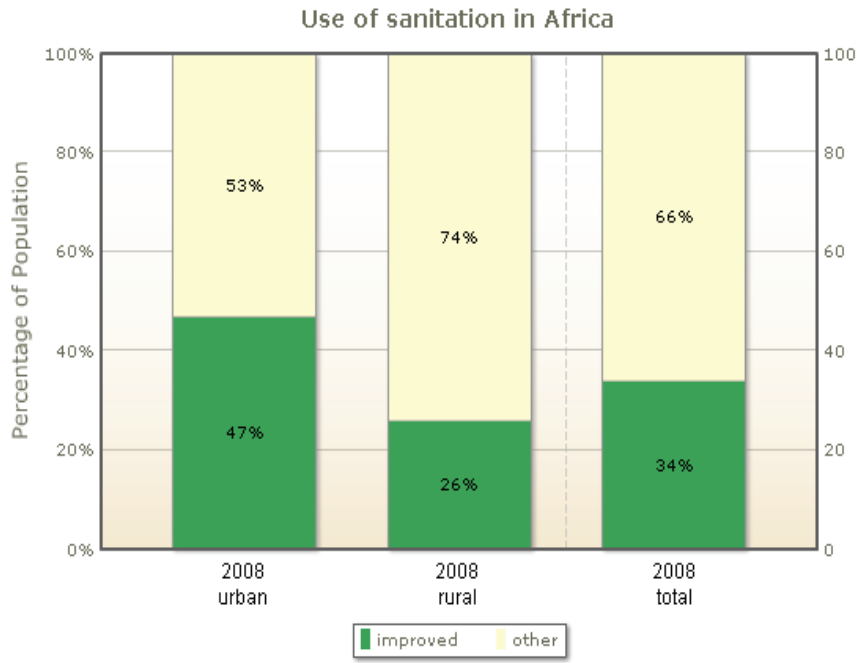


Figure 8: Use of improved sanitation in Africa in 2008



Source: A snapshot of drinking-water and sanitation in Africa :A regional perspective based on new data from the WHO/UNICEF Joint Monitoring Programme for Water Supply and Sanitation prepared for AMCOW as a contribution to the African Union Summit on Water Supply and Sanitation, (JMP 2010)

(b) Analysis and Assessment of Sanitation and Drinking-water

GLAAS is a resource for the Sanitation and Water for All: A Global Framework for Action political initiative. In particular, GLAAS findings are used as a basis for the strategic discussions that will take place at the biennial global high-level meeting in April 2012, to be hosted by UNICEF, in Washington DC, during the World Bank’s Spring Meetings.

In 2010, the UN-Water Global Analysis and Assessment of Sanitation and Drinking-water (GLAAS), implemented by WHO, published its first report, with a detailed review of 28 African

countries¹¹, as well as the key determinants influencing progress on water, sanitation and hygiene (WASH), namely: the existence and effectiveness of WASH-related policies, institutions, planning and monitoring, budgetary, financial and human resources. It is hoped that the evidence generated by GLAAS will be used by governments and external support agencies to better target resources, in order to expand the coverage of water and sanitation services to those still lacking them and improve the quality of water supply and sanitation facilities.

The GLAAS data collection in Africa was coordinated by the World Bank Water and Sanitation Programme's Country Status Overview initiative, and supported by the African Minister's Council on Water. For each African country, numerous ministries were involved in responding, but, generally, the Ministry of Health and the Ministry of Water (or an equivalent ministry).

In 2011, an African regional snapshot was produced. This snapshot showed that WASH aid levels to sub-Saharan Africa, despite the need, are not keeping pace with aid commitments made by the rest of the world. Several donors, notably the biggest, allocated less than 50% of their sanitation and water aid to basic systems in Africa.

While most African countries have developed WASH policies, institutional roles are not well defined, and sound investment plans are often lacking. Moreover, effective monitoring and evaluation systems are usually not in place to capture the flow of WASH finances and monitor implementation for informed planning. The GLAAS survey concluded that despite a few cases

¹¹ Angola, Benin, Burkina Faso, Burundi, Cameroon, Central African Republic, Chad, Côte d'Ivoire, Democratic Republic of the Congo, Ethiopia, Ghana, Kenya, Lesotho, Madagascar, Mali, Mauritania, Morocco, Mozambique, Niger, Rwanda, Senegal, Sierra Leone, South Africa, Sudan, Togo, Uganda, United Republic, of Tanzania, Zimbabwe

where there have been substantial progress, many countries recognized that they are allocating insufficient resources to WASH initiatives to meet either MDGs or national targets.

(c) Drinking-water quality monitoring

Although water quality is not measured through JMP indicators, it is an important monitoring domain regarding various aspects of WHO's activities, including water safety plans and household water treatment. During the 2010-2011 period, WHO helped Ethiopia and Rwanda to develop their national water quality monitoring and surveillance strategies. These strategies are key to assessing access to safe drinking water through rapid drinking-water quality assessment and identifying poor water-quality sources and mitigation measures at district level. One particular aspect of drinking-water quality monitoring was fluoride mapping in the entire Rift Valley. In this regard, WHO supported the mapping of high risk fluoride zones and development a comprehensive fluoride mitigation programme. Mapping has been completed in Ethiopia and dissemination is planned for 2012-2013.

