

PUBLIC HEALTH AND ENVIRONMENT

in the African Region

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A BBREVIATIONS

AAC	Awareness Activate Change	JMP	Joint Monitoring Programme
AfWA	Africa Water Association	JTT	Joint Task Team
AMCEN	African Ministerial Conference on the Environment	LLINs	Long-Lasting Insecticide-Treated Nets
ANVR	African Network on Vector Resistance	LSS	Living Standards Survey
AFRIRPA	African International Radiation Protection Association Regional Congress	MDG	Millennium Development Goals
AMCOW	African Ministers' Council on Water	MDGAF	Millennium Development Goals Achievement Fund
AUC	African Union Commission	MTSP	Mid-term Strategic Plan
BCC	Behaviour Change Communication	MSF	Médecins Sans Frontières
CTT	Country Task Team	NGO	Nongovernmental Organization
CERF	Central Emergency Response Fund	NPJA	National Plans for Joint Action
CLTSH	Community Led Total Sanitation and Hygiene	NDPC	National Development and Planning Commission
COP	Conference of the Parties	NAPA	National Adaptation Programme of Action
CCAPH	Climate Change Adaptation of Public Health	NMCP	National Malaria Control Programme
COEHR	Centre for Occupational and Environmental Health Research	NWI	National WASH inventory
DDT	Dichlorodiphenyltrichloroethane	NTDs	Neglected Tropical Diseases
DFID	Department for International Development	NCCC	National Climate Change Committee
GAVI	Global Alliance for Vaccines and Immunization, also GAVI the Vaccine Alliance	OPEC	Organization of Petroleum Exporting Countries
GPIRM	Global Plan on Insecticide Resistance Management	ODF	Open Defecation Free
GLAAS	Global Analysis and Assessment of Sanitation	OWERs	Organization-wide Expected Results
GFCS	Global Framework of Climate Services	POPs	Persistent Organic Pollutants
GIZ	German Development Cooperation	PHE	Public Health and Environment
GEF	Global Environmental Facility	QSP	Quick Start Programme
HELDS	Health and Environment Linkages Data System	SANA	Situation Analysis and Need Assessments
HWTS	Household Water Treatment and Safe Storage	SAICM	Strategic Approach to International Chemicals Management
HESA	Health and Environment Strategic Alliance	SADC	Southern African Development Community
HDAMA	Health, Development and Anti Malaria Association	SSC	Secretariat of the Stockholm Convention
HCWM	Healthcare Waste Management	TWG	Technical Working Group
HfDW	Help for Drop of Water	USEPA	United States Environmental Protection Agency
IAEA	International Atomic Energy Agency	UNITAR	United Nations Institute for Training and Research
IAQ	Indoor Air Quality	UNICEF	United Nations Children's Fund
ICCM	International Conference on Chemical Management	UN	United Nations
IMCHE	Inter-Ministerial Conference on Health and Environment	UNEP	United Nations Environment Programme
IRS	Indoor Residual Spraying	UNFCCC	United Nations Framework Convention on Climate Change
IVM	Integrated Vector Management	VBD	Vector-borne Diseases
IRC	International Reference Centre	VCNA	Vector Control Needs Assessment
IEC	Information Education and Communication	VCDS	Vector Control Decision Support System
ILO	International Labour Organization	WSPs	Water Safety Plans
IWA	International Water Association	WHA	World Health Assembly
JICA	Japanese International Cooperation Agency	WMS	Welfare Monitoring Survey
		WISE	Work Improvement in Small Enterprises
		WASH	Water, Sanitation and Hygiene
		WSP	Water Safety Plans
		WHO	World Health Organization
		WSA	Water and Sanitation for Africa



EXECUTIVE SUMMARY

This report presents the work of WHO in managing environmental determinants of human health in the African Region over the period 2012-2013. It highlights WHO's progress in strengthening the policy framework and the strategic agenda during the biennium. This report is intended to present to governments, partners and the general public, WHO's progress and achievements in the area of health and environment.

In accordance with its mandate, WHO provided support to countries to plan and implement its policy framework and strategic agenda; the Framework for Public Health Adaptation to Climate Change; Integrated Vector Management Programme; Air Pollution; and African Programme to Reduce Chemical Risks to Humans and the Environment.

It is essential to note that technical support continued to be provided to countries for implementing specific interventions aimed at reducing environmental risks to health, as well as exposure to such risks. Interventions included vector control; access to safe drinking water and adequate sanitation; management of waste and chemicals; occupational health and children's environmental health.

In 2012-2013, countries continued to scale up vector control interventions in the context of IVM to achieve universal coverage for impact. Botswana, Sierra Leone, Tanzania, Uganda, and Zimbabwe updated their policy guidelines on the use of long-lasting insecticide-treated nets (LLINs) and transformed from targeted delivery to universal coverage, in line with WHO policy guidance. The shift in strategy has resulted in a significant increase in the LLIN coverage of the total population at risk of malaria in these countries.

The WHO/UNICEF Joint Monitoring Programme for Water Supply and Sanitation (JMP) is the official

UN mechanism to track progress on access to drinking water and sanitation in African countries. Data reconciliation and harmonization works were conducted as an important focus under the fourth JMP strategic objective of country outreach.

The 2012 UN-Water Global Analysis and Assessment of Sanitation (GLAAS) report was published and distributed at different forums and meetings, including the workshop on the 2013 GLAAS exercise in Burkina Faso. Furthermore, WHO in collaboration with Water and Sanitation for Africa (WSA) coordinated GLAAS 2013 exercises in 32 countries.¹

In regard to other partners, WHO supported World Vision Ethiopia on its mid-term review of its USAID-supported project on HIV/AIDS Care and Support Programme on integrating Water, Sanitation and Hygiene (WASH) with a focus on household water treatment and safe storage. WHO promoted consideration of the WHO Safe Drinking Water Framework in National Self-supply/Family Wellness by scaling up financial support provided by the Japanese International Cooperation Agency (JICA), UNICEF, IRC and other development partners.

It is essential for management of healthcare waste to be addressed from both public health and environmental points of view based on the Basel Convention. While WHO provided countries with technical and financial support, GAVI provided financial support to address immunization-related waste in Ethiopia, Guinea, Lesotho and Sierra Leone.

During the last few years, various international calls for action have highlighted the necessity of strategic interventions in the field of e-waste. Currently, there are a number of international initiatives that are addressing global e-waste management and trade concerns, as well as issues with environmental pollution due to e-waste. Together with its collaborating partners, WHO is working on identifying the main sources and potential health risks of e-waste exposure and defining successful interventions.

Between January 2012 and December 2013, WHO implemented a project to assess the feasibility of a subregional poisons centre in East Africa. This project

was funded under the Quick Start Programme (QSP) of the Strategic Approach to International Chemicals Management (SAICM), and covered sixteen countries.² WHO has continued to support countries in the region in managing large-scale chemical incidents.

In Nigeria, WHO participated in an international meeting on mass lead poisoning in Zamfara State, Nigeria. The meeting was held in Abuja from 9 to 10 May 2012 following a similar meeting in 2013. WHO launched the first International Lead Poisoning Prevention Week of Action that ran from 20 to 26 October 2013.

In addition, WHO conducted a systematic review of access to electricity by health facilities in 11 sub-Saharan countries. The purpose of a systematic review is to sum up the best available research on a specific question. On average, 26% of health facilities in the surveyed countries reported no access to electricity. Only 28% of healthcare facilities in the eight countries that provided data had reliable electricity supply. In nine of the 11 countries,³ an average of 7% of facilities relied solely on a generator. In healthcare facilities, access to electricity increased by 1.5% annually in Kenya between 2004 and 2010 and by 4% annually in Rwanda between 2001 and 2007.

In addition to this, WHO supported Ghana to embark on setting up national structures on employee well-being within the public sector through the newly



inaugurated "National Steering Committee on Employee Health and Wellbeing Programmes" and within the private sector through the "Ghana Business Coalition on Employee Well-being" (formerly Ghana Business Coalition against AIDS).

In the Republic of South Africa, WHO and its collaborating centre at the National Institute for Occupational Health carried out a field study on the content and delivery costs of essential primary healthcare interventions for workers. Also, the South African Department of Health together with WHO organized a side event at the 66th World Health Assembly to highlight the importance of addressing the health needs of workers, particularly the poor, working class and informal sector workers, under the policies on universal health coverage.

Despite the above achievements, effective implementation of the framework was hampered by some challenges. These include a perceived lack of evidence and communication about climate change and health; an array of institutional barriers; inadequate integrated approaches; a perceived lack of fundable proposals; inadequate technical capacity and national political commitment.

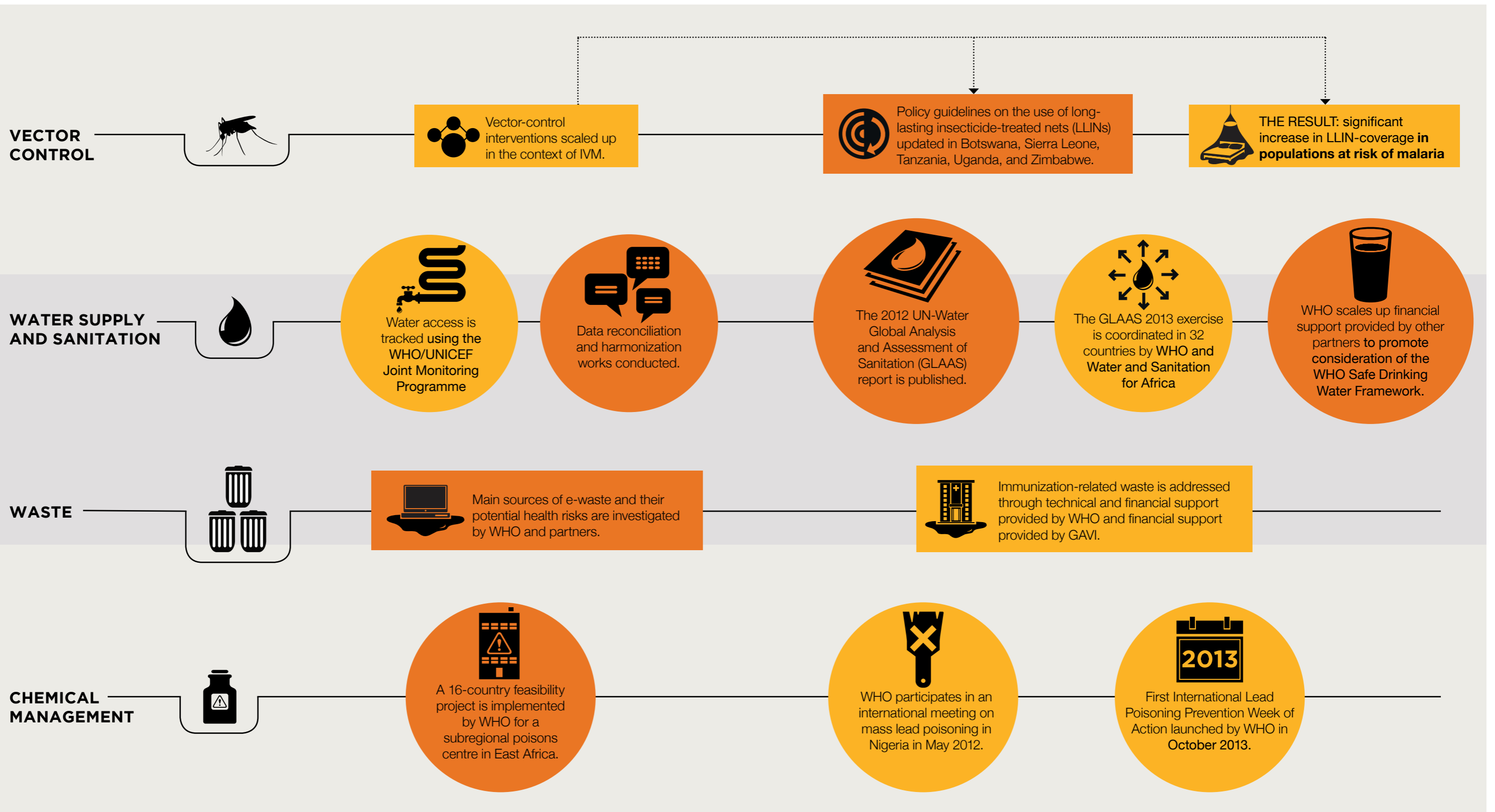
As challenges are highly interdependent, a holistic approach is needed to address them. Building a strategic alliance between health and environment is the way forward. In the coming biennium, efforts should focus on operationalizing Country Task Teams (CTTs). While WHO is going through a transformation to be better equipped to address the increasingly complex health challenges in the 21st century, the 12th General Programme of Work will provide the strategic overview for the Organization during the period spanning 2014-2019.

“AS CHALLENGES ARE HIGHLY INTERDEPENDENT, A HOLISTIC APPROACH IS NEEDED TO ADDRESS THEM. BUILDING A STRATEGIC ALLIANCE BETWEEN HEALTH AND ENVIRONMENT IS THE WAY FORWARD. IN THE COMING BIENNIUM, EFFORTS SHOULD FOCUS ON OPERATIONALIZING COUNTRY TASK TEAMS.”

E

EXECUTIVE SUMMARY

Actions and impacts in the period 2012 to 2013



ELECTRICITY IN HEALTH FACILITIES

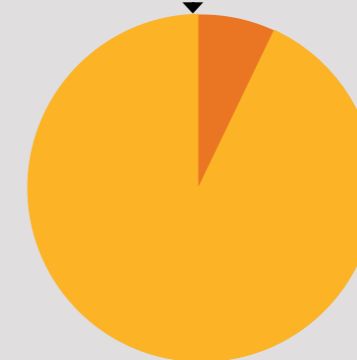
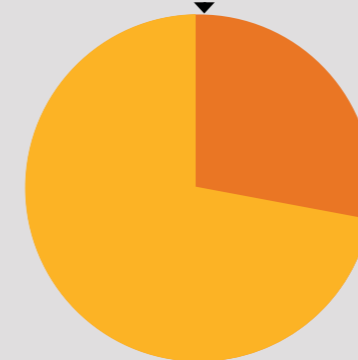
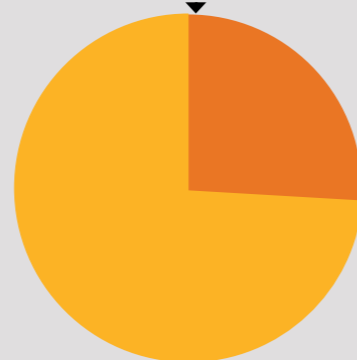


A systematic review of health facilities' access to electricity is conducted in 11 sub-Saharan African countries.

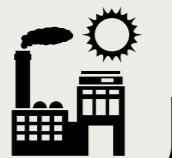
Access to electricity in healthcare facilities increased annually by...

- 1.5% in Kenya between 2004 and 2010
- 4% in Rwanda between 2001 and 2007

“ IMPLEMENTATION OF THE FRAMEWORK WAS HAMPERED BY CHALLENGES, INCLUDING A PERCEIVED LACK OF EVIDENCE AND COMMUNICATION ABOUT CLIMATE CHANGE AND HEALTH. ”



EMPLOYEE HEALTH AND WELLBEING



PUBLIC
Support provided by WHO for Ghana to begin setting up national structures on employee well-being within the public sector.

PRIVATE
Support provided by WHO for Ghana to begin setting up national structures on employee well-being within the private sector.

A field study is carried out in South Africa on the content and delivery costs of essential primary health care interventions for workers.

A side event is organized at the 66th World Health Assembly to highlight the importance of addressing workers' health needs.



INTRODUCTION



In the WHO African Region, health and environmental challenges remain; how to provide safe drinking water, sanitation and hygiene services; soil and air pollution; vector control; and management of chemicals and waste; food safety; children's environmental health; and health in the workplace. These challenges are exacerbated by the negative consequences of climate change, unplanned urbanization, rapid uncontrolled population growth and urban migration.

“ THIS REPORT PRESENTS THE WORK OF WHO IN MANAGING ENVIRONMENTAL DETERMINANTS OF HUMAN HEALTH IN THE AFRICAN REGION. ”

These factors increase pressure on already overburdened health systems, which function in the context of inadequate qualified human resources and a shortage of financial resources. Sub-Saharan Africa is the region that is most at risk from unsafe drinking water, inadequate sanitation, polluted indoor air and vector-borne diseases. WHO estimates that about a quarter of the global disease burden, a third of it in developing countries, could be reduced by implementing environmental health interventions and strategies.

The above health risks will be further worsened by climate change, which is considered to be the biggest threat to global health in the 21st century. In addition, Africa remains one of the most vulnerable regions in the world, suffering the negative effects of climate change while having the least adaptive capacity.⁵ In order to cope with the negative impact of climate change, a framework for public health adaptation to climate change was endorsed by ministers of health at the 61st session of the WHO Regional Committee for Africa through resolution AFR/RC61/R2.

To address the above issues and challenges, in 2008 African countries adopted the Libreville Declaration on Health and Environment in Africa, and the Luanda Commitment (26 November 2010) for its implementation. The Libreville Declaration on Health and Environment in Africa is a policy statement that provides an overarching, cohesive and integrated framework to coherently address health and environment linkages.

According to the WHO Burden of Disease Report (2009):

- **677,000** child deaths are attributable to unsafe water, sanitation and hygiene
- **500,000** child deaths due to indoor smoke in the Region
- **600,000** deaths from vector-borne diseases such as malaria (WHO 2013).⁴

This report, Public Health and Environment (PHE) 2012-13, presents the work of WHO in managing agenda as environmental determinants of human health in the African Region. It highlights progress by WHO in strengthening the policy framework and the strategic well as important outcomes realised from the support provided to WHO Member States by the three levels of the Organization (headquarters, regional and country offices) during the biennium.

S

SECTION 1

STRATEGIC OBJECTIVES AND ACHIEVEMENTS 2008-2013

This section addresses WHO's strategic objectives, in terms of expected results and key achievements during the period under review.





1.1 STRATEGIC OBJECTIVE: HEALTH AND ENVIRONMENT

One of the 13 WHO strategic objectives for the period 2008-2013 focuses on environmental determinants of health (strategic objective eight).⁶ This objective is “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”. In order to achieve this objective, WHO has defined six Organization-wide Expected Results (OWERs), as the contribution of the Secretariat. In the African Region these expected results are as follows:

WHO’s Six Organization-wide Expected Results

1 Evidence-based assessments made, and norms and guidance formulated and updated on major environmental hazards to health, which include poor air quality, chemical substances, electromagnetic fields, radon, poor quality drinking water, and waste-water reuse. In addition, technical support provided for implementing international environmental agreements and for monitoring progress towards achievement of the Millennium Development Goals.

2 Technical support and guidance provided to Member States for implementing priority programmes, such as water, sanitation and hygiene; chemicals management; air pollution; waste management and integrated vector management. This includes specific settings and areas with vulnerable population groups.

3 Technical support provided to countries to establish national health and environment strategic alliances, in order to develop or update their occupational and environmental health policies and regulations; and to 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).⁷

4 Guidance and tools provided to countries in order to support the health sector to influence policies in priority sectors.

Health impacts assessed; costs and benefits of

“WHO STRATEGIC OBJECTIVE 8: “TO PROMOTE A HEALTHIER ENVIRONMENT, INTENSIFY PRIMARY PREVENTION, AND INFLUENCE PUBLIC POLICIES IN ALL SECTORS...”

policy alternatives in those sectors determined; and investments in non-health sectors that improve health, the environment and safety selected.