(d) Household water treatment and safe storage

The African Region continues to figure prominently in the Phase II Strategy (2011-2016) of the International Network on Household Water Treatment and Safe Storage. The mission of the Network that is jointly hosted by WHO and UNICEF, is to contribute to a significant reduction of waterborne and vector-borne diseases, especially among vulnerable populations, by promoting household water treatment and safe storage as a key component of water, sanitation and hygiene programmes. The Network includes international and public bodies, nongovernmental organizations, private sector entities and academia that subscribed to the above mission. Based on a recent survey of over 100 participating organizations, a large proportion is focusing efforts on the African continent where there is a considerable and immediate need to increase access to safe drinking water.

The Network provided support to five East African countries in 2011. To that end, a workshop was organized in Uganda to review progress in developing national HWTS policies, good practices in integrating household environmental health interventions and effective HWTS monitoring and evaluation tools¹² and presenting draft national action plans for scaling-up HWTS. Further to this workshop, Ethiopia, Kenya, Rwanda, Tanzania and Uganda finalized their plans and shared them with WHO and UNICEF for technical and financial support.

One particular area of focus of the Uganda workshop and the Network, generally, is the integration of household water treatment with other environmental health efforts.

This action, which marks a shift from tackling single diseases to providing a package of services for interrelated diseases, is receiving growing support. Both Rwanda and Ethiopia are implementing national programmes aimed at reducing the burden of major causes of ill-health (diarrhoea, pneumonia, malaria) through integrated approaches. Malawi, with support from WHO, is currently providing household water treatment and hygiene education as part of maternal and child health programmes. WHO continues to envisage the best ways to package household-level environmental health interventions such as household water treatment and safe storage, improved cookstoves, insecticide-treated bed nets, nutrition and promotion of handwashing to improve health more efficiently, especially among the most vulnerable populations in the African Region.

¹² WHO/UNICEF, 2011. National Household Water Treatment and Safe Storage Strategies and Integrated Household Environmental Health Interventions Report of a Workshop for selected countries in East Africa November 2011. Geneva, Switzerland. http://www.who.int/household_water/resources/EntebbeReportJune2011V2.pdf

(e) Water safety planning

The African Region has achieved significant progress as regards water safety planning, a holistic risk assessment/risk management approach for a more effective management of drinking-water supply, as recommended by the WHO Guidelines for Drinking-water Quality. A greater number of countries in the Region were sensitized on the water safety plan (WSP) concept. Nigeria has initiated pilot projects while Ghana, Kenya, Uganda, South Africa are scaling up implementation.

(d) Healthcare wastes

Poor management of healthcare waste can have both direct and indirect consequences for health personnel, community members, and the environment. Direct consequences of poor waste management occur when disposable materials (especially syringes) are intentionally re-used. Hepatitis B and C and HIV transmission are the main disease burden caused by poor management of injection-related waste. Accidental injuries may also occur when people mishandle or are exposed to inadequately disposed waste, for instance, scavenging on waste dumps.

Indirect health effects can occur from environmental pollution in the form of toxic emissions due to wanton burning of medical wastes or in the sheer volume of waste generated in a short period of time. For instance, a countrywide mass immunization campaign will produce millions of used syringes in three or four weeks. This requires appropriate options and a well-prepared strategy defined months before the campaign starts.

WHO continued to help countries improve health through safe and environmentally sound waste management with financial support from the Global Environment Facility (GEF) and the Global Alliance for Vaccines and Immunization (GAVI). The interventions focused mainly on showcasing and promoting best practices for reducing health wastes so as to avoid release of dioxins and

mercury into the environment (Senegal) and helping 36 countries in the Africa Region develop national plans and policies, build capacity and support the implementation of best practices.

In 2010, the yellow fever mass campaign in Guinea was an opportunity to invest on treatment technologies. Hence, four new high-temperature incinerators were installed and one other incinerator rehabilitated. In Tanzania, a survey and inventory on mercury use was undertaken in healthcare facilities in Dar es Salaam and Bagamoyo. The ultimate goal being the total elimination and phasing out of mercury fever thermometers, as well as blood pressure devices in health care institutions in the country.

Support was provided to countries to improve their waste treatment options. In Mali, Kenya, Uganda, Mozambique and other countries of the Region, capacity building was provided to health personnel at all levels of the health care system. In addition, in Mali, WHO supported the Ministry of Health in establishing a district-based health waste management system that has proven effective in engaging local healthcare facilities in managing and safely disposing of wastes. WHO also provided technical support for the development of a small autoclave (University of Dar Es Salaam, Tanzania) to treat wastes, including wastes generated by immunization activities.

(e) Water, sanitation and hygiene in emergencies

WHO continued to provide critical support for water, sanitation and hygiene interventions during emergency situations. In 2010, the WHO Country Office provided assistance during an acute diarrhoea outbreak through the provision of household water treatment, training of health and water professionals and provision of rapid water quality testing kits for water quality monitoring and surveillance. This led to the development of a five-year national water-quality monitoring and surveillance action plan (2011-2016). The ultimate goal of this plan is to ensure that by 2015, every Ethiopian household has access to safe drinking water.

(f) Handwashing promotion

The Global Handwashing Day is a campaign to motivate and mobilize millions of people around the world to wash their hands with soap. The campaign is dedicated to raising awareness of handwashing with soap as a key approach to disease prevention. Many African WHO Offices played an active role in supporting celebrations in 2010 and 2011, which have increasingly grown in size and scope. Celebrations in a number of countries such as Ethiopia and Mali were linked to broader initiatives like promoting handwashing in schools.