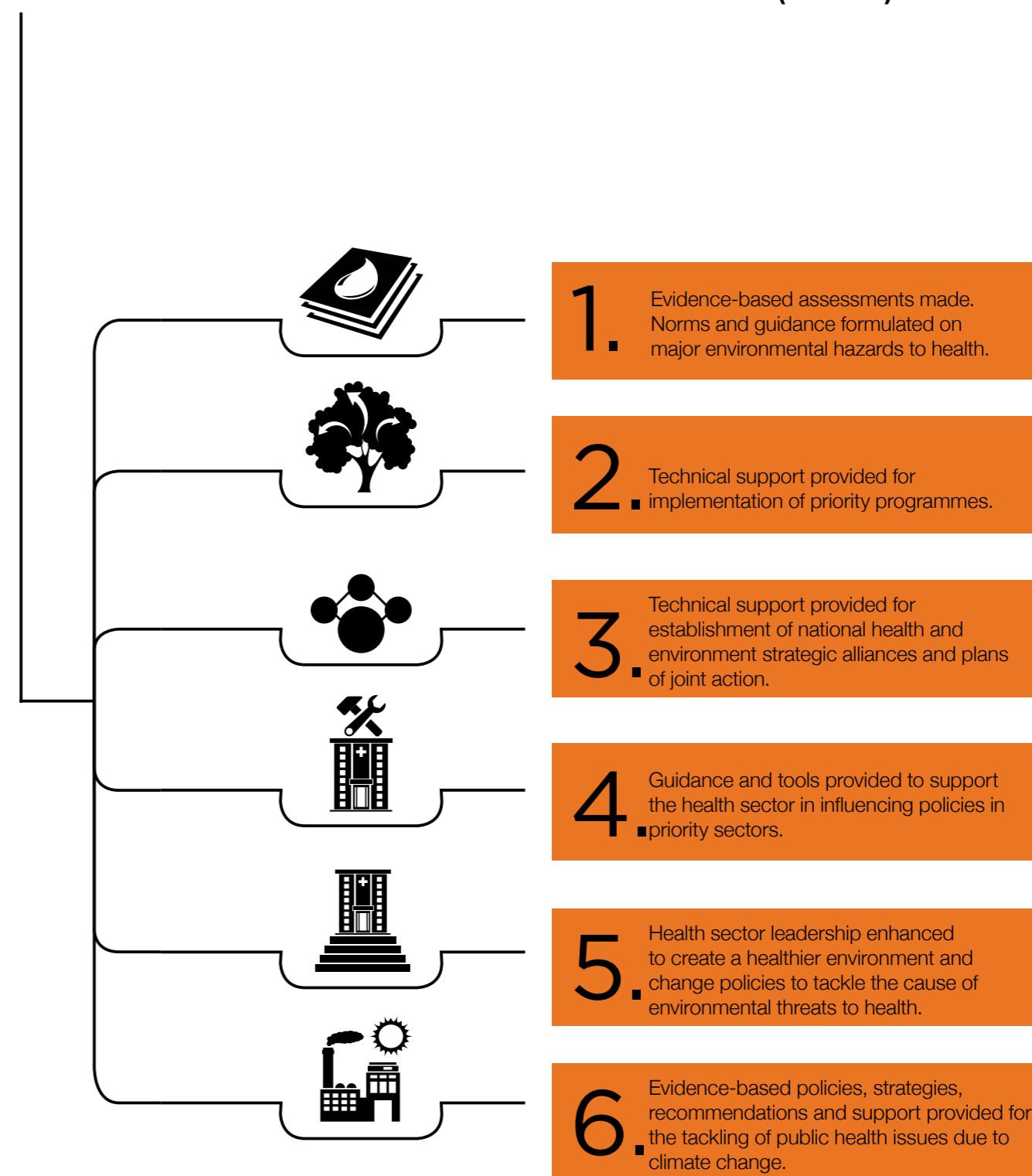
5 Health sector leadership enhanced for creating a healthier environment and changing policies in all sectors so as to tackle the root cause of environmental threats to health. This is achieved through means such as responding to emerging and re-emerging consequences of development on environmental health, climate change, and altered patterns of consumption and production and to the damaging effect of evolving technologies.

6 Evidence-based policies, strategies and recommendations developed, and technical support provided to Member States for identifying, preventing and tackling public health problems resulting from climate change.

The above expected results will contribute significantly to preventive interventions for the control, prevention and elimination of communicable and non-communicable diseases under strategic objective one (SO1); combating malaria, tuberculosis and HIV/AIDS under strategic objective two (SO2); addressing public health in emergencies, social determinants of health, health risk factors, food safety as well as strengthening health systems, under strategic objectives (SOs) 5, 6, 7, 9 and 10 respectively.

IN PICTURES

THE WHO’S 6 ORGANIZATION-WIDE EXPECTED RESULTS (OWERS)





1.2 MAIN ACHIEVEMENTS DURING 2008-2011

This section highlights the major achievements of WHO's work in the African Region during the last two bienniums: 2008-2009 and 2010-2011. The areas in which these achievements occurred include implementation of the Libreville Declaration on Health and Environment in Africa; climate change and health; integrated vector management; chemical management; healthcare waste management; water, sanitation and hygiene (WASH); air pollution; and health in the work place. These achievements underline WHO's support to its partner countries and the impact on the state of health and environment in Africa. WHO continued to work in the bienniums of the Medium-term Strategic Plan (MTSP) 2008-2013 to intensify the above achievements with specific focus on strengthening the policy framework and the strategic agenda, as well as providing support to Member States to implement health and environment interventions.

Implementation of Libreville Declaration on Health and Environment in Africa

The First Interministerial Conference for Health and Environment in Africa was jointly organized by WHO and United Nations Environment Programme (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.

The 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. Partners at this meeting made the "Windhoek Statement of Partners on the Implementation of the Libreville Declaration on Health and Environment in Africa" in which they made a commitment to provide support

for establishing the Health and Environment Strategic Alliance, and to promote the initiation of the Country Situation Analysis and Needs Assessments (SANA) for preparing National Plans of Joint Action (NPJA). Partners adopted a roadmap to support implementation of the Libreville Declaration, which describes key processes and milestones for implementing the Libreville Declaration at national and international levels.

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, which after field testing in Gabon and Kenya were finalized and disseminated to countries for use. In addition, the joint task team prepared guidelines for developing national plans of joint action, as well as a computer-based programme for managing a health and environment linkage information system.

Kenya and Gabon completed SANA in 2009. By the end of 2011, 13 countries⁸ had finalized SANA by endorsing their national reports, while five others⁹ had initiated the process and four¹⁰ had requested financial and technical support to undertake this activity.

“THE FIRST INTERMINISTERIAL CONFERENCE FOR HEALTH AND ENVIRONMENT IN AFRICA WAS ORGANIZED BY WHO AND UNEP IN AUGUST 2008. IT WAS ATTENDED BY MORE THAN 300 PARTICIPANTS FROM 52 AFRICAN COUNTRIES, INCLUDING 82 MINISTERS AND HEADS OF DELEGATION.”

Every country undertaking SANA established a Country Task Team (CTT) that is generally a national interdisciplinary and multi-institutional team (various national experts, institutions, NGOs, development partners and civil society). CTTs provide a platform for participants to engage in effective dialogue on scientific and technical issues, and also to reach consensus on the status and relative importance of the environment as well as ecosystems conservation and, based on SANA, to scale up for decision-makers, national health and environment priorities.

Efforts aimed at strengthening the policy framework were key to implementing the Libreville Declaration. In this respect, WHO and UNEP, in collaboration with the Government of Angola, organized 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 first Interministerial Conference held in Gabon.

A continental understanding of environmental determinants of human health and related national management systems has been developed by the WHO-UNEP Joint Task Team based on national SANA reports. A report¹¹ was produced and used as the main discussion paper at the second Interministerial Conference held in Angola. The report confirmed that a large proportion of the disease burden in Africa

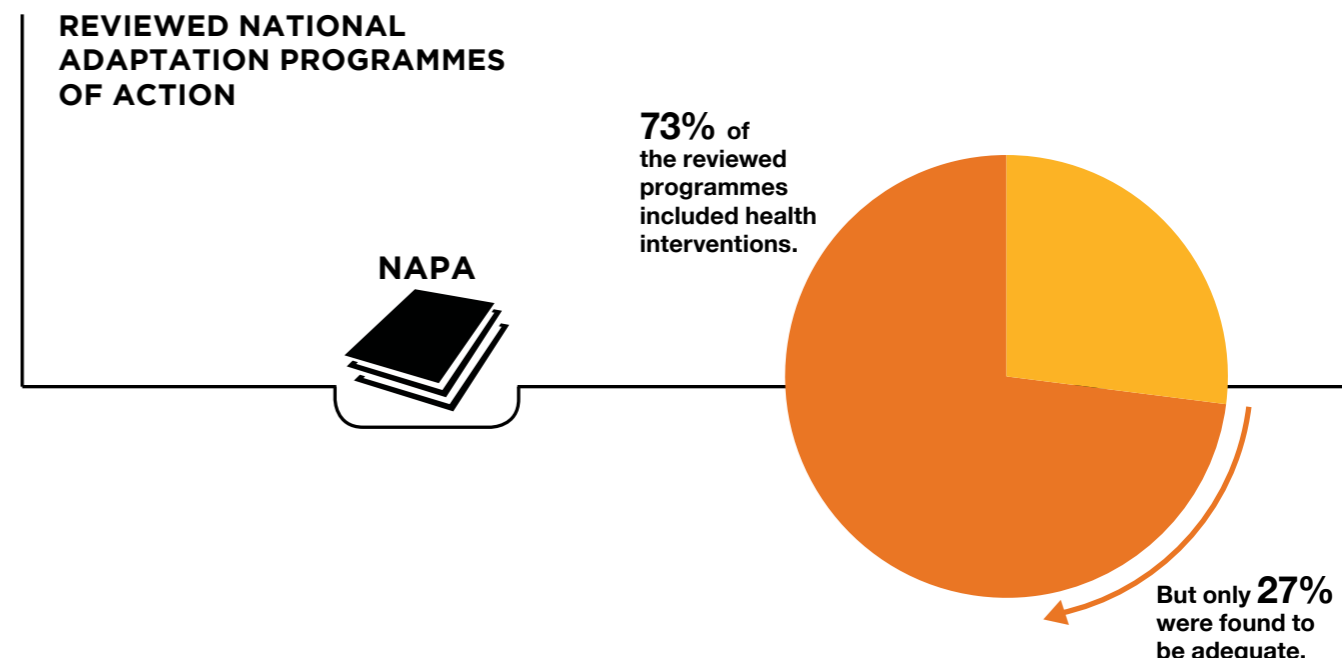
is linked to environmental factors. Risks associated with these determinants occur either naturally or as a consequence of human activity. In addition, they are exacerbated by continued human and natural degradation of Africa's principal ecosystems.

WHO prepared an assessment tool to enable countries to monitor and document the effective implementation of the Libreville Declaration on Health and Environment at country level. The tool (a Guide for Assessment of Health and Environment Intersectoral Action) has been developed for use by CTTs for use in situation analyses and needs assessments. It has also been used for piloting and documenting best practices in six selected countries,¹² some of which have demonstrated close collaboration and effective joint actions between the health and environment sectors, and other sectors.

Kenya and Gabon completed SANA in 2009. By the end of 2011, 13 countries had finalized SANA by endorsing their national reports, while five others had initiated the process and four had requested financial and technical support to undertake this activity.

Climate Change and Health

In 2010, WHO undertook a review of health considerations in the National Adaptation Programmes of Action (NAPA) of participating countries to assess the extent to which public health aspects were taken into consideration in countries' adaptation measures.





Overall, 73% (30 out of 41) of the reviewed NAPA included health interventions within adaptation needs and proposed actions, but only 27% (8 out of 30) of these interventions were found to be adequate.

It was concluded, apart from a few exceptions, that the current inclusion of public health interventions under NAPA was inadequate for ensuring public health protection against the negative effects of climate change.

WHO, in collaboration with the World Meteorological Organization, convened 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, held

in Gabon in 2008. In 2011, WHO prepared a framework for public health adaptation to climate change.¹³

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.

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.

Integrated Vector Management

Long-lasting insecticide 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 towards universal coverage of the two interventions.

By the end of 2011, 23 countries had adopted policies to provide long-lasting insecticide nets to all persons at risk (not only to vulnerable groups). Over 150 million LLINs were distributed in the Region in 2010-2011. The regional average percentage of children sleeping under LLINs increased from about 44% in 2009 to approximately 73% in 2010-2011, with technical support from WHO and other partners.

In 12 countries, it was estimated that 30-85% of the population at risk was protected using indoor residual spraying. About 25 sub-Saharan countries make use of both IRS and LLIN interventions, usually in different geographic areas, thus increasing vector control towards universal coverage. WHO facilitated malaria programme reviews in 19 countries¹⁴ and IRS-specific reviews in Botswana, Gambia and Nigeria. Country epidemiological and entomological data was used to stratify malaria situations to guide selection of appropriate vector control strategies for each spectrum.

Technical support continued to be provided to all malaria endemic countries for effective vector control in the context of integrated vector management. 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 technical consultation on malaria vector control, organized in Brazzaville in October 2011.

The second Atlas on Insecticide Resistance in Malaria Vectors in the African Region has been developed by the African Network on Vector Resistance to Insecticides and coordinated by WHO. Related data covers the period from 2004 to 2010, and information generated and presented in the atlas shows that, in the majority of surveyed localities in West, Central, and

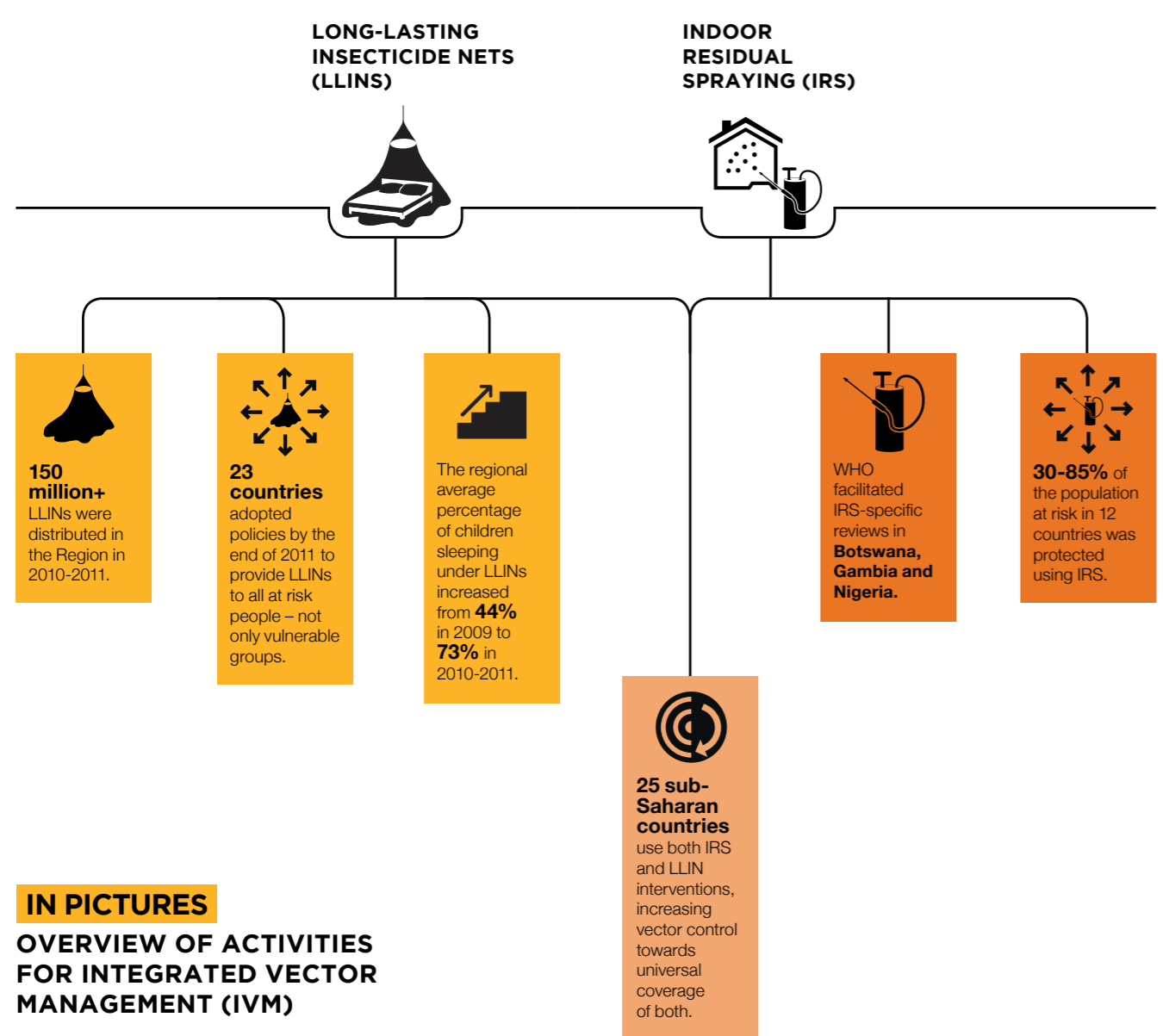
“ A LARGE PROPORTION OF THE DISEASE BURDEN IN AFRICA IS LINKED TO ENVIRONMENTAL FACTORS. RISKS ASSOCIATED OCCUR EITHER NATURALLY OR AS A CONSEQUENCE OF HUMAN ACTIVITY... THEY ARE ALSO EXACERBATED BY CONTINUED DEGRADATION OF AFRICA'S PRINCIPAL ECOSYSTEMS. ”

Eastern Africa, *An. gambiae* was found to be resistant to DDT and Pyrethroid, particularly in West Africa.

Technical support was provided to four countries (Botswana, Kenya, The Gambia, and Nigeria) to develop guidelines combining malaria control with that of neglected tropical diseases. In 2009, WHO initiated the development of a vector control decision support system (VCDS) to facilitate evidence-based decision-making at local level, where entomological capacities are often lacking. The tool was completed in 2011 and readied for field testing. VCDS is a user-friendly tool with functions and options enabling, among others, creation of a repository for entering data on geographical reconnaissance, vector control operations (IRS and LLIN distribution), and background information.

Managing Chemicals

WHO, UNEP, UNITAR, the SAICM Secretariat and the Stockholm Convention Secretariat pooled resources to implement initiatives and programmes for scaling up management of chemicals in the Region, and also with the International Labour Organization (ILO) implemented the Global Action Plan on Occupational Health and Safety. Countries were supported to develop policies relating to health and environment, in general, and workplaces in particular. They also



IN PICTURES OVERVIEW OF ACTIVITIES FOR INTEGRATED VECTOR MANAGEMENT (IVM)



received support for improving human resource capacities to address the growing waste-disposal challenges associated with electronics.

WHO pursued implementation of a project on reducing health risks through sound management of pesticides, which was part of a global project funded by the Gates Foundation. Through the project (2008-2012), six participating countries were supported to achieve a number of outcomes. The countries conducted situation analyses and needs assessments, and guided by the results, prepared national strategic plans for the safe management of pesticides. In total, 149 national staff members from various relevant institutions, particularly from the pesticide registration authority, were trained.

21 laboratories, that conduct pesticide quality control in the six countries, were assessed and recommendations provided to strengthen their capacities as part of implementing strategic plans. Guidelines for developing national policy on public health pesticides management for the WHO African Region were developed, published (in French and English) and disseminated to all Member States.

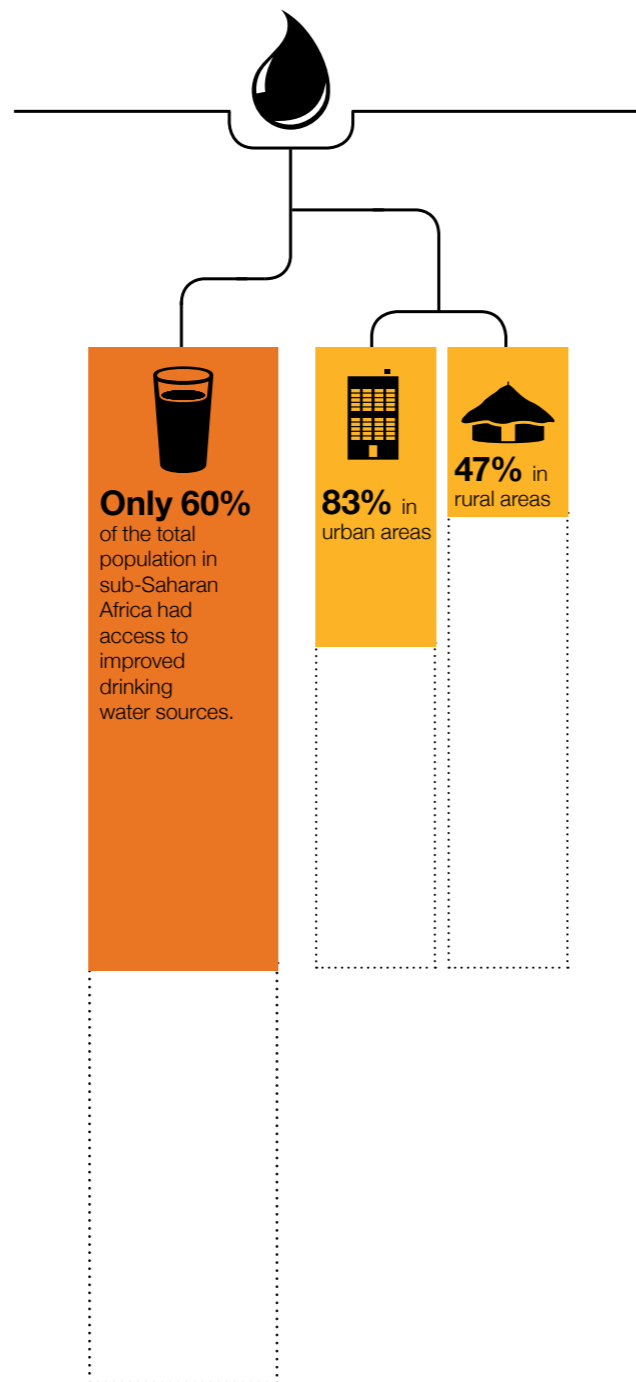
Healthcare Waste Management

Healthcare waste management received special attention through a GAVI-funded project implemented in 36 countries. In this regard, country capacities were strengthened and supported towards promoting tools, such as “Healthy Cities” a tool that facilitates cross-sector actions for health and environment in rapidly growing urban areas. This is a community service and policy research tool that provides access to a database of area resources and localized demographic and health data.

Water, Sanitation and Hygiene

The latest report (2013) of the WHO and UNICEF Joint Monitoring Programme on Access to Drinking Water and Sanitation 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 significant difference between urban areas (44%) and rural areas (24%). These figures are nearly identical to those of 2006, suggesting that more investment and resources are required for increasing access at a rate that exceeds population growth.

ACCESS TO IMPROVED DRINKING WATER IN SUB-SAHARAN



“ THE REPORT ALSO SHOWS THAT BARELY 31% OF THE POPULATION IN SUB-SAHARAN AFRICA USED IMPROVED SANITATION. ”

Efforts to improve drinking water quality involved the development of a manual and corresponding support for implementing water safety plans (WSP) and household water treatment and safe storage (HWTS). This was fostered through capacity building workshops in three African countries. Lastly, the delivery of HWTS, combined with indoor air pollution reduction mechanisms, was piloted in Kenya and Cameroon in a bid to integrate household environmental health interventions into ensuring a more effective improvement in public health.