(g) Waste management

In 2011, WHO helped Sierra Leone conduct a nation-wide analysis of the waste management situation. Outcomes of the situation analysis led to the development of an integrated waste management policy. The policy document seeks to provide a framework for making fundamental changes required for including integrated waste management and environmental considerations into the mainstream of decision making in Sierra Leone. It seeks to provide policy guidelines, strategic plans and guidance to the determination of priority actions. The national integrated waste management policy provides monitoring and evaluation, regular review of policy and plans and programmes to ensure timely delivery of services. It further provides for sectoral and cross-sectoral policy analysis in order to achieve compatibility among sectors and interest groups and create synergy among them. The policy is designed to ensure that every effort is made to minimize the generation of hazardous wastes and that such wastes are properly managed and disposed of in accordance with applicable Federal, State and local regulations. The overall objective of the integrated waste management policy is therefore to ensure sustained, safe and equitable use of resources for meeting the basic needs of present and future generations without degrading the environment or risking health

or safety. A five-year strategic plan was developed to implement the policy, based on the need to establish improved waste management systems, as identified through the situation analysis.

(h) Building capacity for health impact assessment

Health impact assessment (HIA) capacity, notably in the public sector, remains very limited within the Region. Even where HIAs are commissioned, they are most often undertaken in the context of large private sector development projects. Reliance on international consultants for the conduct of HIAs in these instances remains high, largely due to the lack of qualified HIA practitioners in the Region.

During the reporting period, WHO, the Ministry of Health of Ghana, and the Ghana Health Service experimented the use of a new WHO strategic health impact assessment framework in the country's rapidly emerging oil and gas sector. This framework differs from the traditional HIA approach since the assessment is conducted at the level of the industry, and not that of a specific project. A range of health impacts associated with cumulative and multiple investments in the oil sector are being considered, including, for instance rapid population migration to localities (e.g. port areas) where there are oil activities, as well as the potential health impacts associated with related infrastructure development (e.g. pipelines, refineries, and other petrochemicals facilities). This strategic HIA also considers impacts on health systems so as to enable the identification of required capacities to address the identified occupational and public health impacts.

The strategic HIA was designed to facilitate capacity development and institutional strengthening in Ghana, and includes numerous training and practical skills development activities for regulatory authorities (health and environment) and the School of Public Health. Additional capacity development activities are being conducted for the School of Public Health to facilitate the establishment of a national institution that can participate in the strategic HIA monitoring and follow-up activities and deliver future training and technical support for HIA in Ghana.

The Ghana pilot programme has already drawn the attention of other oil producing countries in the African Region. The initial experience was presented at a side-event in Luanda, in November 2010, during the Second Inter-Ministerial Conference on Environment and Health in Africa.

4.4. Chemicals management

(a) Framework for an African programme to reduce chemicals risks to human health and the environment

Ministers of Health and Ministers of Environment identified chemicals management among the first ten health and environment priorities in Africa. In the context of the Health and Environment Strategic Alliance, WHO collaborated with UNEP in developing a draft framework for an African action plan to reduce chemicals risks to human health and ecosystems. The framework promotes effective implementation and enforcement of both the Strategic Approach to International Chemicals Management (SAICM) and the international conventions on chemicals .

The framework is a comprehensive health and environment intersectoral response to essential capacity building and technical assistance needs in support of actions to reduce health and environment risks due to poor chemicals management. It addresses, in particular, the necessary improvements regarding knowledge and information on chemicals, institutional coordination, and regulations, public policy support and an enabling environment for action. These specific interventions are aimed at ensuring the economic, environmental and health benefits of sound chemicals management for all stakeholders and encouraging policy support and investments in favor of concrete actions to reduce chemicals risks to health and environment. Such interventions include: national chemicals management profiles; comprehensive integrated health and environment chemicals risks assessments , as well as

assessment of required national core capacities, development of coherent legal and institutional frameworks including enforcement strategies for sound chemicals management.

(b) Management of chemical incidents

In June 2010, WHO organized, in Ghana, a sub-regional workshop on poisons centres and management of poisoning. The first part of the workshop dwelled on presentations on the management of common poisonings in the sub-region. The workshop was attended by representatives of poisons centres in Ghana, South Africa and Zimbabwe, as well as local nursing and medical staff. The second part of the workshop addressed the lack of poisons centres in the Region and the possibility of establishing a sub-regional poisons centre. This part of the workshop was attended by SAICM focal points from Ghana, Tanzania and Zambia. The establishment of poisons centres has been a recurring priority issue discussed by the SAICM African Core Group. Participants at the workshop developed an outline project proposal for the SAICM Quick Start Programme to explore the feasibility of establishing a sub-regional poisons centre in East Africa. This proposal was further developed by WHO and submitted to the QSP Trust Fund Committee. The feasibility study will start in early 2012.

WHO also continued to provide support for the strengthening of poison centres in Ghana, Senegal, South Africa and Kenya through the provision of data management software (INTOX Data Management System) and subscriptions to toxicological information resources. Further training in the use of the INTOX DMS was provided to users in November 2011.

In Nigeria, WHO, together with other partners, supported the Federal and State Ministries of Health for the management of mass lead poisoning in Zamfara State, thanks to funding provided by the UN Central Emergency Response Fund. The main interventions focused on remediation of villages; social

mobilization and community awareness activities aimed at informing local communities about the hazards of lead and how to prevent lead exposure, including safer mining and gold extraction processes; establishment of a surveillance system for the early detection of lead poisoning in Zamfara State and training for doctors, nurses and laboratory staff at the Gusau lead treatment centre on the diagnosis and management of lead poisoning.