WHO, in collaboration with UNICEF, conducted the following: monitoring access to water supply and sanitation; tracking water and sanitation sector inputs (Global Assessment of Access of Drinking Water and Sanitation - GLAAS; and support for drinking water quality monitoring); and support for safe drinking water through the International Network on Household Water Treatment and Safe Storage. 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 among relevant national agencies in charge of water and sanitation monitoring.

Efforts were also 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.

Air Pollution

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. WHO launched a new global database in September 2011, which covers the period from 2003 to 2010, with a significant proportion of 2008 to 2009 values, mainly PM10 (with some PM2.5) values.

Health in the Workplace

In 2010, WHO, in collaboration with ILO, and based on Work Improvement in Small Enterprises (WISE), developed a new tool for Health Improvement in Health Services 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 sustainability of the changes.

WHO is collaborating with the African Society of Radiology to develop referral guidelines for

appropriate use of radiation imaging in resource-poor healthcare settings. To improve radiation safety in the various fields in which radiation sources are used in Africa, the third 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 for building radiation protection capacity in the Region.



SECTION 2

THE WORK OF WHO DURING THE PERIOD 2012-2013

In line with the Mid-term Strategic Plan (MTSP) 2008-13, the work of WHO during 2012-2013 focused on setting norms and standards; demonstrating evidence of effective intersectoral collaboration between health, environment and other sectors in addressing the 10 priorities agreed upon in Luanda (Annex 1); portraying initial outcomes and co-benefits of intersectoral action on local communities in relation to the Millennium Development Goals (MDGs); and strengthening the Health and Environment Strategic Alliance. WHO provided support to countries to plan and implement strategies in order to achieve the above.





2.1 STRENGTHENING POLICY FRAMEWORK AND STRATEGIC AGENDA

WHO is the directing and coordinating authority for health within the United Nations system. It is responsible for providing leadership on global health matters; shaping the health research agenda; setting norms and standards; articulating evidence-based policy options; providing technical support to countries and monitoring and assessing health trends. As a result of this, a number of strategic documents and tools were developed by WHO and made available to the Region's Member States.

Libreville Declaration on Health and Environment in Africa

During the previous two biennia, WHO and its partners developed a number of tools and methodologies to guide countries towards implementing the Libreville Declaration on Health and Environment in Africa. One of these tools is the Health and Environment Linkages Data System (HELDS), which is an information management tool, designed to ensure a level of standardization in the collection and management of data that has been collected and collated in different countries during the development of situation analysis and needs assessment (SANA) reports. During the reporting period, HELDS was reconfigured and a review and amendment of the new version was undertaken by experts and end-users during a workshop held in WHO Regional Office for Africa in 2012.

In September 2013, WHO and selected experts met in Libreville to develop technical documents for the third Interministerial Conference on Health and Environment in Africa. During the session, four conference papers and six information documents were prepared. Key technical papers included:

- 1 The second synthesis report on evaluation of the Libreville Declaration implementation;
- 2 A strategic framework to scale up investment in priority health and environment interventions;
- 3 The Libreville Declaration as a Spearhead for Implementation of the Rio+20; and
- 4 An annotated outline for a strategic agenda that is expected to be the main outcome document of the third Inter-ministerial Conference on Health and Environment in Africa.

Framework for Public Health Adaptation to Climate Change

In the latter part of the WHO programme of work, there were major breakthroughs on climate change dialogue epitomized by practical resolutions at high-level regional and global talks. The first breakthrough was the World Health Assembly resolution WHA 61/19 of 2011 urging Member States to identify and address climate risks to health and to strengthen the capacity of health systems for monitoring and minimizing climate change impacts on public health.

The second breakthrough was the Climate Change Joint Statement on Health and Environment that ministers presented at the United Nations Framework

Convention on Climate Change (UNFCCC) COP 16 in Cancun, Mexico, and which emphasized that the impacts of climate change are likely to be more severe than previously anticipated, and may aggravate the effects of traditional emerging environmental risks on human health.

The Africa regional framework on climate change adaptation for the health sector was developed, based on UNFCCC COP 16 (Decision CP16). The framework was approved by the 61st WHO Regional Committee for Africa (resolution AFR/RC61/R2) held in August 2011 and adopted by the fourth special session of the Africa Ministerial Conference on Environment (Decision AMCEN/SS4/1) held in Bamako, Mali from 15 to 16 September 2011.

The framework identifies key components for inclusion in the Pan-African Programme for Public Health Adaptation to Climate Change with a view to leveraging and coordinating international-level technical and financial support to Member States in developing and implementing their national action plans for public health adaptation to climate change. It has seven

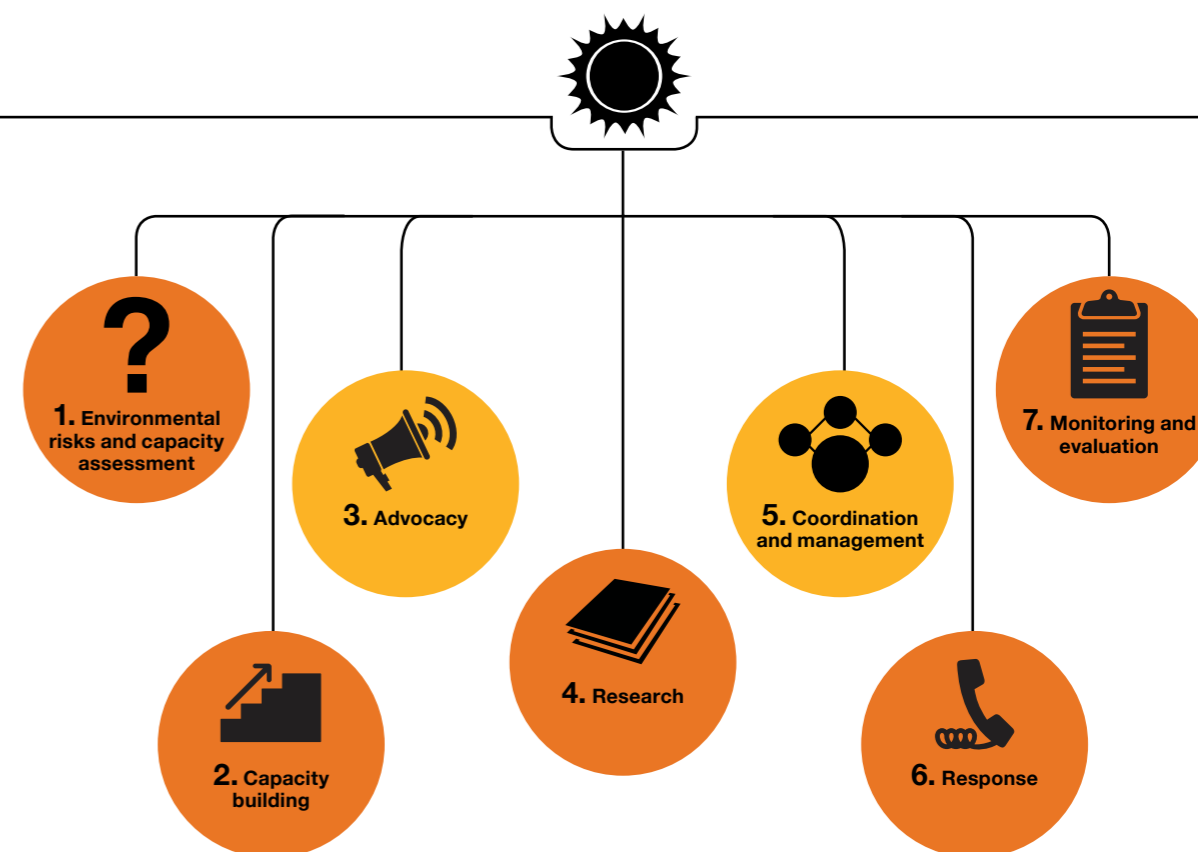
components namely:

- 1) Environmental risks and capacity assessment;
- 2) Capacity building;
- 3) Advocacy;
- 4) Research;
- 5) Coordination and management;
- 6) Response; and
- 7) Monitoring and evaluation.

The Secretariat has monitored and supported the implementation of resolution AFR/RC61/2 in the context of the Libreville Declaration on Health and Environment linkages in Africa that represents the umbrella framework under which African countries and their development partners address climate change.

In 2012, WHO and UNEP in collaboration with the African Development Bank, the World Meteorological Organization, and other partners prepared the framework for preparing country-specific Plans of Action to catalyse and coordinate public health adaptation at the national and international levels in Africa for the period 2012–2016. The plan was sent to the 47 Member States of the WHO African Region and

KEY COMPONENTS FOR INCLUSION IN THE PAN-AFRICAN PROGRAMME FOR PUBLIC HEALTH ADAPTATION TO CLIMATE CHANGE





a total of 34 countries (72.3%) provided their comments and inputs on the draft Plan of Action. In order to facilitate implementation of the plan at national level, WHO developed and disseminated for use by Member States, a technical guide on developing the health component of national adaptation plans (HNAP).

In 2013, the International Consortium for Climate and Health in Africa (Clim-Health Africa) was established by WHO Regional Office for Africa as a WHO informal network of institutions to support public health adaptation to climate change in Africa. Clim-Health Africa is a multistakeholder initiative that was agreed upon by 14 organizations to support implementation of the Libreville Declaration on Health and Environment in Africa, the Luanda Commitment, the Framework and Plan of Action for Public Health Adaptation to Climate Change in the African Region. It also contributes to the implementation of the Global Framework for Climate Services (GFCS), the International Health Regulations and the Climate for Development in Africa Programme (ClimDev-Africa).

Integrated Vector Management (IVM)

WHO has developed a number of regional and global documents that strengthen the policy framework and move forward the strategic agenda for integrated vector management (IVM). A standardized protocol for testing malaria vector susceptibility to insecticides in the African Region was produced. In addition, the Global Plan on Insecticide Resistance Management (GPIRM) and the Roadmap to Support the Implementation of the Plan in the WHO African Region in 2013-2014 were produced.

The roadmap aims to support countries to develop and implement insecticide resistance management strategies in line with the GPIRM. The support includes: updating the current data on vector resistance to insecticide in the African Region in order to guide WHO's support in resistance management issues; establishing and strengthening capacity for national databases on insecticide resistance for informed policy decisions; and facilitating and sharing insecticide resistance data for regional and subregional policy and strategy coordination on managing resistance.

An operational manual on indoor residual spraying (IRS), as well as on malaria transmission control and elimination was produced in April 2013. The following documents were also reviewed, finalized and published:

“ THE LUANDA COMMITMENT IDENTIFIED CHEMICAL MANAGEMENT AS ONE OF THE TOP CONTINENTAL HEALTH AND ENVIRONMENT PRIORITIES TO BE ADDRESSED IN ORDER TO ACCELERATE THE IMPLEMENTATION OF THE LIBREVILLE DECLARATION IN AFRICA. ”

- (a) Capacity building in entomology and vector control;
- (b) Interim technical guidance on how to estimate functional survival of long-lasting insecticidal nets from field data;
- (c) Methods of maintaining coverage with long-lasting insecticidal nets (LLINs).

In support of the control and elimination of NTDs, WHO also developed a document on “Lymphatic filariasis: Practical entomology - A Handbook for National Elimination Programmes.”

In order to address the gap in the availability of comprehensive policy in many countries, a guideline for the development of national policy on sound management of public health pesticides was published in English and French and disseminated to all Member States in the region. The guideline was rolled out in eight countries,¹⁵ which revised and developed national policies on sound management of pesticides, with technical and financial support from WHO.

Air Pollution

The WHO Indoor Air Quality (IAQ) guidelines for household fuel combustion have been developed and are awaiting approval from the WHO Guidelines Review Committee (GRC). WHO is actively engaged in Rural Energy Access using a Nexus Approach to Sustainable Development and Poverty Eradication, in collaboration with United Nations Department of Economic and Social Affairs (UN-DESA); Sustainable Energy for All

(SE4ALL); and UN-Energy to strengthen capacities on policy, technical and entrepreneurial approaches to rural energy access for eradicating poverty. Through the synergies between energy and other developmental factors including health, education, economic growth, gender, water and food security, WHO is promoting the critical need for energy for the health sector. Furthermore, WHO is putting emphasis on public health concerns to be addressed in any project or programme relating to energy, such as scale-up of clean cook stoves and renewable energy home systems; and also supporting the Rio+20 follow-up processes and the post-2015 development agenda.

WHO and UNICEF have developed a toolkit for monitoring and evaluating household water treatment and safe storage programmes. Monitoring and evaluation of household water treatment and safe storage programmes includes process monitoring to assess programme implementation; quantitative analysis through surveys; direct observation and water quality monitoring. A set of 20 indicators is recommended. These indicators build upon previous efforts among HWTS stakeholders and are grouped according to the following themes: reported and observed use; correct, consistent use and storage; knowledge and behaviour; other environmental health interventions; and water quality.

African Programme to Reduce Chemical Risks to Humans and the Environment

Chemicals are increasingly used in a number of economic sectors including health, agriculture, infrastructure, mining, education, research and industrial processes. Potentially hazardous chemicals and their categories whose use is widespread in Africa are; agrochemicals, mercury, and persistent organic pollutants (POPs) such as DDT. The Luanda Commitment therefore identified chemical management as one of the top continental health and environment priorities to be addressed to accelerate the implementation of the Libreville Declaration on Health and Environment in Africa.

In this regard, the WHO and UNEP Joint Task Team (JTT) for implementing the Libreville Declaration has developed a framework to reduce chemical risks to human health and the environment in Africa. This framework was endorsed by the African Ministerial Conference on the Environment (AMCEN/14/REF/4). It centres on a set of specific interventions including; production of national chemical management profiles;

integrated health and environment; comprehensive assessment of chemical risks and of required national core capacities; and development of coherent legal and institutional infrastructure, including enforcement of strategies for sound management of chemicals.





2.2 COUNTRY SUPPORT IN KEY TECHNICAL AREAS

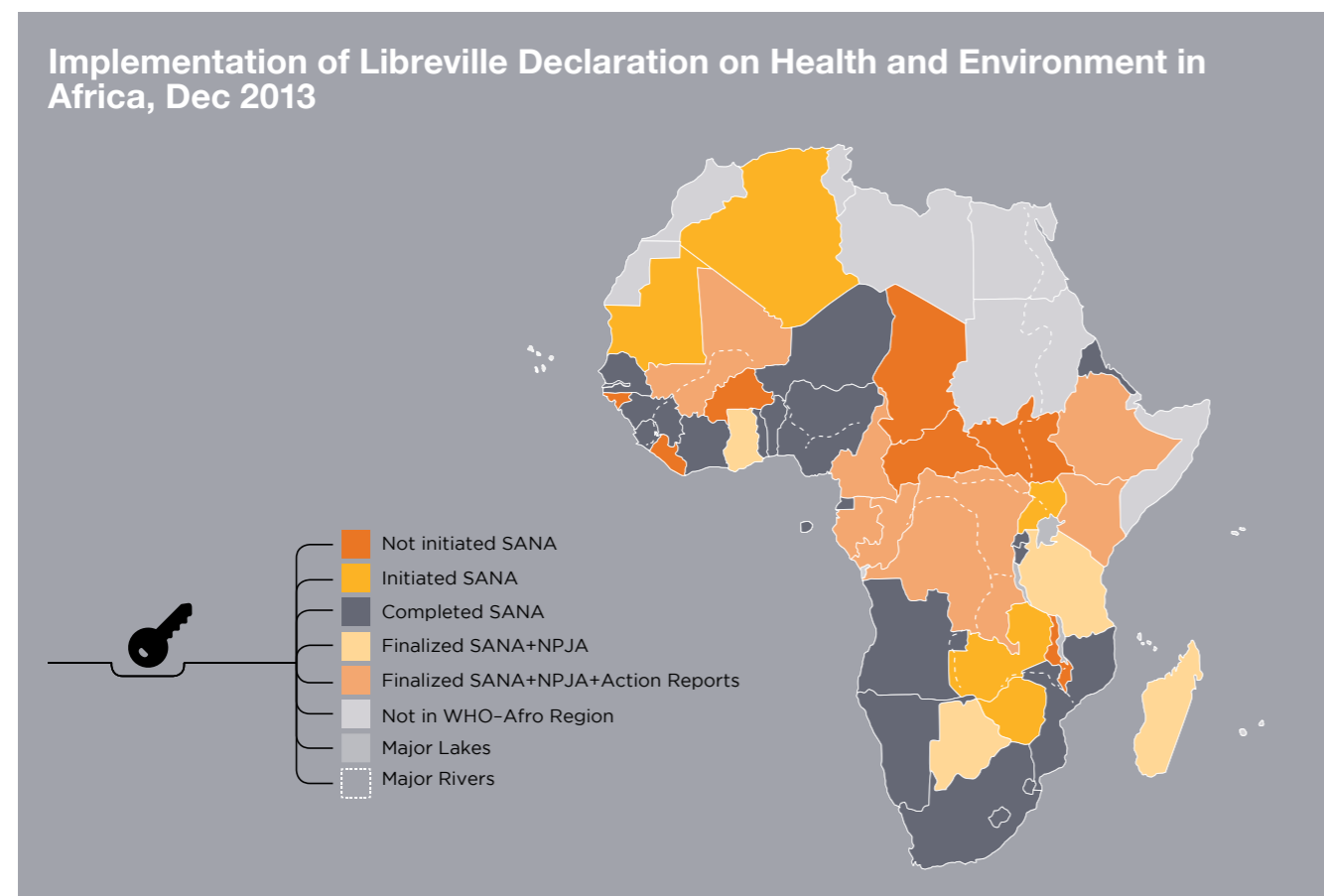
WHO has contributed to tangible and adaptable achievements at country level in:

- 1 Heightening advocacy on health and environment;
- 2 Increasing resources to address issues on health and environment linkages;
- 3 Strengthening intersectoral collaboration between health and environment sectors;
- 4 Strengthening country systems for the management of health and environment priority issues;
- 5 Enhancing implementation of health and environment conventions and
- 6 Integrating environment and health surveillance.

Progress in Implementing Libreville Declaration on Health and Environment Linkages in Africa

Implementation of the Libreville Declaration has three

main components: situation analysis and needs assessment (SANA); development of national plans of joint action (NPJAs) and their implementation; as well as monitoring and evaluation.



Scaling up the SANA Process

The Libreville Declaration on Health and Environment in Africa is evolving as a successful country-driven initiative. To date, WHO has supported a total of 34 countries to establish their multisectoral Country Task Teams (CTTs) and develop SANAs. Seventeen countries have developed NPJAs for implementation of the Libreville Declaration, and seven countries have developed multisectoral projects.

The SANA exercise has enabled the development of national capacities for policy reviews within the health and environment sectors. In countries undertaking SANA, national experts have been able to identify policy gaps and contradictions and propose the necessary alignments in these sectors.

The Country Task Teams have provided opportunities for experts with different perspectives to engage effectively in technical and scientific dialogue, and to reach consensus on the status and relative importance of environmental risk factors that affect health development, as well as on ecosystem preservation. As a result of implementation of SANAs, and owing to this dialogue, it has been easier for decision makers from the various sectors concerned to agree on national and continental priorities for health and environment.

From Declaration to Action: Evaluation of the Libreville Declaration Implementation

WHO commissioned a set of four complementary evaluations to assess achievements at national and regional levels, since the adoption of the Libreville Declaration in 2008. Key achievements to date include:

- 1 **Country self-evaluation** of efforts at implementing the Declaration;
- 2 **An in-depth assessment** of intersectoral projects and programmes being implemented in selected countries;
- 3 **An external evaluation** conducted by an independent consultant;
- 4 **An internal evaluation** aiming to appraise the contribution of the WHO and UNEP Joint Task Team (JTT), established in 2009 as a secretariat for the Health and Environment Strategic Alliance (HESA).

This third report is based on outcomes of the above assessments, and highlights the extent to which the Libreville Declaration and Luanda Commitment have catalysed the envisaged policy, institutional and investment changes in the area of health and environment in Africa. It emphasizes the

level of implementation of actions included in the Libreville Declaration and the Luanda Commitment, challenges and opportunities pertaining to implementation of the Declaration, and proposes recommendations to address issues and challenges identified in the evaluation.

The SANA process has revealed that priority intersectoral actions have been implemented in eight countries towards achievement of the MDGs. These programmes focused on priority areas such as management of risks relating to climate variability and change including:

- (a) Rise in sea level particularly affecting Small Island Developing States;
- (b) Provision of sanitation, hygiene services and safe drinking water; and
- (c) Environmental Impact Assessment.

Comprehensive assessment of intersectoral actions conducted in six countries revealed that countries had taken further steps to fast-track impacts at community level. Six countries were supported to undertake intersectoral action assessment namely, Ethiopia, Gabon, Kenya, Mali, Sierra Leone, and the Republic of Congo.

The self-assessment revealed that 26 countries out of 31 have established strategic alliances between health and environment sectors, as recommended by the Libreville Declaration. These alliances have been established on existing sectoral committees at country level. However, some countries have not established such formal intersectoral collaboration. These countries have initiated or completed their SANA through existing sectoral committees, and or through several programmes or projects in progress dealing with health-environment linkage issues. These structures constitute opportunities for building a strategic alliance in these countries. It was also noted that in some countries, the mission of Country Task Teams was limited to achieving SANA.

In nine countries, existing institutions have been maintained and strengthened with new staff, working equipment and facilities. These include well-established institutional linkages from policy to implementation levels, and strengthening coordination of health and environment sectors for proper implementation of health and environment activities. Efforts have been made towards building human capacity for health and environment intersectoral activities, and drawing up



budgets based on health and environment priorities. In regard to human resource, the main objectives are building capacity in human resource and development.

In spite of these leadership and coordination roles, including the guidance provided to countries by the JTT, a key issue that remains is the slow pace in implementing the Declaration at country level. Out of the 47 Member States, 34 have completed their SANA, and 17 countries have completed their NPJAs. The number of countries that have completed SANAs and prepared their NPJAs remains below the expected target. The Health and Environment Strategic Alliance (HESA) was able to hold only two meetings out of the expected four partner meetings over a four-year period. The Inter-Ministerial Conference on Health and Environment (IMCHE) was institutionalized with the aim of being held every two years, but to date only two conferences have been held.

Assessment of Health and Environment Intersectoral Action at Country Level

As the Libreville Declaration gathered momentum at national and international levels, a need arose to document effective intersectoral actions addressing health and environment interlinkage issues. WHO and UNEP supported eight countries - Cameroon, Ethiopia, Gabon, Kenya, Mali, Sierra Leone, Guinea, and Congo - to undertake intersectoral action assessments. The Country Task Team (CTT) assessed 18 selected intersectoral programmes or projects. The purpose of the exercise was to document the outcomes or impacts of health and environment intersectoral action in African countries.

“LARGE-SCALE PILOT PROJECTS ON HEALTH ADAPTATION TO CLIMATE CHANGE ARE BEING IMPLEMENTED IN THE SECTORS OF MALNUTRITION, DIARRHOEAL DISEASES AND VECTOR-BORNE DISEASES.”

Assessment of the 18 projects and programmes revealed the persistent lack at national level of institutional frameworks and national governance strategies to support multisectoral concerted actions, which are pivotal in effectively addressing challenges relating to specific issues such as water, sanitation, climate change chemicals and wastes. In this context, the assessment revealed the effective value and great potential of the Libreville Declaration in generating intersectoral collaboration between health and environment sectors that have direct positive impacts on the environment and on the health of affected communities and populations, and which contribute to achieving strategic objectives defined in national development plans and in the MDGs in general.

Nevertheless, the assessment also revealed that much more needs to be done particularly in terms of the institutionalization of HESA at the national level, and in terms of sensitization, information, communication and education of all actors at all levels to support intersectoral cooperation. Data, information, impacts and results already generated or expected from these projects and programmes should provide convincing evidence and arguments for decision makers and partners to provide more support.

Climate Change and Health Adaptation

WHO, in collaboration with the United Nations Institute for Training and Research (UNITAR), and with the technical and financial support of German Development Cooperation (GIZ), trained health representatives from ten countries¹⁶ in Climate Change Diplomacy and Health. This initiative aims to promote appropriate consideration of health within the international climate change negotiations, and make sure that health is better reflected as a priority area in the climate change institutions and programme in the 19th conference of the parties (COP19) and in UNFCCC negotiation sessions. As a result, for the first time, ten African countries had representatives in their national delegations to the UNFCCC COP.

WHO and Member States, in collaboration with their partners, are working to improve how health is integrated into future climate change planning, and to support concrete interventions to protect human health and well-being at national and regional levels. The African regional framework on climate change adaptation for the health sector is the basis for developing country-specific country plans of action whose main objective is to minimize the adverse public

health effects of climate change in Africa.

To date, 42 out of the 47 countries of the African Region (89.4%) have developed a National Plan for Public Health Adaptation to Climate Change, while only five (Tanzania, DRC, Rwanda, Algeria and South Sudan) are yet to develop their five-year plan of action for climate change and health adaptation.

In countries, large-scale pilot projects on health adaptation to climate change are being implemented in the sectors of malnutrition, diarrhoeal diseases and vector-borne diseases in Ethiopia, Malawi and the United Republic of Tanzania. These are being implemented with assistance from the Governments of Germany and Norway, as well as the Global Environment Facility (GEF) and the Millennium Development Goals Achievement Fund (MDGAF) and from the Department for International Development (DFID).

As part of resource mobilization, the current focus is to have the plans disseminated among national health partners with the aim of:

- (a) Identifying low-hanging fruits (activities) that can be incorporated in currently running programmes;
- (b) Identifying competitive advantages within health partner institutions for lead implementation and quality-control role allocation;
- (c) Building consensus on the coordination, monitoring and evaluation of various components of the plan.

As a key milestone, Kenya has agreed to have direct financing of its plan by the National Treasury to the Ministry of Health and Ministry of Environment by allowing a specific vote-head item created in their annual financial blueprints.

For Seychelles, a high-level awareness forum was held and partners' roles identified for implementation of the plan.

For all other countries (except the five who missed the sensitization sessions) finalization and dissemination of their five-year plans of action for Public Health Adaptation to Climate Change is on good course, and follow-up actions will be taken in the next WHO plan of work.

With respect to World Health Assembly resolution WHA 61/19, WHO received funds under the Global Environment Facility to pilot climate change adaptation

in seven countries globally, including Kenya in the African Region. The project is coordinated by WHO and implemented by ministries of health, with the following objectives:

- (a) Identify and relay climate-sensitive risk factors to human health in a timely manner;
- (b) Ensure capacity building of the health sector response to identified risk factors;
- (c) Implement national response plans in areas of heightened risks.





In Kenya, the focus is on prevention of malaria epidemics in the Eastern highlands of the Great Rift valley. The following have been achieved:

- 1** Climate-sensitive risk factors for malaria epidemics in the Eastern highlands of the Great Rift Valley identified;
- 2** A three-month advance National Malaria Epidemic Prediction model and decision support tool developed and launched;
- 3** National resource capacity on climate and malaria data management strengthened;
- 4** Four participating district malaria coordinators; four district health records and information officers; four meteorological station managers and two national-level focal points trained on e-portal data entry, manipulation and decision-making;
- 5** Four participating district referral facilities and four control health facilities equipped with computer and printers for improved data management;
- 6** Two automatic weather stations were purchased and installed in areas of heightened risks for improved capture and relay of climate data network.

Ghana is also implementing a related project on Climate Change Adaptation to Health, dubbed "Integrating Climate Change in Management of Priority Health Risks in Ghana". The main objective of the project is to identify, implement, monitor and

evaluate adaptations to reduce current and potential future burdens of malaria, diarrhoeal diseases, and meningococcal meningitis in Ghana.

To manage the Ghana climate change and health project, a national climate change and health interministerial committee was established, with key representatives from the following relevant institutions: Programmes in the Ministry of Health; Ghana Health Service; WHO country office; Ministry of Environment Science and Technology; the National Climate Change Committee; the National Development and Planning Commission; and others. The committee oversees development of cost-effective and efficient climate change and health-related action plans to ensure that climate change risks are integrated into public health and health-care planning and delivery.

With the support of WHO, Ethiopia and Tanzania developed plans and secured \$1.5 million funding each from DFID for climate resilient WASH projects for the period 2013-2016. The project outputs are:

- (a) Climate-resilient and health-promoting water and sanitation policies defined and implemented at national level;
- (b) Climate-resilient Water Safety Plans (WSPs) designed and implemented;
- (c) Field evidence of effectiveness of household-level WASH interventions to improve climate resilience.

In addition, WHO supported Ethiopia to document lessons from the implementation of Climate and Health Projects in six sites in the country that are covered by the Health, Development and Anti-malaria Association (HDAMA). The aim of the documentation was to identify strengths, weaknesses, challenges and opportunities for institutionalizing climate and health-related risks and integrating them into the health system.

In Guinea, the national action plan for adaptation to climate change for the health sector has been adopted and a draft document produced. Government is planning to pay 10% of the project sum (\$9,000,000).

In Lesotho, the country plan for health adaptation to climate change, based on the regional plan of health sector adaptation to climate change, has been developed and submitted for adoption at national level. The Country Task Team continued to be active in the implementation of activities under the Libreville Declaration through coordination efforts by the two national coordinators (Health and Environment) with back-up from the WHO country office.

Integrated Vector Management

WHO support to its partner countries focused on developing or updating national policies, strategies and guidelines for malaria vector control and elimination; strengthening technical capacity for scaling up vector control interventions; planning, implementing, monitoring and evaluating indoor residual spraying (IRS) and long-lasting insecticide-treated nets (LLINs) campaigns.

Scale-up of Integrated Vector Management Interventions

In 2012-2013 countries continued to scale up vector control interventions in the context of IVM to achieve universal coverage for impact. Botswana, Sierra Leone, Tanzania, Uganda and Zimbabwe updated their policy guidelines on the use of long-lasting insecticide-treated nets (LLINs) and transformed from targeted delivery to universal coverage, in line with WHO policy guidance. The shift in strategy has resulted in a significant increase in LLIN coverage of the total population at risk of malaria in these countries.

“BOTSWANA, SIERRA LEONE, TANZANIA, UGANDA AND ZIMBABWE UPDATED THEIR POLICY GUIDELINES ON THE USE OF LONG-LASTING INSECTICIDE-TREATED NETS AND TRANSFORMED FROM TARGETED DELIVERY TO UNIVERSAL COVERAGE, IN LINE WITH WHO POLICY GUIDANCE.”





1 Sierra Leone

Developed a comprehensive five-year strategic plan for integrated vector management (IVM) and generated an IRS implementation plan. The country is endemic for some vector-borne diseases and NTDs, such as malaria, onchocerciasis, schistosomiasis and lymphatic filariasis. Development of a consolidated IVM strategic plan that could harness existing capacity and resources was vital. Integrating interventions (with drug treatment) that have impact on transmission of diseases will make for smooth attainment of optimal health impact, and also promote chances of disease elimination.

In a bid to diversify vector control methods, the country conducted a pilot IRS to assess feasibility, acceptability and impact of the method under local circumstances, with a view to scaling it up for impact. The results indicated that IRS can be one of the vector control methods.

2 Eritrea and South Africa

Are among the countries with a low malaria burden and developed national IVM guidelines to control and eliminate malaria and other vector-borne diseases. The countries reported appreciable levels of reduction in their malaria burden through years of intensive control of transmission. They needed to consolidate what had been achieved and to foresee the long-term sustainability of gains and push for elimination of the diseases. Strengthening the vector control programme through diversification of strategies, in the context of IVM, has been the preferred approach for both countries.

3 Botswana

Is one of the countries in Southern Africa that intends to embark on malaria elimination. As part of its programme, the country developed a guiding document on how to target and intensify indoor residual spraying, based on malaria-case distribution and use of larviciding in malaria elimination, as the country plans to transform the programme from control to elimination.

In view of the new strategic agenda for malaria elimination, vector control needs assessment (VCNA) was conducted to assess operational readiness of South Africa's programme for malaria elimination. Key findings on gaps that need to be addressed included:

- (a) Inadequate capacity for proper supervision, monitoring of IRS operations and vector surveillance;
- (b) Inadequate data management and use at district level;
- (c) Limited knowledge and capacity for safe management of pesticides in some provinces;

Scale-up of Integrated Vector Management Interventions in 2012-2013

- (d) Lack of guidelines and standard operating procedures at all levels, especially in districts;
- (e) The increased price of dichlorodiphenyltrichloroethane (DDT), which is a serious threat to the IRS programme in South Africa. To sustain the programme and implement the insecticide resistance management strategy therefore becomes a challenge.

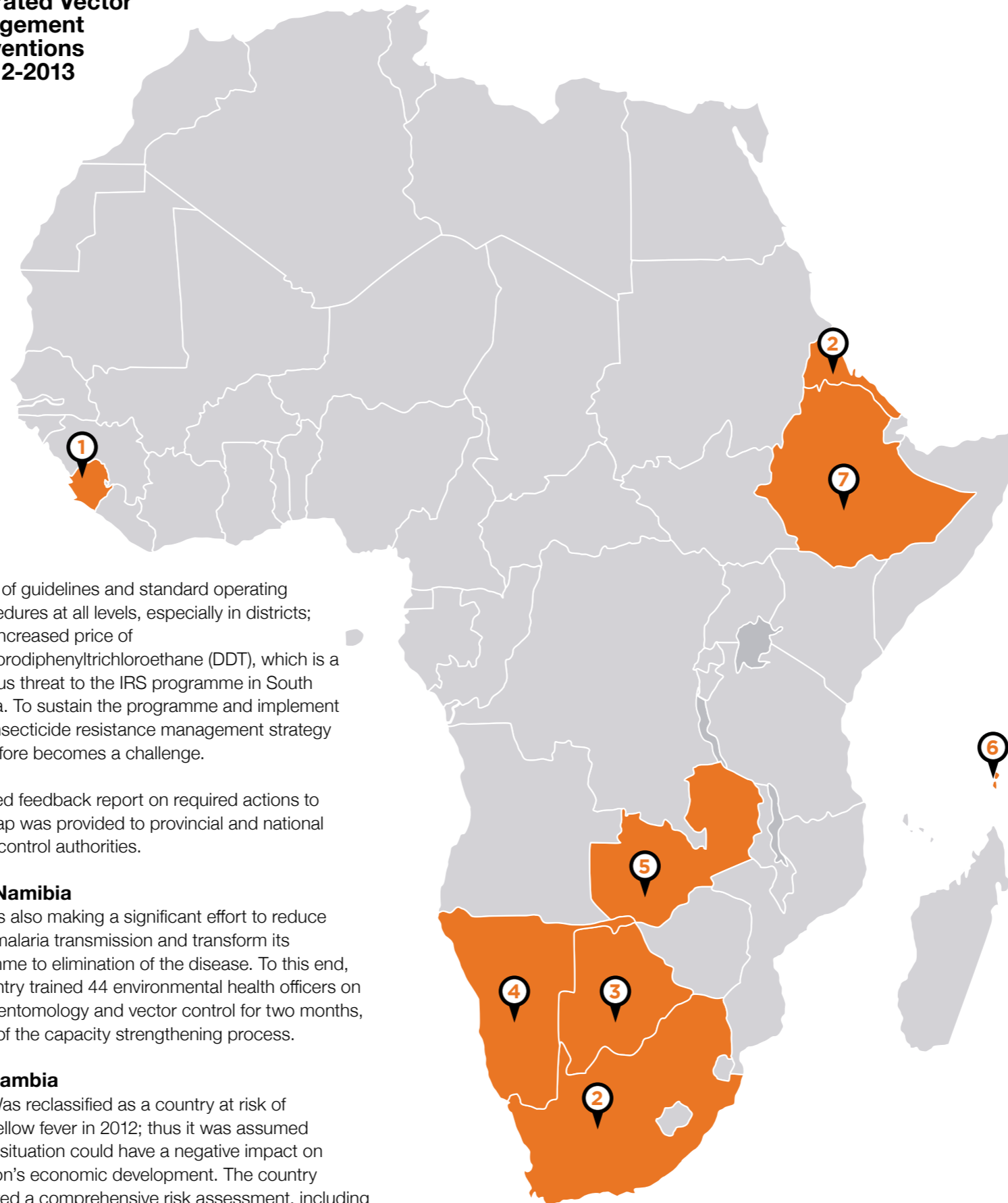
A detailed feedback report on required actions to fill the gap was provided to provincial and national malaria control authorities.

4 Namibia

Is also making a significant effort to reduce malaria transmission and transform its programme to elimination of the disease. To this end, the country trained 44 environmental health officers on malaria entomology and vector control for two months, as part of the capacity strengthening process.

5 Zambia

Was reclassified as a country at risk of yellow fever in 2012; thus it was assumed that the situation could have a negative impact on the nation's economic development. The country conducted a comprehensive risk assessment, including



entomological survey in the two supposedly at-risk provinces, due to their proximity to yellow fever endemic provinces in Angola. WHO supported both the entomological and human components of the survey.

With regard to the entomological survey, the calculated risk index of the yellow fever vector *Aedes aegypti* indicated a very low risk of yellow fever transmission in both provinces. The vector samples were sent to a specialised lab in Dakar for analysis, with results indicating that there was no yellow fever virus circulating in the mosquito population. Apart from the risk assessment, the situation further provided opportunity to build the national capacity in yellow fever entomological techniques.

6 Seychelles

Reported an epidemic of dengue fever in September 2012. WHO supported an entomological assessment that has provided information on the availability and abundance of the vector, *Aedes albopictus*. Recommendations on vector control interventions were made towards reducing vector density, thereby lowering the risk of further transmission. Entomological capacity building was conducted as well.

7 Ethiopia

Similar support was provided to Ethiopia in response to a reported dengue fever epidemic in the eastern part of the country. The programme worked with a team of national and external experts and conducted an entomological survey, alongside that of the human population, to assess the status of transmission, as this was the first time the disease had been reported in Ethiopia. The survey confirmed the presence of the vector *Aedes aegypti* at a much higher level than the risk index, indicating an active circulation of the yellow fever virus. Both mosquito and human blood samples have been dispatched to Dakar to confirm the field survey outcomes.

In the meantime, a recommendation was provided to conduct fogging and IRS to reduce the vector population density, and thereby transmission. Community education and awareness on yellow fever transmission and its control methods were strongly recommended, as most breeding sites were found to be in contact with household water containers. Recommendations on long-term actions, such as application of IVM and continuous monitoring of the vector, were made.



Piloting IVM Intervention in Selected Countries

To date, the vector control strategy heavily relies on two major insecticide-based interventions: indoor residual spraying and use of long-lasting insecticide-treated nets. These interventions use a limited group of insecticides. Efforts made to produce and document scientific evidence on the potential role of other interventions, to generate information for good management of vector control interventions, including pesticide management, and to build capacity are under way through pilot projects.

(i) Demonstrating Cost Effectiveness and Sustainability of Environmentally Sound and Locally Appropriate Alternatives to DDT for Malaria Vector Control in Africa

The project aims to support countries in searching for an evidence base for and to build their capacities to diversify their vector control strategies, in order to better respond to ever-changing vector behaviour, including insecticide resistance, to environmental concerns and to increased costs. The project is being implemented in Ethiopia and Madagascar over the period 2011-2015, and is sponsored by funds from the Global Environmental Facility (GEF) through UNEP. To date, both countries have trained a total of more than 200 national and district staff in various entomological disciplines. They have also collected useful baseline data including malaria entomological and parasitological information. In Ethiopia, an entomological survey indicated the resurgence of *An. funestus* after many years of it not being reported, following a long period of applying IRS.

The situation calls for further and more detailed investigation, considering the fact that the species is a more effective vector than *An. arabiensis* and can have a negative impact on control efforts. In Madagascar, the study documented the vector population's abundance, and the night-biting cycle of the two major vectors, *An. gambiae* and *An. funestus* in 10 study sites. The significant presence of *An. Mascariensis*, which is considered a secondary vector in a number of study localities, is important. The results indicate the need for specific study on the status of the role of the species in malaria transmission in Madagascar.

(ii) Establishing Efficient and Effective Data Collection and Reporting Procedures for Evaluating the Continued Need for DDT for Disease Vector Control

Observations over the years confirm that weak and inefficient management of data on the use of and

reporting on insecticides is one of the gaps in many national malaria control programmes (NMCPs). The project aims at providing support to project countries in building and strengthening national and subnational capacity for such data collection and reporting, and provision of complete information to the Secretariat of the Stockholm Convention (SSC) on the production and use of DDT for disease vector control, based on strong intersectoral collaboration and information-sharing. The project was supported with funds from the GEF and will be implemented over a 36-month period (2012-2014). Ten countries¹⁷ are implementing the project.

Through WHO's continuous follow-up, guidance and technical support including its missions, all 10 countries have initiated implementation, compiled data on the use of DDT and other insecticides for disease vector control, and have submitted a report to the SSC. All of them have identified relevant stakeholders, set up working groups (intersectoral committees), identified central institutions, held intersectoral workshops and have raised awareness among central institutions on the need of efficient and effective data collection and reporting procedures for evaluating the continued need for DDT in disease vector control.

A total of 1,336 national staff have been trained on IRS techniques, supervision of entomological data collection, reporting and insecticide resistance monitoring. Of these, three from Mozambique were trained on insecticide resistance monitoring techniques in South Africa.

In October 2013, WHO organized a regional workshop to assess the status of project implementation in each country. In view of the slow progress in some countries, next steps to accelerate implementation were agreed upon. Overall project implementation plans and timelines were revised. A request for a no-cost extension to the project end-date has been accordingly submitted to the donor (GEF).