In Angola, following a series of outbreaks of an unknown illness in schools, WHO supported government investigation by sending a team of epidemiology, laboratory analysis, pharmacology and clinical toxicology experts. Blood samples were collected and schools provided passive air samplers. The investigation could not confirm any chemical cause for the outbreak and a protocol was put in place for further sampling and clinical investigation in the event of a new outbreak.

(c) Strengthening public health pesticides management

WHO pursued the implementation of “Reduction of Health Risks through Sound Management of Pesticides” in six countries, namely: Cameroon, Kenya, The Gambia, Madagascar, Mozambique, and Tanzania. This was the 4th year of implementation of project activities at regional and country levels, including a comprehensive situation analysis of public health pesticides management. The situation analysis provided the basis for a number of other activities. All participating countries produced 3 to 5 year strategic plans addressing the identified gaps in public health pesticides management. A total of 149 persons from the various relevant institutions were trained in the six countries. To address the problem of limited national capacity for pesticides quality control, the capacities of 21 laboratories responsible for pesticides quality control were assessed and recommendations made for capacity building as part of national action plans. The situation analysis in the six countries revealed the absence of

public health pesticides policies. Consequently, a guideline on public health pesticides management policy for the WHO African Region was developed, published (in French & English) and disseminated to all Member States. The guideline was rolled out in eight countries, two of which have already developed national policies, while the process is ongoing in the remaining countries.

4.5. Management of air pollution

The launching, in 2010, of the UN Foundation Global Alliance for clean cookstoves¹³ attracted great attention and substantial resources for indoor air pollution, a major public health concern in Africa. An initial target of the Alliance was to initiate the use of 100 million new clean and safe cookstoves (solid and/or clean fuel) by 2020 and support the required research, market development, financing, monitoring and evaluation. WHO is a founding partner of the Alliance. Till date, six African countries have joined the Alliance. They are Burkina Faso, Ethiopia, Kenya, Lesotho, Nigeria, Rwanda, Tanzania and Uganda, and there are plans to identify ways in which the Alliance can best support national efforts to provide clean cooking solutions to households in Africa.

Household water treatment and improved stoves are two environmental interventions that can play an important role in health protection and preventing diarrhoea and respiratory diseases. In a bid to establish synergy between indoor air and drinking water quality improvement interventions at household level, WHO undertook a joint project in Cameroon and Kenya¹⁴. The project was evaluated, a detailed final report produced, and the main findings were as follows:

¹³ <http://clean cookstoves.org/>

¹⁴ WHO, 2011. Combined household water treatment and indoor air pollution projects in urban Mbandaka, Cameroon and rural Nyanza, Kenya. February, 2011. Geneva, Switzerland. http://www.who.int/household_water/resources/HWTSIndoorAirV3.pdf.

- statistically, significant reductions in the amount of fuel used (around 30%) and associated costs (26%), and some evidence of reduced time spent cooking (10%) but no significant difference in the total time the stove was used during the day;
- there were cost reductions in the physical delivery of stoves and household water treatment;
- using a single theme, the kitchen, joint promotion of the interventions provided a more consolidated and holistic understanding of health gains and potentially more enduring message;
- delivery of interventions and messages through community health workers proved effective as they imparted a feeling of familiarity and trust, and bridged the divide between implementers and the community. Community members received messages from trusted and known persons.

WHO is now working on a number of areas, based partly on the outcomes of the Kenya and Cameroon evaluation, in order to improve the effectiveness of indoor air pollution reduction and related household environmental health interventions. Field testing for the improvement of cookstoves combustion efficacy achieved greater reductions of PM_{2.5}. It was launched in 2011 in Western Kenya. This effort, which builds on previous initiatives towards integrating household energy and WASH interventions in the country, is being carried out by CDC, WHO, and a number of partner universities, including those in Kenya.

In addition, WHO is working on the development of global indoor air quality guidelines for household fuel combustion that will support national policies on reducing the health burden of household fuel combustion. It is expected that the guidelines will be published in early 2013, and this will be followed by a second evaluation phase, in close collaboration with one or more countries of the African Region.

Finally, regarding outdoor urban air pollution, WHO launched a new global database in September 2011¹⁵. The database covers the period from 2003 to 2010, with a significant proportion of 2008 and 2009 values, mainly PM10 (with some PM2.5) values. Although data on air quality monitoring in African cities is relatively sparse, a number of cities are already included in the database that shows that ambient pollution is an important public health issue.

4.6 Promotion of healthy settings

Urbanization is one of the greatest health challenges of the 21st century. Urbanization is growing and it is predicted that two-thirds of the world's population will be living in cities by 2030. Africa has the highest urbanization rate in the world. For instance, by 2030, it is estimated that Africa's urban population will account for 54% of the continent's overall population, that is, a 39.1% increase compared to 2003¹⁶. UN-HABITAT estimates that about 72 % of Africa's urban population lives in informal settlements. Urbanization is associated with serious health challenges related to social determinants, environment, violence, road safety and unhealthy lifestyles. WHO covers most aspects of public health, many of which are relevant to urban environments.

(a) Healthy Cities

WHO is making efforts to ensure that the Healthy Cities approach is further developed and strengthened. Focus for the 2010-2011 period was capacity building, as attested through activities that were conducted in Namibia and Algeria. Hence, Namibia reviewed the Windhoek Municipal Health Plan and strengthened the Multisectoral Committee. Algeria developed household waste management integrated projects that are being implemented in two municipalities.