Managing Public Health Pesticides (PHPs)

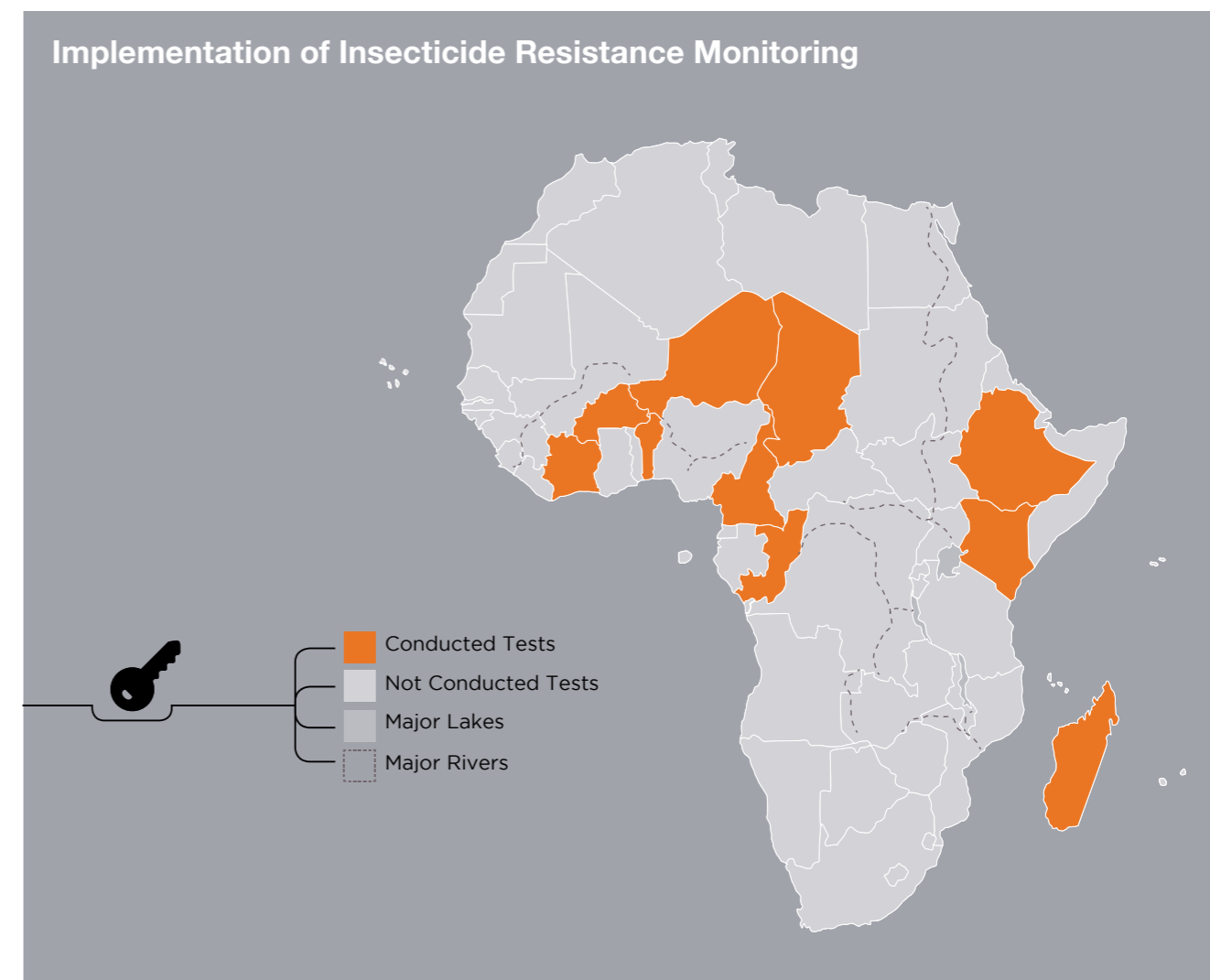
Public health pesticide management is a challenge that can only be addressed through close collaboration between all stakeholders, such as agriculture, environment and pesticide control authorities. The Cape Town University hosts a forum called the "Centre for Occupational and Environmental Health Research (COEHR) Pesticide Discussion Forum", where interested experts, mostly from the agriculture and pesticide control sectors all over the world participate

in an online discussion fortnightly.¹⁸ WHO participates in the discussion and provides information on issues relating to PHPs, and has also chaired discussions, particularly when topics were on PHPs and insecticide resistance.

Insecticide Resistance Monitoring

Following the development and dissemination of the Global Plan on Insecticide Resistance Management (GPIRM), technical and financial support was provided to some countries to develop national plans and implement insecticide resistance monitoring and management actions. Ethiopia, Kenya and Mozambique each formulated national strategic plans for insecticide resistance monitoring and management, and a total of 10 countries¹⁹ conducted insecticide resistance tests and documented the status of resistance of malaria vectors in 2012-2013.

“OBSERVATIONS OVER THE YEARS CONFIRM THAT WEAK AND INEFFICIENT MANAGEMENT OF DATA ON THE USE OF AND REPORTING ON INSECTICIDES IS ONE OF THE GAPS IN MANY NATIONAL MALARIA CONTROL PROGRAMMES.”





Access to Safe Drinking Water and Safe Sanitation

Although access to water supply and sanitation in sub-Saharan Africa has been steadily improving over the past two decades, the Region still lags behind every other developing region. Access to improved water supply has increased from 49% in 1990 to 60% in 2008, while access to improved sanitation has only risen from 28% to 31%. Sub-Saharan Africa is unlikely to meet the Millennium Development Goal of halving the share of the population without access to safe drinking water and sanitation between 1990 and 2015. There are, however, large disparities among sub-Saharan countries, and between urban and rural areas.²⁰

Joint Monitoring Programme

The WHO/UNICEF Joint Monitoring Programme for water supply and sanitation (JMP) is the official United Nations mechanism for tracking progress countries have made regarding access to drinking water and sanitation and, within the MDG period, for monitoring progress of African countries towards the MDG target in relation to water and sanitation. Data reconciliation and harmonization works were conducted as an important focus under the fourth JMP strategic objective of country outreach. JMP intensified its

efforts to engage with countries to reconcile differences and harmonize monitoring both across the different actors within a country, as well as with JMP. For the large part, countries appreciated JMP efforts at enhancing its monitoring initiatives and of considering many aspects of monitoring that remain underutilized, like monitoring of water quality, sustainability and reliability of services, and capturing equity and human rights elements in access and extra-household access.

Due to the use of different sources of data, diverging monitoring methods and lack of harmonization of the definition of access, JMP's estimates – based on surveys and censuses under the auspices of each country's national bureau of statistics – frequently differ from estimates produced by sectoral water and sanitation agencies. In order to address such discrepancies, JMP engaged with 26 countries²¹ in a process of data reconciliation and harmonization.

To strengthen its strategic partnership with the African Ministers' Council on Water (AMCOW), JMP will be leading the theme group on drinking water and sanitation of the AMCOW monitoring and evaluation taskforce in several meetings during 2013 to encourage harmonization among institutions in charge of monitoring at national level, and alignment between national monitoring, AMCOW and the African Union Commission (AUC) monitoring and that of JMP. WHO, in collaboration with UNICEF, Water Aid and AMCOW, supported SADC to establish a subregional monitoring framework on drinking water and sanitation. In a bid to improve measurement of drinking water safety, WHO and UNICEF are developing new methods for directly measuring drinking water quality in nationally representative surveys. A water quality module was fielded alongside the sixth Ghana Living Standards Survey (GLSS-6) in 2012-13; drinking water samples were tested for E. coli and arsenic by field teams using portable testing equipment, with a portion of samples cross-checked in government laboratories.

Some country experiences in JMP during the biennium are highlighted below. JMP is using the country micro data from central statistics authorities, collected through DHS, welfare monitoring surveys (WMS) and censuses, to assess a country's progress towards water and sanitation in relation to achieving MDG seven.

In Ethiopia, WHO supported the country data consultation for updating the WHO/UNICEF Joint Monitoring Programme (JMP) of Water and Sanitation

Country Report for 2013. Ethiopia has conducted a National WASH Inventory (NWI), counting all water and sanitation schemes. This revealed no significant difference between NWI and JMP data. WHO supported the reconciliation of the NWI and JMP. During the symposium organized by IRC and the Ethiopian Ministry of Water and Energy in April 2013, WHO presented the latest JMP data for Ethiopia, which confirmed that the latest estimates of NWI and JMP were now relatively close. For instance, while the NWI household survey estimates usage at 50% and access (provision) at 52%, the JMP estimates for 2011 are at 49%. For rural water supply data from the household survey differed by only six percentage points between the NWI usage (45%) and JMP estimates (39%). This experience showed the importance of having national data harmonization forums.

Monitoring and Improving Drinking Water Quality

Efforts to improve drinking water quality included activities on Water Safety Plans (WSPs) and household water treatment and safe storage (HWTS).

In 2012, WHO co-organized the third WSP Conference with IWA in Kampala, Uganda. This event was attended by 289 delegates from 49 countries. Key events included the launch of the Africa WSP Network which included the following partners: the International Water Association (IWA), WHO, United States Environmental Protection Agency (USEPA), African Water Association (AfWA), UN-Habitat, Cap-Net, NETWAS, GIZ and UNEP. In addition, the WHO/IWA WSP training package was launched.²² This training package is based on the WHO/IWA WSP manual (Bartram et al., 2009).²³

WHO has engaged in a number of activities to improve access to and use of effective household water treatment technologies in the African Region. These activities have largely taken place under the umbrella of the WHO/UNICEF International Network on Household Water Treatment and Safe Storage. In 2012, WHO and UNICEF hosted a regional workshop for Southern African countries (Malawi, Mozambique and Zambia)²⁴ and in 2013 for West African countries (Gambia, Ghana, Liberia and Sierra Leone)²⁵ on national household water treatment and safe storage (HWTS) policies and integrated interventions.

The key outcome was the development of national action plans on HWTS where countries identified mechanisms for targeting HWTS among vulnerable groups, including people living with HIV, mothers

“ WHO SUPPORTED WORLD VISION ETHIOPIA IN ITS MID-TERM REVIEW OF A USAID-SUPPORTED PROJECT ON HIV/AIDS CARE AND SUPPORT PROGRAMME ON HOW TO INTEGRATE WASH WITH A FOCUS ON HOUSEHOLD WATER TREATMENT AND SAFE STORAGE. ”

and young children, and individuals affected by emergencies and diarrhoeal disease outbreaks. Following the workshops, WHO financially supported countries to implement plans of action.

In addition, WHO is supporting the Government of Ethiopia to strengthen the evaluation and regulation of household water treatment technologies. A workshop was held along with UNICEF in February 2013 in Addis Ababa on this issue, and a number of action items were identified, including streamlining the regulatory process and testing technologies against a wider range of pathogens and environmental conditions.²⁶ This work contributes to a larger global effort to support Member States in selecting proven household water treatment technologies through the newly established WHO International Scheme to Evaluate Household Water Treatment Technologies.

Household Water Treatment and Safe Storage

WHO supported World Vision Ethiopia in its mid-term review of a USAID-supported project on HIV/AIDS Care and Support Programme on how to integrate WASH with a focus on Household Water Treatment and Safe Storage. WHO promoted the consideration of the WHO Safe Drinking Water Framework in the National Self-Supply/Family Well scaling up, financially supported by JICA, UNICEF, the International Reference Centre (IRC) and other development partners.

Drinking Water Quality Assessment

Ethiopia has Drinking Water Quality Standard ES 261: 2001. However, the standards are not fully



implemented, due to lack of capacity and knowledge gaps. To address the gaps, WHO supported the training of over 200 professionals from health and water sectors in the area of drinking water quality monitoring and surveillance.

The WHO initiative on Water Safety Plans was also introduced through capacity building training in 2013. The training was conducted in collaboration with partners such as German Agro Action; Help for Drop of Water; the Relief Society of Tigray; Norwegian Church Aid; and Finland CO WASH Programme Support to the Ethiopian Government. Over 300 professionals were trained on Water Safety Plans and four pilot projects, where baseline data had been collected, were launched. Support was also provided in the following areas:

1 Procurement of Field Level Rapid Water Quality Test kits and training of staff on their usage. The kits were distributed to districts prone to waterborne disease outbreaks.

2 Water quality and safety assessment, where findings were presented at the national multistakeholder forum. Undertaking was developed for improvement of water quality through implementation of Water Safety Plan of the multistakeholder forum meeting.

3 National resource capacity on climate and malaria data management strengthened;

4 Four participating district malaria coordinators; four district health records and information officers; four meteorological station managers and two national-level focal points trained on e-portal data entry, manipulation and decision-making;

In Guinea, WHO provided three water testing kits (JMP kits) and water quality monitoring is under way in communities. The facilities monitored include: 50 ordinary wells, 2 appointed sources, and 421 households.

In Lesotho, global positioning systems (GPS) equipment was procured for the environmental health division and distributed to all districts and the central government level (Water and Sanitation Programme Manager's office). Technical and financial support was provided to the country for training two environmental health programme managers and 10 district health inspectors on geographic information system principles, concepts and application in water and sanitation services.

Water, Sanitation and Hygiene to Prevent Outbreaks of Water and Sanitation-Related Diseases

In 2013 WHO initiated a water, sanitation and hygiene project to prevent cholera in Chad and Northern Cameroon. WHO is working directly with the governments of these countries and local implementing agencies in a three-year effort to develop and test water, sanitation and hygiene behaviour change interventions to sustainably prevent cholera in hotspot communities. Hygiene kits were distributed, along with improvements in water and sanitation services in healthcare facilities under the umbrella of water safety plans. Approximately \$1 million of funding for these activities was provided by the OPEC International Development Fund (OFID) and DFID/UK Aid. Country support for prevention and control of selected epidemics is highlighted below.

In Ethiopia, WHO supported the following activities: revision of water tracking guidelines and WASH emergency response indicators; development of household water treatment and safe storage; national guidelines for emergency response; joint health and WASH emergency response assessment in the Somali region; development of a plan for flood emergency, and a WASH response to the July – August 2013 floods in the Amhara region. As part of capacity building for WASH emergency response, WHO supported training aimed at building the capacity of partners (NGOs) and government on WASH emergency responses in Oromia.

In Ghana, through funding from the Central Emergency Response Fund (CERF), the country was supported to respond to an outbreak of cholera in

three regions, where three districts were affected (Western, Brong-Ahafo and Upper East with case fatality rates of 1.2%, 2.8% and 3.5% respectively). A population of 40,000 was targeted in this response. The objectives of this support were to enhance early case detection and improve case management of cholera, and to ensure effective community-based Behavioural Change Communication (BCC) for sensitizing and soliciting the community for participatory cholera containment campaign.

The BCC component was carried out through community-based sensitization, using cholera prevention posters. Cholera prevention posters were developed with key messages on hand washing with soap and water; safe disposal of human excreta; the five keys to safer food; and when and where to seek medical attention. Prevention posters were printed and distributed to targeted districts and beyond, thus reaching more than the 40,000 targeted CERF beneficiaries.

The BCC activities, coupled with enhanced surveillance, reporting and data quality management, capacity building of laboratory and disease control officers in rapid diagnosis of cholera and data management, and procurement of laboratory supplies resulted in the prevention of further cases of cholera and control of the outbreak, while case fatality declined considerably.

In Guinea, the Health and Environment Programme played a significant role in prevention and control of cholera outbreaks in 2012 and 2013. During the operation, 30 agents (promoters and sensitizers) were re-trained on cholera prevention measures and the benefits and techniques of chlorination. The agents, in turn, raised awareness of 12,747 households in areas at high risk of cholera or those affected by the epidemic, with respect to water hygiene and treatment. The affected areas were Boffa, Forecariah, Kindia, Dubreka, Conakry, Telimele, Mamou, Boke and Nzerekore.

In Lesotho, WHO was involved in the coordination of water and sanitation-related outbreaks that led to bloody diarrhoea and typhoid in two districts. Intervention measures that were put in place included: case detection; case management; assessment of drinking-water quality; and public education sessions on water, sanitation, food hygiene; as well as personal and environmental hygiene. The outbreaks occurred in hard-to-reach areas in two districts.

Global Assessment of Access to Drinking Water and Sanitation

The UN-Water Global Analysis and Assessment of Sanitation and Drinking Water (GLAAS) monitors efforts and approaches to extend and sustain water, sanitation and hygiene (WASH) systems and services. During the 2012-2013 reporting period, the following were achieved under GLAAS.

The 2012 GLAAS report was published and distributed in different forums, including the workshop on the 2013 GLAAS exercise in Burkina Faso. This report provides, inter alia, the following highlights for the African Region:

There is growing political will for WASH implementation and accountability. It is noted that African countries reported strong progress in adopting and publishing WASH sector policies. Despite the global financial crises, external support for Africa for WASH increased from 2008–2010. More than 80% of African countries





recognize the right to water and nearly 60% of African countries recognize the right to sanitation. Despite having made progress in setting targets and putting policies in place, countries' outputs to meet national targets are insufficient.

There is insufficient domestic financing to cater for sanitation, and the situation is worsened by the inability of countries to spend the limited funds received. There is a risk of slippage on progress made, unless sufficient financial and human resource support is given to sustain operation and maintenance. Improved monitoring is required to generate information for evidence-based decision-making.

The 2013-14 GLAAS exercise for the African Region was launched in Ouagadougou, Burkina Faso in August 2013. WHO, in collaboration with Water and Sanitation for Africa (WSA) coordinated GLAAS 2013 exercise in 32 countries. The exercise covers the same areas addressed in 2012; this is grouped under four sections as follows: Governance, monitoring, human resources and financing. Data collection and validation was completed in October 2013, and country data submitted to coordinating agencies in the region and at headquarters. The 2014 GLAAS report is expected to be published in the last half of 2014

Global and Regional Survey on Water Safety Plans

The survey was conducted in 2013 with the aim of achieving a better understanding of the global

“ IN GUINEA, FIVE SENSITIZATION TOOLS ON BEST PRACTICES IN MANAGING BIOMEDICAL WASTE AND PROMOTING GOOD HYGIENE PRACTICES IN HOSPITALS WERE PREPARED FOR INFECTION PREVENTION AND ENVIRONMENTAL PROTECTION. ”

and regional progress of risk assessment and risk management approaches used in drinking water supply. The survey collected information on policies and regulations relating to water safety plans, and implementation and evaluation of the latter. It also looked at benefits and challenges that would inform and strengthen future water safety plan support, guidance and advocacy. Thirty-two²⁷ countries in the African Region participated in the survey. Country institutions that participated in the survey included water supply utility companies and ministries of health. Data from the survey will be analysed by WHO and the International Water Association for publication in a joint WHO/IWA report in 2014.

In Ethiopia, on the basis of the country Water, Sanitation and Hygiene Universal Action Plan II, Sanitation Action Plan and ONE WASH Plan,²⁸ WHO provided technical and financial support with the aim of building implementation capacity at grass-roots level. Support included:

- (a) **Revision and translation of Community-Led Total Sanitation and Hygiene Implementation and Verification manual** and training guide into Amharic for easy reference by implementers.
- (b) **Revision of the Global Sanitation Fund Plan** targeting 40 woredas in the country as part of mobilizing resources for implementation of the National Sanitation Action Plan. These activities were implemented at community and household level through the national Health Extension Package. The package is implemented by Extension Health Workers and Health Development Army (One to Five Link of Households).
- (c) **WHO supported two rounds of Global Hand Washing Day Celebrations** with the theme “More than just a day – The power is in your hands”. The support included planning, resource mobilization and IEC material development. Over six million school children were reached with messages on hand washing.
- (d) **To comprehensively address environmental health issues at country level, WHO provided support for two festivals** aimed at highlighting the importance of environmental health in public health, in general, and in disease prevention. Support was provided to analyse 10-year trends on available policies and strategies; stakeholders' roles, responsibility and coordination mechanism; institutional arrangements; community mobilization and private sector engagement; financial resources; and coverage of interventions.

WHO worked together with Help for Drop of Water (HfDW), a local NGO focusing on University students and AIESEC (an international organization building the capacity of and empowering youth to develop their leadership potential in development) in conducting a two-day training workshop for 20 volunteer students from four countries (Ghana, Kenya, Ethiopia and Thailand) on water, sanitation, hygiene and climate change linkages to health. Following the training workshop, the volunteer students were deployed for six weeks to two universities, namely Hawassa University and Mekele University to implement the Awareness Activate Change (AAC) project on water, sanitation, hygiene and climate change linkages to health. A meeting was organized for the volunteers to provide feedback to sponsors of the exercise.

In **Kenya**, in the context of the UN Call to Action on Sanitation to End Open Defecation by 2025, technical support was provided for the community-led total sanitation information hub hosted by the Ministry of Health. Support was further provided for open defecation free (ODF) villages' trigger and certification process, including the review of operational guidelines. WHO also supported and participated in national advocacy and global events such as Global Hand Washing days and World Toilet Days.

In **Guinea**, support was provided to NGOs and hygiene agents in raising hygiene-related awareness and safety in the city of Conakry. After training sensitizers and agents, awareness activities were held in markets, schools, landing sites and other public spaces along the streets in Conakry. Awareness sessions were also in the form of dissemination and display of IEC materials, such as posters on the WHO “Five Keys to Safer Food” and “Create an Environment Favourable to Health”.

As part of scaling up interventions for the safety of the city in general, and schools in particular, WHO supported sanitation campaigns implemented by NGOs and other associations. Support was given, in terms of materials and technical advice.

Chemical Management, Incidents and Poisons Centres

Between January 2012 and December 2013, WHO implemented a project to assess the feasibility of a subregional poisons centre in East Africa. This project, funded under the Quick Start Programme (QSP) of the Strategic Approach to International Chemicals Management (SAICM), covered sixteen countries.²⁹

The project involved the synthesis of information drawn from two major activities: a literature review and extensive stakeholder consultation. The stakeholder consultation involved a survey and international and national workshops. 4 of the 16 countries were studied in more depth; these were Kenya, United Republic of Tanzania, Zambia and Zimbabwe.

There are currently four poisons centres in the sub-region: two in Kenya and one each in Zimbabwe and Madagascar.

During implementation of the project, four countries developed proposals to establish poisons centres: Ethiopia, Uganda, United Republic of Tanzania and Zambia. The study found that poisoning caused a significant burden of disease in the subregion. However, available figures were likely to be an underestimation of the actual total figure, because of incomplete data collection in the countries involved.

The outcome of the stakeholder consultation was that, while there was support for a subregional poisons centre, i.e. a poisons centre based in one country that offered services to other countries, the preference was for individual national poisons centres.

Stakeholders identified some advantages of a subregional poisons centre in terms of possible cost-savings, advocacy, stronger cross-border cooperation, and early identification of emerging toxicological hazards. These perceived advantages were countered by uncertainties about sustained funding for the centre from multiple countries, with the possibility that a country might be cut off from the service if it did not pay its dues; difficulties about transfer of confidential patients; product and event-related information across national borders; and a lack of flexibility in terms of specific national needs being met by a multi-country funded service.

An additional concern was that having a subregional poisons centre in one country might hinder the development of toxicological capacities in client countries, since the focus of expertise would be in the country providing the service. On the other hand, some felt that this centre could provide training to professionals in other countries. Some other potential difficulties centred on possible differences in medical standards and resources between the countries served by a subregional service.

While a subregional poisons centre serving linguistically-linked countries could be established,



there were a number of important prerequisites. These included strong political support and an institutional and legal framework agreed by the ministries of health, environment, finance, trade and justice of all the countries concerned. This would cover issues such as funding for the service and its scope, as well as its terms of use (e.g. who could use the service, response times, quality standards, procedures for alerting about chemical events etc).

There would also be need for agreement on how issues of accountability and medical liability would be handled, and, ideally, there should be harmonised legislation between the countries on such issues. In addition, there would be need for agreement on handling of confidential information, e.g. patient data and commercially sensitive information on products.

A subregional poisons centre would need to have information about pharmaceuticals, products, plants, venomous animals etc. in each of the countries that the centre would serve, including the local names for these items. In addition, the centre would need to have information on clinical and laboratory services in the other countries and, if available, contact details of specialist toxicologists in the countries served.

The project report provides a toolkit for establishing national poisons centres, but also proposes a model of national centres linked through a coordinating hub.

Chemical Incidents

WHO has continued to support countries in the region in managing large-scale chemical incidents. In Nigeria, WHO participated in an international meeting

“FOUR COUNTRIES DEVELOPED PROPOSALS TO ESTABLISH POISONS CENTRES: ETHIOPIA, UGANDA, UNITED REPUBLIC OF TANZANIA AND ZAMBIA. THE STUDY FOUND THAT POISONING CAUSED A SIGNIFICANT BURDEN OF DISEASE IN THE SUBREGION.”

on the mass lead poisoning in Zamfara State, Nigeria, which was held in Abuja from 9 to 10 May 2012. The meeting was organized by Médecins Sans Frontières (MSF) to maintain awareness of this continuing problem, to stimulate further action to remedy the situation in contaminated areas, and provide appropriate case management. WHO subsequently held a number of advocacy meetings to try and accelerate the development of a lead laboratory and treatment centre in Zamfara State.

In Congo, following a serious fire at a munitions dump in Brazzaville on 4 March 2012, WHO collaborated with the UNEP-OCHA Joint Environment Unit to obtain information on environmental contamination, and provided technical guidance to the head of the organization on the hazards identified.

A number of activities were carried out in the Region to strengthen capacities for risk assessment and for managing chemical incidents. These activities provided an opportunity to introduce and promote the WHO Human Health Risk Assessment Toolkit and its use, and the WHO Manual for Public Health Management of Chemicals. National and regional workshops were held for the purpose of controlling and managing hazardous chemicals and wastes at ports; and on environmentally safe trans-boundary movement of hazardous chemicals and wastes, in Mauritius from 18-20 June 2012.

WHO continues to provide support to the Post Graduate Diploma in Pesticide Risk Management course for pesticide registrars, run by the School of Public Health and Family Medicine at the University

of Cape Town, South Africa. In addition to providing written input for the course content, in 2013 WHO headquarters/PHE supplied 70 copies of the WHO Recommended Classification of Pesticides publication to be used on the course.

Lead Poisoning

In 2013, WHO launched the first International Lead Poisoning Prevention Week of Action, which took place from 20-26 October.³⁰ This was organized under the auspices of the Global Alliance to Eliminate Lead Paint, for which WHO and UNEP provide the secretariat. Countries were encouraged to use this week to raise awareness about lead poisoning, highlight their own efforts to prevent childhood lead poisoning, and to urge further action to eliminate lead paint. The following countries in the Region organised activities during this week: Cameroon, Côte d'Ivoire, Democratic Republic of the Congo, Gabon, Kenya, Nigeria, South Africa and Uganda.

Energy and Air Pollution

WHO conducted a systematic review of access to electricity by health facilities in 11 sub-Saharan African countries. The purpose of a systematic review is to sum up the best available research on a specific question. This is done by synthesizing the results of several studies. Thirteen health facility surveys from 11 sub-Saharan African countries that met inclusion criteria of the study were used.

On average, 26% of health facilities in the surveyed countries reported no access to electricity. Only 28% of healthcare facilities, on average, had reliable electricity among the eight countries reporting data. Among nine countries,³¹ an average of 7% of facilities relied solely on a generator. Access by healthcare facilities to electricity increased by 1.5% annually in Kenya, between 2004 and 2010, and by 4% annually in Rwanda, between 2001 and 2007.

Waste Management

Waste management is the collection, transport, processing or disposal, managing and monitoring of waste materials. The term usually relates to materials produced by human activity, and the process is generally undertaken to reduce their effect on health, the environment or aesthetics.

Healthcare Waste Management

The management of healthcare waste is being addressed from both a public health and an environmental point of view, based on the Basel Convention.





While WHO is providing countries with technical and financial support, GAVI is providing financial support to address immunization waste, in turn, countries supported by WHO provide technical support to their ministries of health.

In terms of healthcare waste management, WHO provided support to several countries:

1 Ethiopia
Support was provided to develop the National Healthcare Waste Management Strategy and Implementation Plan between 2012 and 2015. These documents will be useful to the work of health managers and programme officers across the health sector, including those in the private health sector. The purpose of developing this plan is to provide a tool that gives health managers guidance in planning, implementing and monitoring activities regarding healthcare waste management in health facilities.

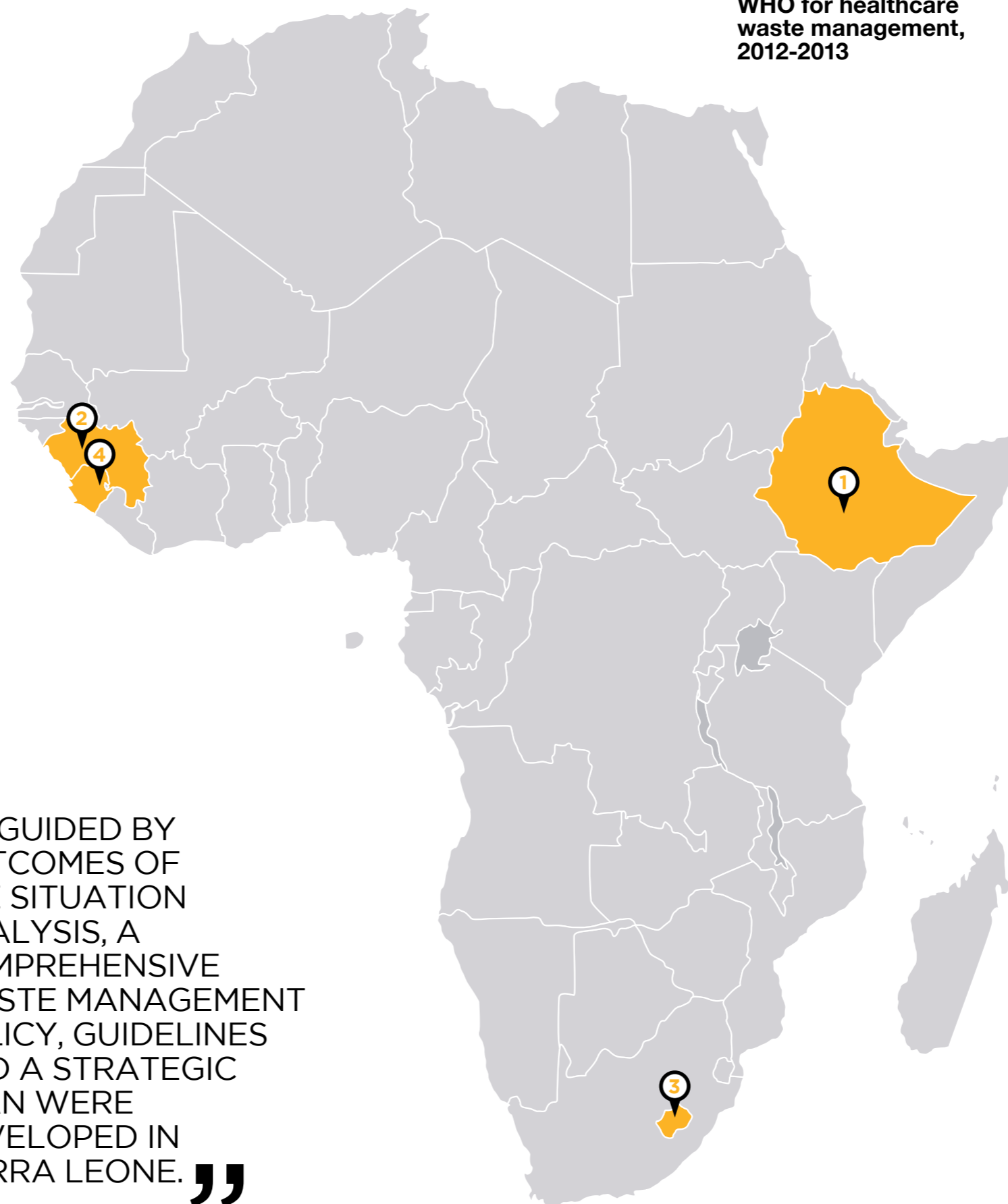
The strategy and implementation plan includes, resources required, alternative technology options, implementation guidance and capacity building activities. The role of WHO was to support generation of evidence on the current practice of HCWM at hospitals, health centres, health posts and private health facilities.

In addition, WHO is a member of the National Infection Prevention and Patient Safety Advisory technical working group that supports the Ethiopian Ministry of Health. In the process of supporting the National Healthcare Waste Management (HCWM) Strategy and Implementation Plan, WHO mobilized financial resources through GAVI. For the wider stakeholders' engagement in the implementation of the plan, a national validation workshop was organized and the implementation plan was shared.

2 Guinea
Five sensitization tools on best practices in managing biomedical waste and promoting good hygiene practices in hospitals were prepared for infection prevention and protection of the environment. These tools include:
(a) **infection prevention**
(b) **segregation**
(c) **use of bins**
(d) **elimination**
(e) **incineration.**

“GUIDED BY OUTCOMES OF THE SITUATION ANALYSIS, A COMPREHENSIVE WASTE MANAGEMENT POLICY, GUIDELINES AND A STRATEGIC PLAN WERE DEVELOPED IN SIERRA LEONE.”

Support provided by WHO for healthcare waste management, 2012-2013



Support supervision was provided to improve management of biomedical waste in the regional hospitals of Boke, Kindia, Mamou, Faranah, Kankan and Nzerekore and Mali district hospital.

The managers, executives and health personnel involved in waste management at the health facilities visited received information and guidance as well as awareness-raising material on management of biomedical waste and on infection prevention.

Support was provided for the vaccination campaign against measles through development and monitoring of the implementation plan.

Support was also provided for the rehabilitation of existing incinerators in the regional hospitals of Kankan, Nzerekore and Mamou, and in the national hospitals of IgnaceDeen and Donka; staff were provided for hospitals of Kipé, Boke, Faranah and Mali and 18 hospitals in the prefectures.

3 Lesotho
WHO is represented in the technical working group to develop healthcare waste standards and regulations for the country. WHO supported Lesotho in developing healthcare waste management plans for 16 out of 19 hospitals.

4 Sierra Leone
A study was conducted to assess the situation of healthcare waste management practices in health facilities. Key results of the study showed low technical and administrative skills in healthcare waste management, largely due to poor practices and inadequate training for health workers on healthcare waste management.

Guided by outcomes of the situation analysis, a comprehensive waste management policy, guidelines and a strategic plan were developed. The strategic documents are intended to support the effort required in properly managing healthcare waste in the country, in order to minimize related risks and diseases.

WHO assisted in training 30 healthcare workers from all districts on basic techniques in clinical waste management. The trained healthcare workers were to conduct cascade training sessions for their counterparts in their respective districts.



E-Waste Management

During the last few years, various international calls for action have highlighted the need for strategic interventions in the field of e-waste. These include the Libreville Declaration emanating from the first Interministerial Conference on Health and Environment in Africa 2008, the Busan Pledge for Action on Children's Environmental Health of 2009 and the Strategic Approach to Integrated Chemical Management's expanded Global Plan of Action issued at the International Conference on Chemical Management ICCM3 in 2012.

Currently, there are a number of international initiatives that are addressing global e-waste management and trade concerns, as well as issues with environmental pollution due to e-waste. Together with its collaborating partners, WHO is working at identifying the main sources and potential health risks of e-waste exposure, and defining successful interventions.

In addition, WHO has recently launched the E-Waste and Child Health Initiative aimed at protecting children and their families from the detrimental health consequences of e-waste. This initiative includes raising awareness about and communicating the problem of e-waste; developing training methods and programmes for health professionals; encouraging specific research about e-waste; and gathering interested stakeholders to move this issue forward.^{32, 33, 34}

Promoting Healthy Settings

A setting is where people actively use and shape the environment; thus it is also where people create or solve health-related problems. Settings can normally be identified as having physical boundaries, a range of people with defined roles, and an organizational structure. Examples of settings include schools, work sites, hospitals, villages and cities.

“WHO HAS RECENTLY LAUNCHED THE E-WASTE AND CHILD HEALTH INITIATIVE AIMED AT PROTECTING CHILDREN AND FAMILIES FROM THE HEALTH CONSEQUENCES OF E-WASTE.”

Action to promote health through different settings can take many forms. Actions often involve some level of organizational development, including changes to the physical environment or to the organizational structure, administration and management. Settings can also be used to promote health, as they are vehicles to reach individuals, to gain access to services, and to synergistically bring together interactions throughout the wider community.

WHO supported countries as follows:

Ghana embarked on setting up national structures on employee well-being within the public sector through the newly inaugurated “National Steering Committee on Employee Health and Well-being Programmes” and within the private sector through the “Ghana Business Coalition on Employee Well-being” (formerly Ghana Business Coalition against AIDS).

The Employee Health and Well-being concept is the further development of the WHO Healthy Workplace initiative with an added social protection component, including financial wellness, worker health protection and health promotion.

In April 2013, both committees and coalitions organized the National Health and Safety Day in Accra with the Minister of Employment and Labour Relations as guest of honour. WHO supported the National Health and Safety Day, since the Employee Health and Well-being concept, which has been supported by GIZ Ghana, is in line with the WHO Healthy Workplace Initiative.

In the Republic of South Africa, the Department of Health is in the process of amending its occupational health legislation, and a programme is to be developed to expand coverage to all workers, including informal workers in the context of the national initiative for primary healthcare reengineering – moving to district-based care, which entails working with district-based community outreach teams, health promotion and disease prevention by primary care teams, district specialist teams and school health authorities.

Healthcare for workers transitioned from the traditional occupational health (limited to workplaces mainly in the private sector, and focused only on problems directly related to the work of permanent employees under employers' responsibility) to public health-based care where action goes beyond the workplace to address all health determinants, among all workers (formal and informal) with the involvement of all stakeholders.

The model for workers' health services included:

- 1 **Community level** – primary care nurse, environmental health officer and community health workers;
- 2 **District hospital** – specialists in family medicine, general practitioners, occupational nurses and hygienist;
- 3 **Regional (secondary level) hospital** – specialists in occupational medicine; and
- 4 **Central hospital** – academic and referral units in all disciplines of occupational health.

The next phase of the programme will include putting in place an integrated social protection system for workers; developing infrastructure and human resources for workers' health; and ensuring appropriate funding. The challenges are availability of human resources, the curative focus of primary care, fragmented service delivery and insufficient quality assurance.

In addition, WHO and its collaborating centre at the National Institute for Occupational Health carried out a field study on the content and costs for delivery of essential interventions for workers' health at the primary care level. Also, the South African Department

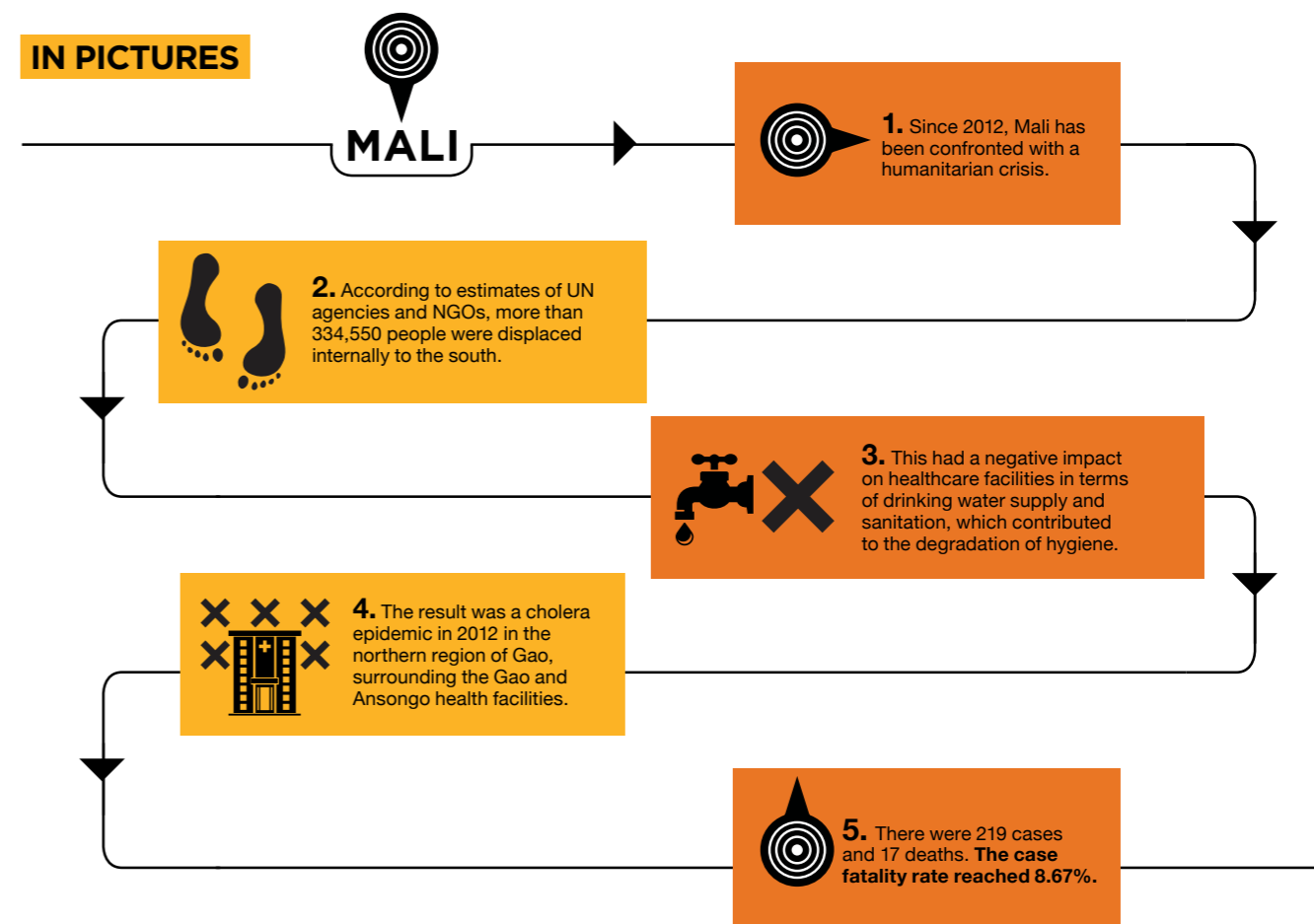
of Health together with WHO organized a side event at the 66th World Health Assembly to highlight the importance of addressing health needs of workers, particularly working poor and informal sector workers in regard to policies on universal health coverage.³⁵

Health and Environment in Emergencies

In 2013, WHO initiated water, sanitation and hygiene projects to prevent cholera in Chad and Northern Cameroon. WHO is working directly with the governments of these countries and local implementing agencies on a three-year effort to develop and test water, sanitation and hygiene behaviour change interventions to sustainably prevent cholera in hotspot communities. Hygiene kits will be distributed along with improvements in water and sanitation services in healthcare facilities under the umbrella of water safety plans. Approximately \$1 million of funding for these activities is being provided by the OPEC International Development Fund and DFID/UK Aid.

A Case Study of Mali

Since 2012, Mali has been confronted with a humanitarian crisis, which has resulted in large





population movements within and outside the country. According to estimates of the United Nations agencies and NGOs on the ground, the number of internally displaced people was more than 334,550. This very heavy population movement to the south had an impact on the capacity of healthcare facilities in terms of drinking water supply and sanitation.

In the occupied regions, water infrastructure experienced failures with frequent interruptions of drinking water supply. This situation contributed to the degradation of hygiene and sanitation conditions in healthcare facilities. Consequently in 2012, the northern region of Gao experienced an epidemic of cholera with 219 cases and 17 deaths. The case fatality rate reached 8.67%, and affected communities were from the surrounding areas of Gao and Ansongo health facilities.

In 2012, WHO in collaboration with the Malian Ministry of Health, undertook a rapid assessment of access to water, sanitation and hygiene in Gao and Ansongo health facilities, with the support of an NGO named GRAIP.