¹⁵ http://www.who.int/phe/health_topics/outdoorair/databases/en/index.html

¹⁶ Health aspect on urbanization in Africa, 2010

Recognizing the challenges of urbanization and health, WHO dedicated 2010 to urbanization and health by organizing interlinked and mutually reinforcing global events to highlight health risks in urban environments, as well as the opportunities and policies that can be used to improve health in urban areas. WHO was involved in all major activities, including:

- World Health Day 2010 that sought to draw attention on urbanization and health so as to raise awareness at the highest level ;
- the joint WHO/UN-HABITAT report that provided evidence-based information to help municipalities and health authorities reduce health inequities in their cities ;
- the Global Forum on Urbanization and Health that brought together mayors, municipalities and government representatives from various sectors for a declaration of action to reduce health inequities in cities, referred to as the “Kobe Call to Action”.

About 100 cities and towns in the African Region joined the 2010 World Health Day “1000 Cities 1000 lives” campaign. Events and activities focused on cleaning campaigns, open street days, sporting events, free medical screening and panel discussions. Countries like Namibia identified and recognized an urban Health Champion who continues to champion urban health issues in the country. In all countries, the event brought together national leaders and various international organizations around urban health matters to raise awareness on urban health challenges and the need for action . In most countries the event triggered advocacy on four key actions: urban design conducive to healthy behaviors and safety, improvement of the living environment in urban areas, urban governance and accessibility to services by all citizens. In some countries like Ethiopia, World Health Day is not limited to a single day,

but continues throughout the year; posters and billboards are erected in major cities and urbanization and health training workshops organized for health workers and authorities .

(b) Supporting the development of a policy framework on urbanization and Health

Government leaders, including ministers, mayors and urban health experts from 22 African countries met at the Global Forum on Urbanization and Health that was held in Kobe, Japan, in November 2010, to identify key areas of action for addressing urban health inequities. The Forum resulted in a statement by national and local leaders to address health and health equity in urban areas, known as the Kobe Call to Action.

As a follow-up to the said Call, and to sustain enthusiasm and identify priorities for Africa, WHO convened a meeting in Ethiopia in September 2011. The meeting was attended by national officials from the ministries of the environment, health and urban affairs of Angola , Cameroon, Ethiopia, Ghana , Malawi , Kenya , Namibia, Tanzania , Uganda and Zimbabwe. Delegates reviewed the relevance of the Call to the African context and discussed key implementation challenges, including the absence of a funding mechanism and guidance to implement the Call, limited means to integrate urban planning and lack of data on health determinants needed to inform policy and action. To address these challenges, delegates agreed to develop a strategic plan, mainstream urban health into development plans, improve networking and coordination and provide greater leadership and advocacy on key urban health issues. Stakeholders, WHO, Member States, local governments and NGOs undertook to implement these recommendations.

(c) Scaling-up of Urban HEART

The Urban Health Equity Assessment and Response Tool (Urban HEART) was developed by WHO to assist policy makers and programmers to assess and respond to health inequities in cities. This Tool helps identify health inequities by assessing health outcome indicators and health determinants and uses this evidence to guide development of appropriate action. In 2008/2009 the Tool was introduced in three countries: Cameroon, Kenya and Zambia. The response from these countries was positive. Hence, during the 2010-2011 period, the Tool was introduced in nine other countries: the Democratic Republic of Congo, Congo Republic, Ethiopia, Mali, Mozambique, Uganda and Tanzania.

In order to improve this Tool and advocate for wider use, WHO with support from the Kobe Centre, led the evaluation of the Tool in Nakuru, Kenya. The evaluation indicated that the implementation of the Tool was successful, thanks to full council support and wide acceptance from participants, skilled staff to oversee implementation and existing intersectoral collaboration with other development forums within the municipality. The implementation of this Tool influenced local government decisions to set up certain services to improve coverage of impoverished areas, for instance, street lighting and improvement of education and health facilities.

(d) Children's Environmental Health

Chemicals represent a major risk to children in households. One of the most persisting and recurrent chemical risks to children is ingestion of kerosene (paraffin). It remains a major cause of acute poisoning and life-threatening respiratory problem among children in many parts of Africa. Paraffin is very widely used and often stored in bottles or jars previously used for soft drinks or milk. This makes it especially attractive to children, whose natural exploratory behavior leads them to taste things they can reach in their home environment. Unsafe storage of common

chemicals in households, frequent use of domestic insecticides, poorly informed communities, inappropriate treatment procedures (at home and even in health care facilities) are among the principal childhood poisoning risk factors. Existing studies have addressed these issues, and concrete recommendations are available, but have not been implemented widely.

In 2010, WHO, together with the Ghana, Uganda and Zambia ministries of health, undertook efforts towards healthy home environments in which children are at less risk of poisonings by paraffin and other common household chemicals. This effort, which responded to the 6th priority action of the Libreville Declaration¹⁷, included establishing pilot surveillance for childhood poisonings in the 3 countries, undertaking public relations efforts focusing on media dissemination of messages on how to prevent child exposure to common household poisons, consultations with kerosene dealers as regards safer packaging, and educating health providers about the treatment of common childhood poisonings.

(i) Establishment of surveillance for childhood poisoning

For this project, three counties were selected to initiate surveillance for childhood poisonings. Surveillance was established in January 2011 in Uganda at the Mulago National Referral Hospital and in June 2011 in Zambia, at the Lusaka University Teaching Hospital. In Ghana, seven localities were selected for pilot surveillance for poisoning. A special childhood poisoning surveillance form was developed.

¹⁷ The 6th priority action is: “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”.

(ii) A national contest on the production of educational audio and visual materials by school children, with prizes for the best submissions, was widely disseminated.