In 2013, a second evaluation was conducted in Gao district where 19 health facilities (17 CHCs, 1 CSRef and Gao Hospital) took part in the rapid assessment survey for access to water, hygiene and sanitation. This evaluation aimed to assess the progress made from 2012 to 2013 in accessing safe drinking water, hygiene and sanitation services in health facilities.

Specific Interventions

Considerable progress was made between 2012 and 2013 in the following areas:

- (a) Disinfection of premises;
- (b) Availability of posters on the correct procedures for hand hygiene;

- (c) Availability of products and equipment for cleaning and maintenance (detergents, disinfectants and other supplies);
- (d) Availability of soap; and
- (e) Information for patients and accompanying persons on hygiene measures.

General Comments on Gao District:

Progress recorded in Gao district was due to the combined efforts of WHO and the Malian MoH, through the various humanitarian missions during which specialists in hygiene and sanitation worked with NGOs and operational teams to improve conditions of hygiene and sanitation in health facilities.

Interventions provided by WHO for improving access to water, hygiene and sanitation in healthcare facilities.

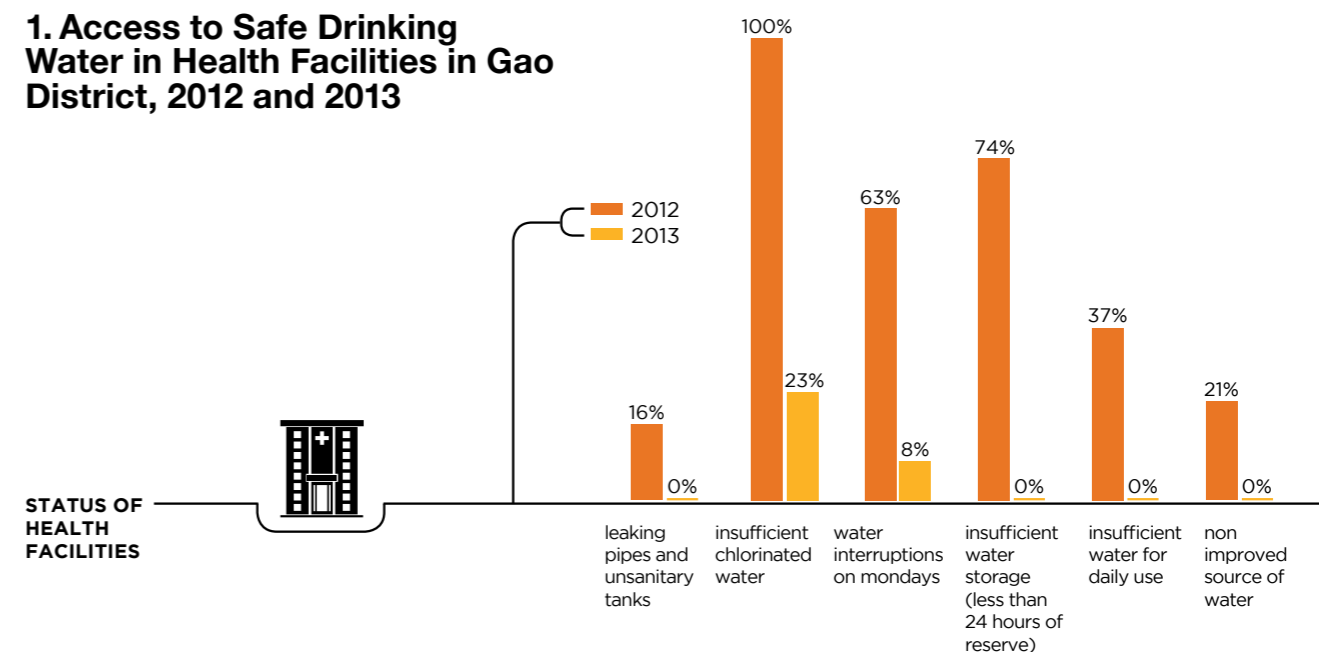
WHO provided support through the GRAIP database, which showed improved access to safe drinking water, hygiene and sanitation in healthcare facilities in Gao district. These interventions focused on:

- (a) Provision of materials and equipment for hygiene and sanitation;
- (b) Provision of inputs including hygiene products (bleach, Aquatabs) ;
- (c) Establishment of communication materials (posters and leaflets);
- (d) Support for awareness campaigns on promotion of hygiene behaviours and practices.



Results of the Survey

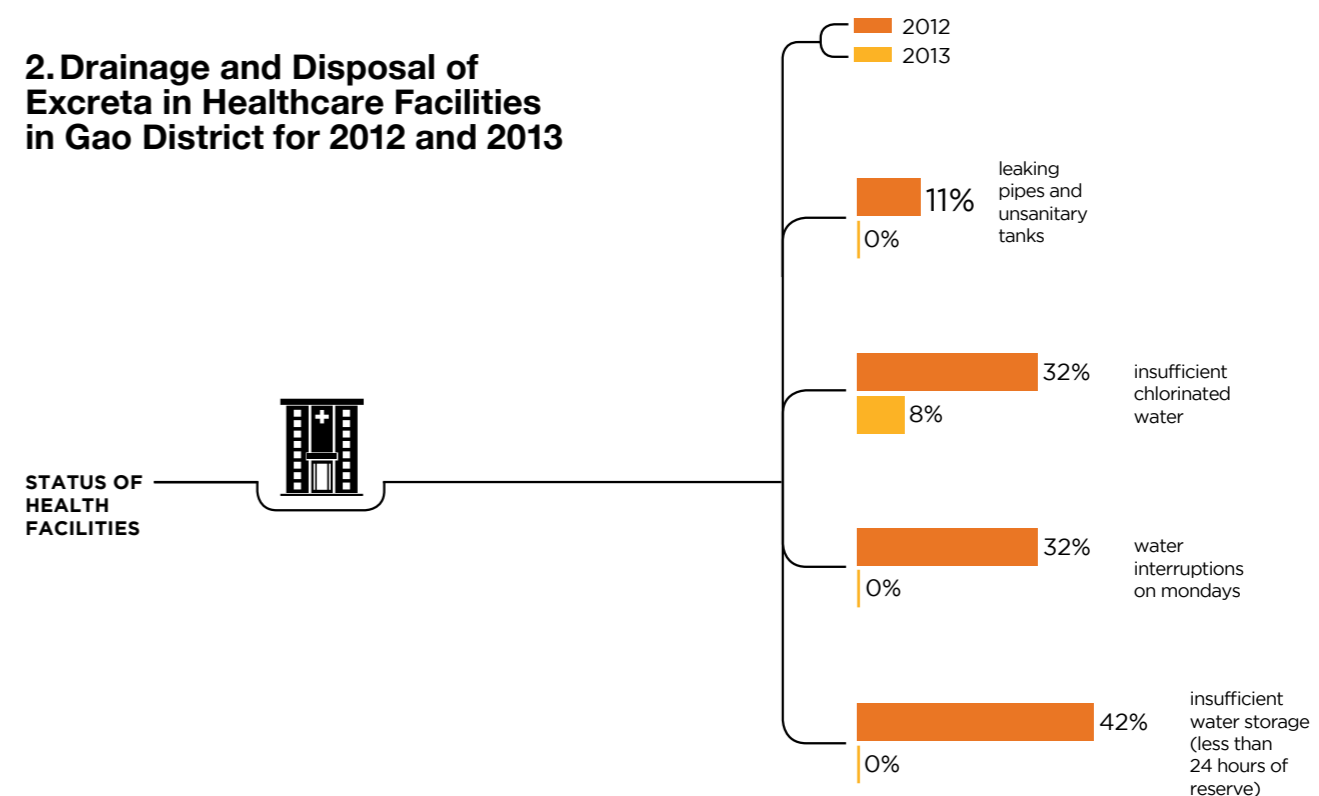
1. Access to Safe Drinking Water in Health Facilities in Gao District, 2012 and 2013



Evaluation of access to safe drinking water in healthcare facilities in Gao district in 2012 was followed by interventions which helped to improve a number of

indicators: chlorination of water improved from 0% in 2012 to 23% in 2013 for all facilities. Water storage significantly improved from 26% in 2012 to 100% in 2013.

2. Drainage and Disposal of Excreta in Healthcare Facilities in Gao District for 2012 and 2013

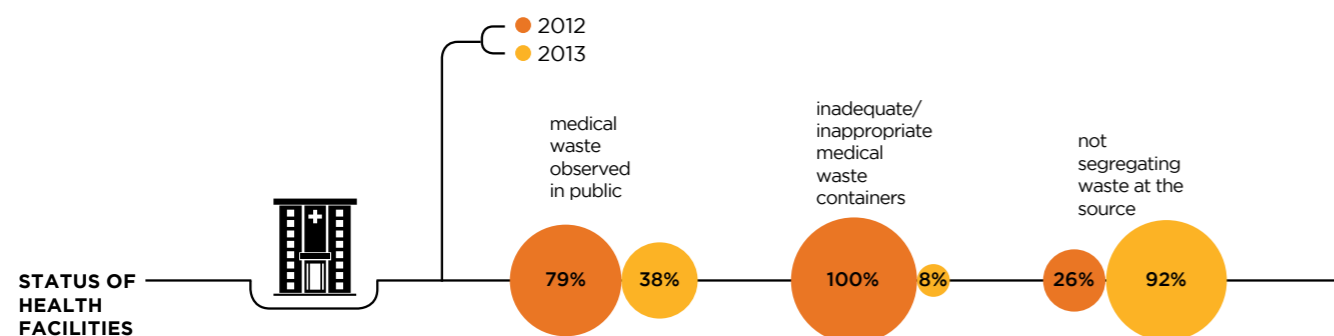


In relation to the presence of wastewater in the environment, there was a significant decrease by more than 42% in facilities. The presence of stagnant

water around water points reduced by 32%, while signs of open defecation reduced from 32% in 2012 to 8% in 2013



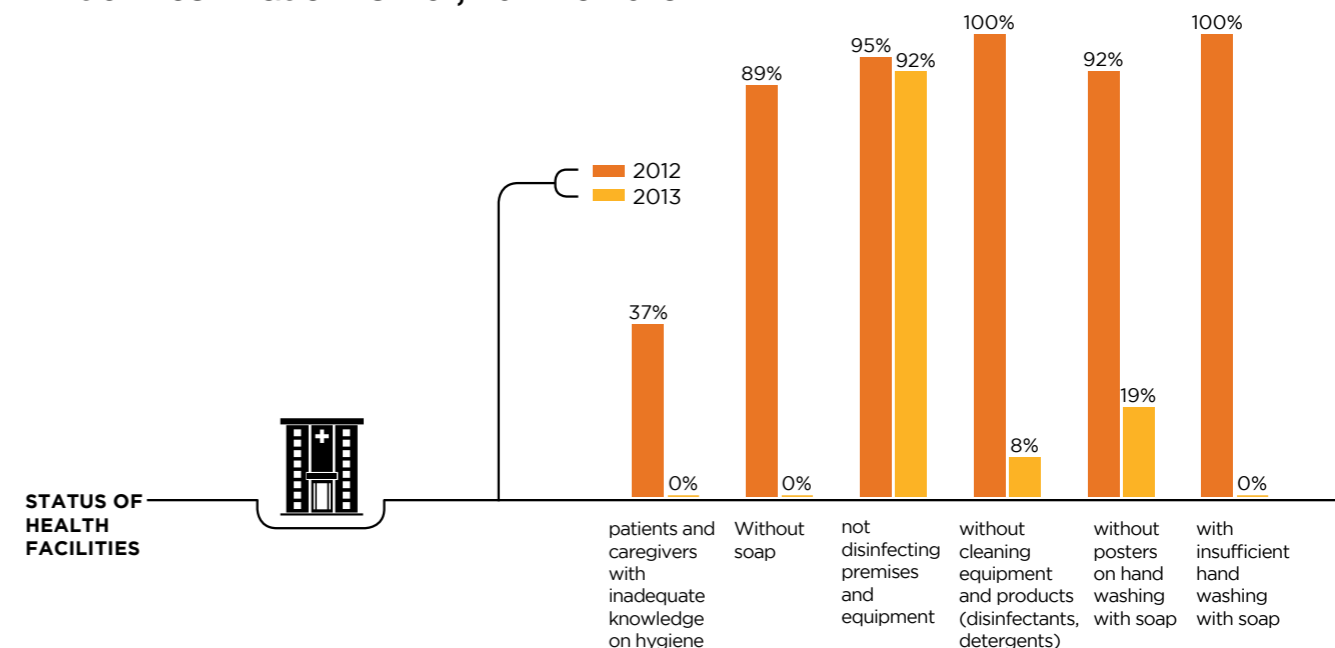
3. Disposal of Medical Waste in Healthcare Facilities in Gao District, 2012 and 2013



In relation to healthcare waste management, health facilities with medical waste observed in public reduced by almost half from 79% in 2012 to 38% in 2013. The number of facilities with

inadequate or inappropriate containers or bins dropped by 92% for that period. The practice of waste segregation, however, deteriorated despite the allocation of dustbins.

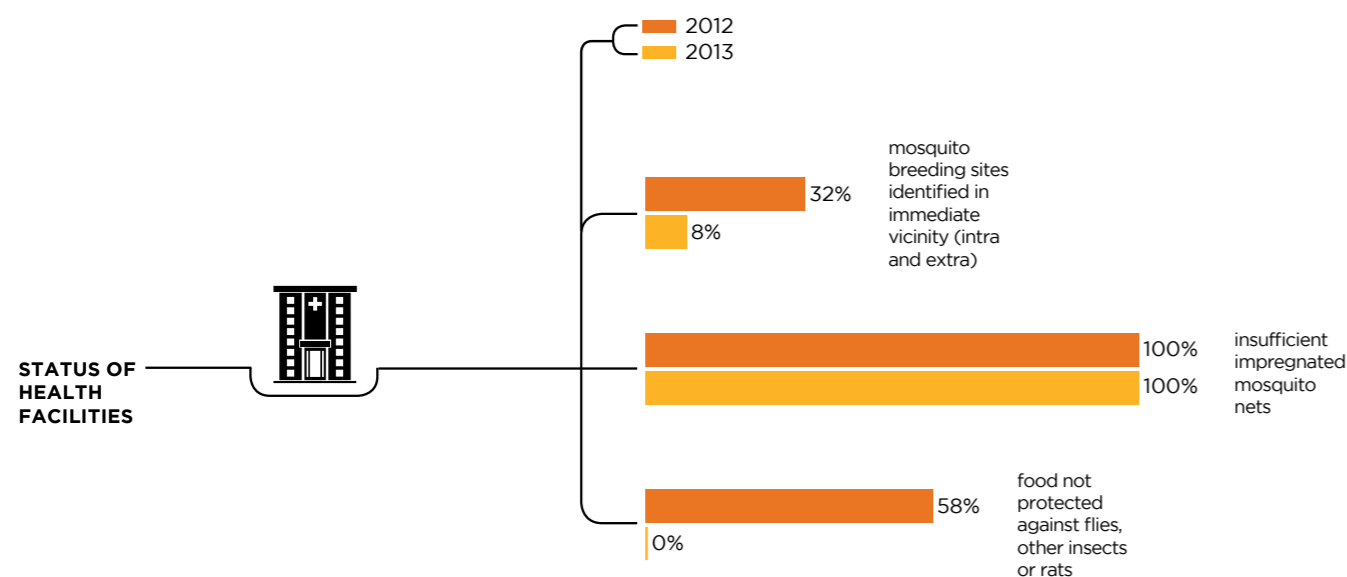
5. Infection Control and Hand Washing with Soap in Healthcare Facilities in Gao District, 2012 to 2013



By 2013 all health facilities started practicing hand washing with soap, while facilities without posters on hand washing with soap reduced from 92% to 19%

from 2012 to 2013. There was an increase of 92% in the number of facilities with provision of cleaning equipment and products (disinfectants, detergents).

4. Vector Control Practices in Healthcare Facilities in Gao District, 2012 and 2013



Health facilities with no food protection (against flies and other insects or rats) decreased from 58% in 2012 to 0% in 2013, while health facilities with mosquito breeding

sites reduced from 32% to 8% in 2013. In relation to the deficiencies of insecticide-treated nets, the situation did not change at all between 2012 and 2013.

General Recommendations from the Survey

The following recommendations were made from the findings of the evaluation:

- Strengthen training of health workers and other actors** involved in the WHO rapid assessment tool and technical guidelines governing hygiene and sanitation;
- Continue the establishment of a sustainable system for managing biomedical waste**, including the sorting of waste;
- Strengthen infection prevention in healthcare settings** through cleaning, disinfection of premises and medical equipment, and hand washing with soap;
- Strengthen monitoring and control of the quality of water** used in health facilities;
- Educate patients and caregivers** on hygiene measures;
- Raise awareness among medical personnel** on proper procedures for hand hygiene.

Research

Countries in the WHO African Region are undertaking some operational research to generate evidence, contribute to and facilitate evidence-based policy and strategic decision and implementation. The topics on which research activities were implemented include the following:

(1) Malaria Decision Analysis Support Tool: Evaluating Health, Social and Environmental Impacts and Policy Trade-offs

The Malaria Decision Analysis Support Tool (MDAST) research project was implemented during 2010-2012. The aim of the project is to promote evidence-based, multisectoral malaria control policy making in three African countries, serving as a pilot for other malaria-prone countries, through the use of a comprehensive framework for assessing the full range of health, social, and environmental risks and benefits associated with alternative malaria control strategies.



To achieve this goal, specific project objectives are to:

- (a) Develop a Malaria Decision Analysis Support Tool (MDAST) that jointly incorporates health, social and environmental priorities for malaria control in Kenya, Tanzania, and Uganda;
- (b) Increase capacity for evidence-based malaria control policy-making through regular use of MDAST in Kenya, Tanzania, and Uganda;
- (c) Create an agenda for policy-relevant malaria research through development of MDAST and identification of key knowledge gaps;
- (d) Clarify requirements for replication of MDAST in other malaria-prone countries around the world.

This methodology involved various activities, including stakeholder and expert consultations; conceptual modelling; policy dialogue workshops; training; information sharing; partnership building; incentive analysis; and identification of knowledge gaps and research priorities.

The project outcome was the establishment of an interdisciplinary network of practitioners and policy-makers and capacity building for research, monitoring, and analysis to make more informed decisions about alternative approaches to malaria prevention and treatment.

The project developed an approach for improving comprehensive malaria control policy formation, with an integrated decision analysis framework to guide the evaluation of alternative malaria control strategies. The framework allows the systematic analysis of sustainable malaria control strategies that are consistent with the successful implementation of the Stockholm Convention on Persistent Organic Pollutants (POPs).

The MDAST framework simultaneously considers multiple outcomes and attributes of various combinations of malaria control options, including both ecological and human health risks and benefits.

An electronic decision support tool is the most important product of the project. The tool is hosted on the website of Duke University, one of the implementing partners. More than 40 national staff were trained on the use of the tool in the project countries Kenya, Tanzania and Uganda.

(2) Demonstration of Effectiveness of Diversified, Environmentally Sound and Sustainable Interventions, and strengthening national capacity for innovative implementation of integrated vector management (IVM) for disease prevention and control in the WHO African Region.

WHO and UNEP developed and submitted a Project Identification Form (PIF) to the Global Environmental Facility (GEF) to solicit funding in order to implement the aforementioned project. Fifteen countries³⁶ were selected for implementation of the project.

The goal of this project is to strengthen national capabilities for implementation and scaling up of evidence-based, innovative, diversified and environmentally sound vector control interventions (with special emphasis on malaria) with multistakeholder participation in the context of IVM, to boost socio-economic development in the subregion. Emphasis is placed on identifying environmentally sound and effective alternatives to DDT for vector control in view of increased vector resistance leading to ineffectiveness of DDT applications in malaria vector control.

The project will automatically assist participating countries (all signatories to the Stockholm convention), to fulfil their obligations towards the Stockholm Convention by relying less on DDT, one of the original 12 POPs. It is anticipated that, lessons learnt and experiences of the three planned demonstration projects on innovative and evidence-based interventions, will serve as basis for updating the WHO guidelines on IVM.

UNEP is the implementing agency while WHO is executing the project. All the 15 countries are applying or intend to apply DDT in their malaria control programmes. Above all, they are signatories to the Stockholm Convention. GEF has approved the PIF for an overall amount of \$15,491,700. A Small Scale Fund Agreement (SSFA) has been signed between UNEP and WHO. Signing the SSFA made for the disbursement of the Project Preparatory Grant (PPG) to WHO. The Project Identification Form (PIF) is indicative of the overall project aim and direction.

WHO and UNEP, in collaboration with executing

partners (ICIPE, The London School of Hygiene & Tropical Medicine and Wits University) are developing the Full Size Project Brief (FSPB), which will be submitted to GEF soon.