In Uganda, a painting and poem writing contest on childhood poisoning was conducted at a public school in Kampala, and witnessed the participation of over 1000 pupils. The Ghana Health Service, in collaboration with the Ministry of Education, developed a contest for secondary school children to design posters on the prevention of kerosene poisoning. In Ghana, the contest required school children to produce posters and radio messages, for which prizes were awarded in October 2011.

(iii) Launching of community safety campaigns to prevent poisoning among children

In Uganda, a media survey was conducted among youths and video advertisements on childhood poisoning prevention were run on two major stations with over 2 million daily viewers. An article on childhood poisoning prevention was also published in a leading newspaper. In Ghana, the Ghana Health Service developed a flip chart on kerosene poisoning and used it to teach mothers and community health nurses in clinics located in Greater Accra. They also disseminated information on the existence of the Poisons Centre, which resulted in a substantial increase in calls to the Poisons Centre. The Ghana Health Service, under this project, worked with partners.

(iv) International meeting in South Africa

The International Congress of Pediatrics was held in Johannesburg in 2010. The meeting was attended by over 5000 health providers, many from African countries. A one-day workshop on Children's Environmental Health was organized on 4 August 2010 and was attended by about 100

pediatricians. The Paraffin Safety Association of Southern Africa made a special presentation on paraffin poisoning prevention to provide updated information for doctors and described methods of conducting surveillance for paraffin poisonings.

In addition, in conjunction with the implementation of a project on poisoning prevention, the WHO Children's Environmental Health Toolkit is being used to educate families on prevention of childhood poisoning. The Toolkit continues to be adapted to national contexts, for instance, in Kenya where by WHO and UNICEF are planning to implement the Toolkit nationwide.

WHO produced a document titled: How is children's health linked to the environment? Information and resources for action in Africa. This report was based on children's environmental health profiles from 16 countries and children's environmental health indicator reports from three countries. The document summarized the status of children's environmental health in the Region, described specific environmental health threats to children, including case studies, and proposed a strategy for ensuring a healthy environment for children and provided a list of tools and mechanisms available for reducing and preventing environmental threats to the health and safety of children. The document requested parents, teachers, communities, policy-makers, and all those concerned about the future generations to pool efforts in view of a healthier environment for African children.

(e) Healthy Schools

Within the context of Healthy Cities, the concept of Healthy Schools provides for practical intersectoral collaboration for the promotion of environmental health with high visibility and community support. It also offers the opportunity for children to learn about health issues affecting them and other children. Under this programme, WHO is supporting a number of activities that address children's health in schools.

In Ethiopia, for example, WHO and the World Food Programme are implementing a deworming programme in primary schools. WHO undertook an intestinal prevalence survey in the three largest administrative regions in order to determine the implementation of the deworming campaign using the WHO Global 20% cutoff for soil-transmitted helminthes. Based on the survey results, WHO developed guidelines, training and education materials for the implementation of the deworming campaign in primary schools. Hence, more than 100 000 school-age children received deworming treatment in 2010 and 2011. The theme of the campaign was: “Feed the Children, not the Worm”.

Other major projects were implemented in countries. In Mali, a strategic plan for high impact hygiene activities including water treatment, handwashing and excreta disposal was developed and implemented in schools, in collaboration with UNICEF, PSI and the Luxembourg Cooperation.

4.7. Occupational health

Through Resolution WHA 60/26: “Workers’ Health: Global Plan of Action” the World Health Assembly urged Member States to devise, in collaboration with workers, employers and their organizations, national policies and plans for implementation of the Global Plan of Action on Workers’ Health as appropriate, and to establish appropriate mechanisms and legal frameworks for their implementation, monitoring and evaluation. In the African Region 13 countries (Benin, Burkina Faso, Chad, Ethiopia, Ghana, Kenya, Mozambique, Mauritania, Senegal, and Swaziland) and 10 other countries (Benin, Guinea, Mauritania, Namibia, Niger, Senegal, Sierra Leone, South Africa, Swaziland, and Togo) have developed national plans and programmes, respectively, dealing specifically with the health of workers. WHO assisted Namibia for the implementation of its national occupational health policy and strengthened the capacities of the ministry of health to lead action on occupational health.

Moreover, in Ghana, WHO, in collaboration with the German International Cooperation Agency, the British Department for International Development and other partners developed healthy workplace initiatives. The project emphasized the responsibility of companies in protecting and promoting the health of workers. The WHO healthy workplace initiative is a comprehensive approach to dealing with health at workplaces by improving the physical and psychological working environment and strengthening personal health resources. The initiative also encourages businesses (enterprises) to act responsibly in creating healthier workplaces. WHO also sponsored a conference on occupational health in small and medium scale enterprises, organized by the International Commission on Occupational Health, in Accra, Ghana, in 2011. The conference discussed the ways of addressing occupational health problems in small enterprises and in the informal sector in Africa.

In 2010, WHO, in collaboration with ILO, and based on Work Improvement in Small Enterprises (WISE), developed a new tool for Work Improvement in the Health Sector known as Health WISE. This is an action-oriented and practical tool for introducing changes in the workplace through combined efforts from both management and employees, in order to further ensure the sustainability of the changes. This approach to improving working conditions in the health sector provides examples of smart, simple, and low-cost practices that can be applied in any workplace setting. In 2010 and 2011, the draft Health WISE tool was experimented in Tanzania and Senegal. WHO also provided technical assistance to Nigeria, Tanzania (Zanzibar) and Namibia for the implementation of national campaigns for immunizing healthcare workers against Hepatitis B.