(3) Malaria Vector Control: Filling the Gap between Product Development and Effective Delivery

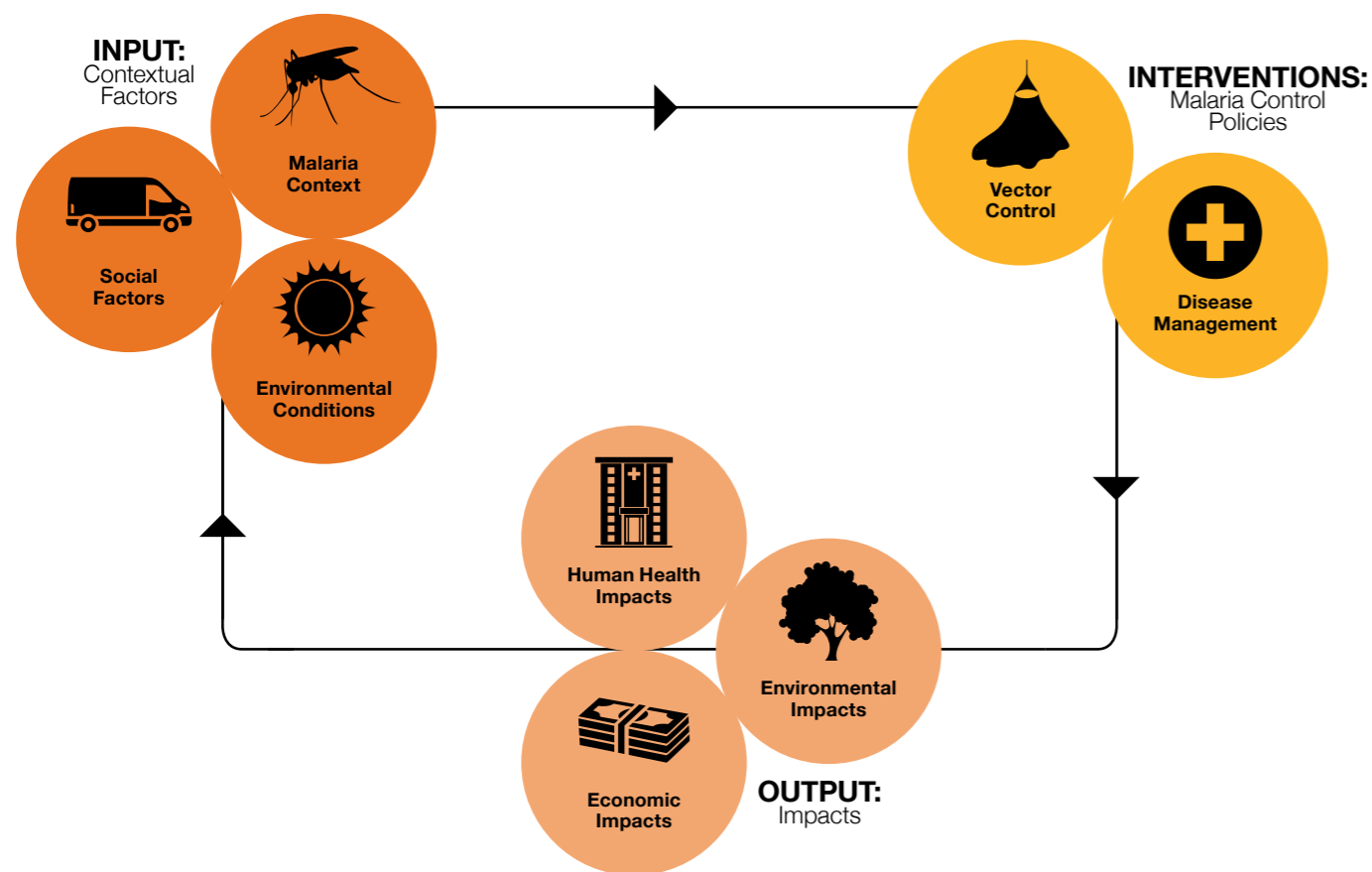
The expansion of indoor insecticide residual house spraying (IRS) and the distribution of long-lasting insecticidal nets (LLINs) led to increased vector resistance, as observed in Africa. This, in turn, contributes to accelerating the development and spread of resistance of malaria vectors and potentially jeopardizes the long-term benefit of existing and newly-developed insecticides.

The project, which was launched in February 2008, and implemented over a four-year period in Cameroon, Kenya, Madagascar, Mali, Mozambique, Senegal and Tanzania ended in December 2011.

The project objective was to strengthen national capacities for effective delivery of vector control interventions in order to safeguard the efficacy of current tools and ensure a smooth introduction of newly-developed tools into malaria control packages. Seven national reference entomology laboratories were renovated and fully equipped; more than 300 national technicians were trained in basic entomology and vector control in the seven participating countries; 20 graduate students in four countries were sponsored through the project to complete their BSc, MSc, and PhD courses. In addition, the project supported the establishment of functional sentinel sites for vector surveillance within the countries. Insectaries, equipped with vector sampling and rearing facilities, were built to facilitate and intensify vector resistance monitoring activities.

One of the most important outcomes in the area of insecticide resistance monitoring was the development of a regional database comprising over 1,909 biological assessment (bioassay) results covering 364 different sites in 30 countries. The project also contributed to formalizing and fostering collaboration among national malaria control programmes (NMCP) and national and international research institutes. Subsequently, entomology and vector control have been re-established as a core function in NMCPs. In the context of the African Network on Vector Resistance to Insecticides (ANVR), project outcomes were used to develop and update tools and methodologies to support evidence that inform malaria control in the Region.

Figure 1: Decision Analysis Framework for Comparing Alternative Malaria Control Policy Combinations



(4) Implications of Insecticide Resistance for Malaria Vector Control: a Progress Report on Epidemiology

Currently, vector control relies on two main interventions: indoor residual spraying of insecticides (IRS) and the use, at full coverage, of long-lasting insecticidal nets (LLINs).

The aim of the study, which is financially supported by the Bill and Melinda Gates' Foundation, is to determine the impact of IRS and LLIN on the malaria disease burden and malaria transmission in relation to the presence of insecticide-resistant vectors in Benin, Cameroon, Kenya and Tanzania. In order to achieve the above objectives, a set of entomological, epidemiological, demographic and economic assessments will be undertaken under operational conditions, within the context of national malaria control programmes in five countries in Africa and Asia. The study will be designed to respond to a number of operational issues. It will provide a solid basis for strengthening the capacities of countries for complex epidemiological evaluations.

(5) Groundwater Pollution Risk from Incinerated Healthcare Waste Bottom Ash at a National Teaching and Referral Hospital in Kenya

Medical waste forms 15% of hospital waste, which is considered hazardous and may be toxic or radioactive. If not properly managed, it can cause significant inconvenience and become a health risk (WHO 2011).

The aim of the study was to establish the relationship between groundwater pollution and incinerated healthcare waste bottom ash at Moi Teaching and Referral Hospital (MTRH), Eldoret Kenya. A daily batch of bottom ash from the hospital incinerator at Moi Teaching and Referral Hospital was sampled and weighed in triplicate packs of 30gs each. This was done for 30 consecutive days. Sampling was done in November, 2008. Similar samples were taken from an abandoned ash pit for comparison with results.

The incinerator under study had heavy metal concentrations; the total chromium, cadmium, lead, silver and mercury in the bottom ash was 3,870, 250, 4,340, 1,360 and 40 mg/kg respectively, that exceeded the maximum levels specified by the National Environmental Management Agency and United States Environmental Protection Agency. Disposal of the incinerator bottom ash at MTRH was done in unlined pits, without taking into account environmental pollution.

This was a groundwater pollution risk, with high concentrations of heavy metals traced in the bottom ash of the hospital's incinerator. The concentration of total chromium, cadmium, lead silver and mercury in the excavated pit ash and the abandoned pit ash were 5,200, 130, 3,280, 170 and 3 mg/kg, which were higher than the maximum allowable limits for ordinary disposal in the environment. The same pollutants were found to be leaching from the ash and permeating along the excavated ground profile with a risk of polluting groundwater sources.

(6) Population Health Vulnerabilities to Vector-Borne Diseases: Increasing Resilience under Climate Change Conditions in Africa

Control strategies for vector-borne diseases (VBD) are a pillar of public health policies. VBDs, associated with water systems, are a significant burden in dry-land areas of sub-Saharan Africa, which already suffers from poverty, food insecurity, ecological fragility and social vulnerability. Potential impacts of VBD-related risks reflect environmental exposure as well as social vulnerabilities, both of which are sensitive to climatic conditions.

The UNICEF, UNDP, World Bank and WHO Special Programme for Research and Training in Tropical Diseases (TDR) has created a Vector, Environment and Society (VES) Unit to foster implementation research to develop and evaluate innovative and improved vector control methods and strategies under environmental and climate change conditions. Moreover, the new unit aims at exploring optimal ways to engage different types of communities in the delivery and scale-up of interventions for the control of major VBDs and other poverty-related diseases.

This research focuses on population health and climate change adaptation strategies in relation to VBD risks (and other diseases of poverty) in African social-ecological systems affected by dry-land ecologies and integrated water systems (rivers, lakes, rain-fed systems, irrigation schemes). The research is being conducted in Botswana, Côte d'Ivoire, Mauritania, Kenya, South Africa, Tanzania, and Zimbabwe.

The main objective is to contribute to reducing population health vulnerabilities, while enhancing resilience against VBD risks under climate change conditions in Africa. This programme is expected to yield new knowledge, research capacity, collaboration and policy advice products to support African countries to build adaptation capacities to VBD risks under climate change conditions.

2.3 MAJOR PUBLICATIONS

- (a) Henk van den Berg, Morteza Zaim, Rajpal Singh Yadav, Agnes Soares, Birkinsh Ameneshewa, Abraham Mnzava, Jeffrey Hii, Aditya Prasad Dash, and Mikhail Ejov. (April 2012). Malaria Decision Analysis Support Tool (MDAST): Evaluating Health, Social and Environmental Impacts and Policy Trade-offs. Global Trends in the Use of Insecticides to Control Vector-Borne Diseases.
- (b) Zachary Brown, Randall Kramer, Clifford Mutero, Dohyeong Kim, Marie Lynn Miranda, Birkinsh Ameneshewa, Adriane Lesser, Christopher J Paul. (October 2012). Stakeholder development of the Malaria Decision Analysis Support Tool (MDAST). Malaria Control: Filling the Gap between Product Development and Effective Delivery.
- (c) Reducing Health Risks through Sound Management of Pesticides. Project report. 2013.
- (d) Malaria Decision Analysis Support Tool: Evaluating Health, Social and Environmental Impacts and Policy Trade-offs Project Report.
- (e) The Africa Regional Framework on Climate Change Adaptation for the Health Sector (resolution AFR/RC61/R2).
- (f) Adaptation to Climate Change in Africa: Plan of Action for the Health Sector 2012-2013 (April 2012).
- (g) Framework for the African Programme to Reduce Chemical Risks to Health and the Environment in Africa.
- (h) Climate Change and Health Communication Strategy, WHO Regional Office for Africa, 2013.

C ONCLUSION



In the African Region, the general population continue to suffer from environment-related diseases, mostly in the sub-Saharan region. The above health situation will be exacerbated by climate change. This report has highlighted progress accomplished by WHO in strengthening the policy framework, the strategic agenda and important outcomes.

Despite the achievements recorded, effective implementation has been hampered by a number of challenges. These include a perceived lack of evidence and communication about climate change and health; an array of institutional barriers; lack of integrated approaches; perceived lack of fundable proposals; lack of technical capacity and lack of

country-level political commitment.

As has been highlighted, issues such as preventing land degradation and unsustainable water use; sustainably managing natural resources; and protecting the natural resource base, including biodiversity of environmental protection continue to influence health outcomes. All these issues are highly interdependent and a holistic approach is needed to address them.

Building a strategic alliance between health and environment is the way forward. In the coming biennium, efforts should focus on operationalizing the Health and Environment Strategic Alliance (HESA) and Country Task Teams (CTTs).

FUTURE PERSPECTIVES



WHO is going through a transformation process to be better equipped to address the increasingly complex challenges of the health of populations in the 21st century. The 12th General Programme of Work will provide the strategic overview for the Organization during the period 2014-2019, and subsequent biennial programme budgets.

As part of the reform process, WHO is working together with its Member States to set priorities for its work in order to re-focus its activities and deliver more effectively. To date, Member States have reached consensus on a set of distinct categories of work for WHO (communicable diseases; non-communicable diseases; promoting health through the life course; health systems and preparedness; surveillance and response) and has defined criteria that will guide the process of setting the Organization's priorities.

The new categories of work provide a broader organizing framework for WHO, and will allow greater flexibility in allocating resources to priorities within these categories. Health and the environment was considered a priority under "promoting health through the life course" category.

Furthermore, the document from the United Nations Conference on Sustainable Development (Rio+20) entitled "The Future We Want", underlined the political commitment for promoting sustainable development. It has called upon national governments

and development partners to further strengthen and consolidate their efforts to effectively integrate the economic, environmental and social dimensions in their developmental policies and strategies, and has recognized their inter-linkages so as to achieve sustainable development.

It has further highlighted some of the key measures that need to be taken at the national, regional and global levels to address key economic, environmental and social challenges. The Libreville Declaration on Health and Environment in Africa, 2008, therefore appears today as one of the key strategic instruments to deliver the Rio+20 Flagship Programme in Africa.

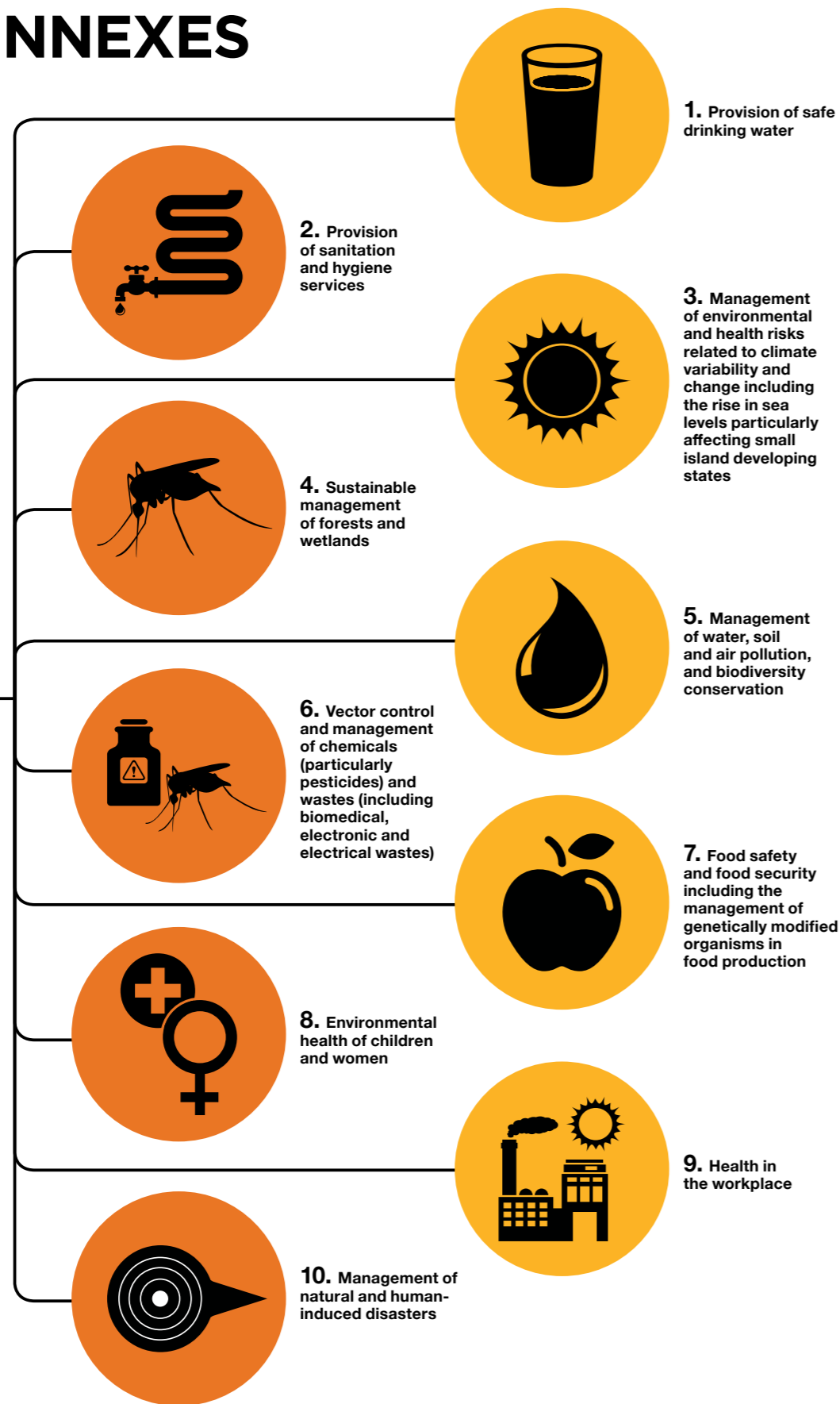
The focus of the WHO Biennial Programme 2014-15 will be to provide guidance and technical support to Member States of the WHO African Region to formulate, implement, monitor and evaluate policies, strategies and action plans that are effective in addressing health and environment linkages, with a view to achieving the MDGs and in the context of the Libreville Declaration on Health and Environment in Africa.

In the post-2015 agenda, environmental sustainability is one of the four core dimensions where progress will be needed in coming years and decades in order to build a rights-based, equitable, secure and sustainable world for all people. Ensuring people's right to health, including through universal access to quality health services, is vital for inclusive social development and should be a critical element of the post-2015 vision.

ANNEXES

ANNEX 1

LUANDA COMMITMENT: AFRICA'S HEALTH AND ENVIRONMENT PRIORITIES



ANNEX 2

STATUS OF POLICY FRAMEWORK PROCESS

Finalized SANA	Begun the SANA Process	Have not started the SANA Process	Finalized NPJA	Finalized intersectoral action reports
<ol style="list-style-type: none"> 1 Angola 2 Botswana 3 Benin 4 Burundi 5 Cameroon 6 Comoros 7 Congo 8 Democratic Republic of Congo 9 Côte d'Ivoire 10 Equatorial Guinea 11 Eritrea 12 Ethiopia 13 Gabon 14 Gambia 15 Ghana 16 Guinea 17 Kenya 18 Lesotho 19 Madagascar 20 Mali 21 Mauritius 22 Mozambique 23 Namibia 24 Niger 25 Nigeria 26 Rwanda 27 Sao Tome and Principe 28 Senegal 29 Seychelles 30 Sierra Leone 31 South Africa 32 Swaziland 33 Tanzania 34 Togo 	<ol style="list-style-type: none"> 1 Zambia 2 Uganda 3 Mauritania 4 Algeria 5 Zimbabwe 6 Guinea Bissau 	<ol style="list-style-type: none"> 1 Burkina Faso 2 Central African Republic 3 Chad 4 South Sudan 5 Cape Verde 6 Liberia 7 Malawi 8 Seychelles 	<ol style="list-style-type: none"> 1 Cameroon 2 Gabon 3 Kenya 4 Madagascar 5 Mali 6 Ethiopia 7 Botswana 8 Tanzania 9 Congo 10 Ghana 11 Democratic Republic of Congo 12 Republic of Congo 	<ol style="list-style-type: none"> 1 Kenya 2 Gabon 3 Mali 4 Ethiopia 5 Cameroon 6 Congo 7 Democratic Republic of Congo 8 Republic of Congo

R

EFERENCES AND FOOTNOTES

1. Angola, Benin, Burkina Faso, Burundi, Cameroon, Central African Republic, Chad, Congo, Côte d'Ivoire, Democratic Republic of the Congo, Eritrea, Ethiopia, Gabon, Gambia, Ghana, Guinea, Guinea Bissau, Kenya, Lesotho, Liberia, Madagascar, Mali, Mauritania, Mozambique, Niger, Nigeria, Rwanda, Senegal, South Sudan, Sierra Leone, Tanzania, and Togo.
2. Burundi, Comoros, Djibouti, Eritrea, Ethiopia, Kenya, Madagascar, Malawi, Mauritius, Mozambique, Rwanda, Seychelles, Uganda, United Republic of Tanzania, Zambia, Zimbabwe.
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4. WHO 2013. World Malaria Report.
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6. Medium-term Strategic Plan 2008–2013.
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8. Angola, Cameroon, Congo, Democratic Republic of the Congo, Eritrea, Ethiopia, Ghana, Lesotho, Madagascar, Mali, Mozambique, Sierra Leone, and Tanzania.
9. Benin, Botswana, Burundi, Nigeria, and Seychelles.
10. Comoros, Gambia, Guinea, and South Africa.
11. 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).
12. Cameroon, Ethiopia, Gabon, Kenya, Mali, Sierra Leone.
13. WHO, 2011. Framework for Public Health Adaptation to Climate Change. Document AFR/RC61/PSC/8.
14. Benin, Botswana, Burundi, Comoros, Ethiopia, Madagascar, Malawi, Mozambique, Namibia, Niger, Rwanda, Sao Tome & Principe, Senegal, South Africa, Tanzania, Togo, Uganda, Zambia, Zimbabwe.
15. Cameroon, Gambia, Kenya, Madagascar, Mali, Mozambique, Sierra Leone and Tanzania.
16. The countries involved are Cape Verde, Central African Republic, Guinea, Lesotho, Mauritania, Mozambique, Niger, Nigeria, Tanzania and Uganda.
17. Ethiopia, Gambia, Madagascar, Mauritius, Mozambique, Namibia, Senegal, South Africa, Swaziland and Zambia.
18. <https://vula.uct.ac.za/portal>
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21. Angola, Botswana, Burundi, Cap Verde, Equatorial Guinea, Eritrea, Ethiopia, Gambia, Ghana, Kenya, Lesotho, Liberia, Malawi, Mauritius, Mozambique, Namibia, Nigeria, Rwanda, Seychelles, Sierra Leone, South Africa, Swaziland, Uganda, Tanzania, Zambia and Zimbabwe.
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