Additional support for the implementation of workers' health actions in African countries was provided through the global network of WHO Collaborating Centres for Occupational Health. The WHO Collaborating Centre at the University of Abomey-Calavi, in Benin, organized several events aimed at building occupational health capacities in African countries, including the Occupational Health and Safety Committees Forum, the Regional Symposium on Recognition and Prevention of Occupational Diseases and training on occupational health in recycling works.

4.8. Radiation

(a) Ionizing radiation

The largest nuclear accident since Chernobyl occurred in March 2011, as a consequence of the earthquake and tsunami that devastated the eastern coast of Japan. This has brought the issue of nuclear energy at the forefront of technical and political discussions. While some European countries have decided to close their nuclear power plants in the course of the next decade, a number of African countries have declared interest in building their own nuclear plants.

Besides electricity generation, radiation sources are widely used in Africa in medicine, industry and education, and their use is expected to expand in the coming years.

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Through the WHO Global Initiative on Radiation Safety in Healthcare Settings that was established to mobilize the health sector towards safer and more effective use of radiation in medicine, WHO is collaborating with the African Society of Radiology for the development of referral guidelines for appropriate use of radiation imaging in resource-poor healthcare settings. An international consultancy on referral guidelines for appropriate use of radiation imaging was held from 1 to 3 March 2010 at WHO Headquarters in Geneva, with the active participation of members of the African Society of Radiology on the panel of experts.

To improve radiation safety in the various fields where radiation sources are used in Africa, the 3rd African International Radiation Protection Association Regional Congress (AFRIRPA 2010) was organized in cooperation with WHO and the International Atomic Energy Agency. The Congress, organized in Nairobi, Kenya, from 19 to 24 September 2010, provided a platform for sharing current developments and future trends in radiation protection and building radiation protection capacity in the Region.

(b) Non-ionizing radiation

Public concern about the health risks associated with mobile telephony prompted several countries in Africa to request technical advice from WHO on the development of electromagnetic fields (EMF) standards for the Region. In addition, WHO participated in several regional meetings on the health impacts of mobile telephony, including:

- from 26 to 27 July 2010, in Nairobi, Kenya: Workshop on the theme "Delivering Good Quality Telecommunication Service in a Safe Environment in Africa", under the auspices of the International Telecommunications Union; and
- from 25 to 26 July 2011, in Gaborone, Botswana: Workshop on the theme "Practical measurement of EMF exposure".

Section 5.

RESEARCH AND TRAINING

GOK/WHO/UNDP-GEF PROJECT ON HEALTH AND ADAPTATION TO CLIMATE CHANGE

In Kenya, temperatures and rainfall have been associated with the dynamics of malaria vector populations, thus, malaria propagation with high mortality and morbidity, especially in the western highlands. The pilot project started in October 2010 with support from the Global Environment Facility through UNDP and WHO to address malaria epidemics in the western highlands. WHO provided logistical support to the project including capacity building of staff. The implementation of the project was undertaken by the Ministry of Public Health and Sanitation, in collaboration with the Ministry of Environment and Mineral Resources. It is a four-year project (2010-2014) with a budget of US \$ 549 933.

The specific objectives of the project are to establish a malaria early warning and response system with timely information on likely occurrence of highland malaria epidemic, improve the capacities of health sector institutions to respond to climate-sensitive malaria risks based on early warning information, and set up and pilot disease preventive measures for high health risk areas due to climate change and variability.

The project compiled 10 years of baseline retrospective data (clinical and laboratory confirmed malaria) and climate data (temperatures and rainfall). Using this data, the project is developing simple algorithms for correlation of malaria data and meteorological data to be used by district level staff. As of present, the project is in the process of compiling prospective data that will include both climate and malaria data for a period of four years.

The project plans not only to finalize the development of a model that will predict malaria epidemics within a period of two months as shown in figure1, train district health officers on the use of the tool in order to promote the sustainability of the programme, but also to procure and install Automatic Weather Stations, including the necessary software.

Demonstrating cost effectiveness and sustainability of environmentally sound locally appropriate alternatives to DDT for malaria control in Africa:

With financial support from the Global Environmental Facility (GEF) and, in collaboration with UNEP and national malaria control programmes, WHO is implementing the above-mentioned project in two countries: Ethiopia and Madagascar. The 3-year project is presently in its 1st year of implementation. Till date, Ethiopia has completed baseline data collection. The baseline study included assessment of the status of vector susceptibility to insecticides and community survey. Outcomes of the survey are being analyzed. Madagascar completed planning and preparation for the launching of baseline data collection during the forthcoming malaria season (January-March 2011). The first project progress report was submitted to the donor agency (GEF).

Project on malaria decision analysis support tool (MDAST): Evaluation of health, social and environmental impacts and policy tradeoffs:

The project is being implemented with funds from GEF, in collaboration with the Duke University (United States) and the University of Pretoria (South Africa). The purpose of this 3-year project is to promote evidence-based multisectoral malaria control policy-making tool in Kenya, Tanzania and Uganda and to serve as pilot for other malaria-prone countries. The project uses a comprehensive framework to assess the full range of health, social, and environmental risks and benefits associated with alternative malaria control. At the end of its 2nd year the project has already reviewed available published and unpublished documents on malaria control policy development and achieved the following:

- malaria decision analysis support tool (MDAST) prototype finalized;
- MDAST developed and revised, based on feedback from stakeholders;
- MDAST user manual drafted;
- MDAST webinar established and tested;
- several stakeholder consultations and training workshops conducted in the 3 project countries;
- mid-term project implementation assessment conducted by external reviewer and recommendations made, for consideration in the last (3rd) year of project implementation.

Project on implications of insecticide resistance on malaria vector control

WHO received funds from the Bill and Melinda Gates Foundation to implement a project to assess the implications of insecticide resistance on malaria vector control. It is being implemented in five countries, namely: Benin, Cameroon and Kenya in AFR; Sudan in EMR and India in SEAR.

The project seeks to provide a clear understanding of resistance dynamics and impact on the effectiveness of core malaria vector control interventions that are indoor residual spraying (IRS) and long lasting insecticidal nets (LLIN), in view of better resistance management strategies.

The specific objectives of the project are to:

- determine the impact of indoor residual spraying (IRS) and long-lasting insecticidal nets (LLIN) on malaria disease burden, transmission and vectorial capacity in relation to the presence of insecticide resistant vectors;

- assess the insecticide resistance status and the underlying mechanisms in the main malaria vector species from the study areas and follow trends in resistance status and mechanisms;
- study the spread of insecticide resistance genes in relation to the intervention and assess the underlying general gene flow and monitor trends in vector population structure in relation to the intervention;
- assess the behavioural responses of vectors in relation to the intervention and study possible changes induced by resistance;
- build a repository of biological material collected during the project and make it accessible to the scientific community under clearly specified conditions
- compare two existing insecticide monitoring assays and improve the technical and operational aspects of procuring resistance test kits.

The project was formally launched in January 2011 and will be implemented over a 5-year period (2011- 2015) for a total amount of US\$ 13 839 336. Since the launching of the project, a series of entomological, epidemiological, demographic and economic assessments have been undertaken under operational conditions, in the context of national malaria control programmes in the three African countries.

Training and research in environmental and occupational health

The WHO Collaborating Centre for Research and Training in Occupational Health at the University of Michigan Fogarty International Centre supported international training and research in environmental and occupational health through a grant, namely: “Regional Southern African Programme in Environmental

and Occupational Health". The grant was renewed in 2010 with a five-year funding by the US Fogarty International Centre at the University of Michigan. The Millennium Promise grant on non-communicable chronic diseases, known as "Research Training on Chronic Lung Diseases in South Africa" was newly funded for five years and started on 1 September 2009. Both grants address capacity building within the SADC Region and are intended to be complementary and mutually reinforcing. The countries participating in the programmes are Mozambique, South Africa, Tanzania, Zambia and Zimbabwe. The WHO Collaborating Centre at the National Institute of Occupational Health of South Africa organized and facilitated a South Africa-Netherlands Research Programme on Alternatives in Development workshop on the theme "Surveillance, Management and Compensation for Silica-related Diseases among Migrant Workers in Southern Africa" so as to develop a proposal for research on migrant workers and their access to health services and compensation processes. The WHO Collaborating Centre at the Finnish Institute of Occupational Health prepared and disseminated six issues of the African Newsletter of Occupational Health and Safety, devoted to occupational health aspects of climate change, technology transfer, mining, injury and reporting systems, workplace risk assessment and healthcare workers.

5.1. Conclusion

This report (2010-2011) acknowledges achievements in addressing environmental determinants of health in Africa and, in particular, reduction of disease burden due to environmental risks in many sectors. In fact, since 2008, there has been substantial progress in the implementation of the Libreville Declaration. In addition, the Luanda Commitment has further reaffirmed the political commitment of African countries to address MDGs through joint actions in the health and environment sectors. The report shows that this effort is being achieved at country

level. During the past two years WHO has played a leading technical role in supporting a wide range of specific interventions in countries, from water and sanitation activities to radiation, despite limited human and financial resources. In such a context the Framework for Public Health Adaptation to Climate Change and its implementation plan is a huge opportunity to further strengthen the fresh impetus born of the Libreville Declaration.

5.2 Major publications

WHO and UNEP, 2011. Implementation of the Libreville Declaration on Health and Environment in Africa: Luanda Commitment. Brazzaville, United Nations Environment Programme and World Health Organization Regional Office for Africa, 2011.

WHO and UNEP, 2011. African Ministers of Health and Environment Joint Statement on Climate Change and Health. Brazzaville, United Nations Environment Programme and World Health Organization Regional Office for Africa, 2011.

WHO and UNEP, 2011. The Health and Environment Strategic Alliance for the Implementation of the Libreville Declaration. Brazzaville, United Nations Environment Programme and World Health Organization Regional Office for Africa, 2011.

WHO, 2011. Combined household water treatment and indoor air pollution projects in urban Mambanda, Cameroon and rural, Nyanza, Kenya. February, 2011. Geneva, Switzerland. http://www.who.int/household_water/resources/HWTSIndoorAirV3.pdf.

WHO, 2011. Evaluating household water treatment options: Health based targets and microbiological performance specifications. June 2011. Geneva, Switzerland. http://www.who.int/water_sanitation_health/publications/2011/household_water/en/index.html

WHO/UN Water, 2011. GLAAS 2010 Africa Highlights. UN-Water Global Analysis and Assessment of Sanitation and Drinking-water.

WHO, 2011. Information sheet for government and policy-makers on evaluation of household water treatment options. July 2011. Geneva, Switzerland. [http://www.who.int/household_water/resources/EvaluatingHWT_for Govt.pdf](http://www.who.int/household_water/resources/EvaluatingHWT_for_Govt.pdf)

WHO , 2011. How is children's health linked to the environment? Information and resources for action in Africa. Brazzaville, World Health Organization Regional Office for Africa, 2011. (in press).