World Health Organization
REGIONAL OFFICE FOR **Africa**

THE WHO STRATEGIC PLAN FOR HEALTH AND ENVIRONMENT IN THE AFRICAN REGION
2006–2009

Brazzaville, Republic of Congo
2005

CONTENTS

ABBREVIATIONS

AfDB	African Development Bank
AIDS	acquired imumnodeficiency syndrome
ANVR	African Network on Vector Resistance
CAH	Child and Adolescent Health
CCS	Country Cooperation Strategy
CEH	Children's Environmental Health
CGIAR	Consultative Group on International Agricultural Research
COMBI	Communication for Behavioural Impact
CRD	Communicable Disease Research and Development
DALY	disability-adjusted life year
DDT	diclorodiphenyltrichloroethane
EHA	Emergency and Humanitarian Action
EHIA	Environment and Health Impact Assessment
EHP	Environment Promotion of Health
EIM	Environment Information Management
ERA	Environmental Risk Assessment
ESH	Environment Surveillance for Health
FAO	Food and Agriculture Organization
FOS	Food safety
GBD	Global Burden of Disease
GEF	Global Environment Facility
GPA	Global Plan of Action of the SAICM
GTZ	German Technical Cooperation Agency
HAC	Humanitarian Action in Crisis
HEIMS	Health and Environment Information Management System
HELI	Health and Environment Linkages Initiative
HIV	human immunodeficiency virus
HRH	Human Resources for Health
HPR	Health Promotion
HQ	Headquarters of the WHO
HSP	Health Systems Policies and service delivery
IAP	Indoor Air Pollution
IDRC	International Development and Research Centre
ILO	International Labor Organization
IRS	indoor residual spraying
ITN	insecticide-treated nets
IVD	Immunization and Vaccine Development
IVM	Integrated Vector Management
IWMI	International Water Management Institute
IWRM	Integrated Water Resource Management
NEPAD	New Partnership for Africa's Development
NGO	nongovernmental organization
MAL	Malaria
MDG	Millennium Development Goal
OCH	Occupational Health
PCS	Programme on Chemical Safety
PHAST	Participatory Hygiene And Sanitation Transformation
PHE	Health and Environment Protection

POP	Persistent Organic Pollutant
RBM	Roll Back Malaria
REC	regional economic community
SAICM	Strategic Approach to International Chemical Management
SDE	Sustainable Development Cluster of the WHO
SIMA	System-wide Initiative on Malaria and Agriculture
UN	United Nations
UNEP	United Nations Environment Programme
UNICEF	United Nations Children's Fund
UNIDO	United Nations Industrial Development Organization
VBC	Vector Biology and Control
WCC	WHO collaborating centre
WCO	WHO Country Office
WHA	World Health Advisory
WHO	World Health Organization
WMC	WHO Mediterranean Center for Vulnerability Reduction
WSH	Water Sanitation and Health
WSP	Water Safety Plan

EXECUTIVE SUMMARY

The global burden of disease measured by the loss of disability-adjusted life years per 1000 people is heaviest in the sub-Saharan Region with 538. This is mainly due to preventable communicable diseases including malaria, diarrhoea, vaccine preventable diseases, respiratory infections and HIV/AIDS. The lack of attention to primary health care services, particularly preventive measures, adds to this situation. In sub-Saharan Africa, an estimated 28% of the total disease burden would be preventable by environmental modifications.

By adopting the Regional Strategy for Environmental Health in 2002 countries of the WHO African Region have recognized gaps in policies, lack of institutional arrangements, a deficient evidence base and insufficient human resources competencies as obstacles to the adequate implementation of environmental health interventions. The strategy provides clear guidance for Member States to reduce or eliminate environmental risks to human health. Since its adoption, important steps have been taken towards implementation at country level. However, activities as currently planned and implemented by the various countries are unlikely, within a meaningful timeframe, to lead to significant progress towards the achievement of the Millennium Development Goals (MDGs).

The present four-year strategic plan (2006–2009) is proposed to intensify and accelerate ongoing processes and to further guide the practical implementation of WHO strategic orientations for the African Region for the 2005–2009 period. It seeks to focus on those environmental health issues that reflect important public health problems in Member States, and on solutions to which WHO, organization-wide, can contribute with a comparative advantage.

The general objective of the strategic plan is to contribute to the achievement of safe, sustainable and health-enhancing human environments, protected from biological, chemical and physical hazards, and secure from the effects of global and local environmental threats. The specific objectives are:

(i)   to facilitate the implementation of the Regional Strategy for Environmental Health as well as the strategic orientations for the WHO African Region (2006–2009) by supporting effective incorporation of health and environment dimensions into national policies and regulatory frameworks, and strengthening national capacities for planning, implementation, monitoring and evaluation of health and environment interventions and,

(ii)   to facilitate an adequate contribution of the health sector into the implementation of health-related matters of the international agenda for the protection of health and human environment.

The above objectives will be achieved through intensification of priority interventions that include: development of comprehensive national health and environment policy and institutional frameworks; capacity building, advocacy and social mobilization; assessing and managing risks factors, providing outreach and integrated delivery of interventions and conducting research. A close monitoring and evaluation of progress will allow timely and effective re-adjustment of activities in the context of WHO biennial work-plans. Successful implementation of this strategic plan will largely depend on how best proposed activities will be mainstreamed in the work of other relevant areas of work across the organization, and on the ability of the health and environment area of work to consolidate its collaboration with other entities at all levels, within and outside the organization.

1.   INTRODUCTION

Environmental conditions, whether affected by global change or within a local setting, are a major determinant of human health. In developing countries, exposure to modern forms of urban, industrial and agrochemical pollution aggravates the burden of disease stemming from traditional health risks within the household and community. A major challenge remains in breaking the vicious cycle that links poverty, environmental degradation and ill health, along with redressing the continuing inequities related to gender and economic development.

Countries of the WHO African Region have recognized gaps in policies, lack of institutional arrangements, a deficient evidence base and insufficient human resources competencies as obstacles to the adequate implementation of environmental health interventions to address the above issues. It is in this context that in 2002 the fifty-second Session of the Regional Committee adopted the Regional Strategy for Environmental Health (Resolution AFR/RC52/R3). This strategy provides clear guidance for Member States to reduce or eliminate environmental risks to human health.

Since its adoption, important steps have been taken towards implementation at country level: a situation analysis for occupational health has been completed, perspectives proposed and endorsed by Member States (Resolution AFR/RC54/R4); a number of countries have been supported to develop national policies for environmental health; specific initiatives related to the promotion of the healthy settings approach and children's environmental health are being implemented. Finally, the remit of the Health and Environment Unit at the Regional Office has been broadened and its capacity strengthened to cover aspects related to vector ecology and management.

Environmental health concepts have been broadened to better reflect the multiple interfaces between environment and health. In this context, the global agenda of the eleventh General Programme of Work of the WHO (2006–2015) is geared *inter alia* towards universal coverage and healthier environments. The strategic orientations for WHO action in the African Region for 2005–2009 translate these aspects in orienting the work of the regional office to target the reduction of environmental health risk factors as one of the priorities. This strategy is geared towards the development of multi-sector interventions, comprehensive approaches that target several determinants and the establishment of mechanisms to ensure that the health sector takes full advantage of opportunities existing under international conventions, particularly those related to the protection of human environment. However, activities as currently planned and implemented by the various countries are unlikely to lead within a meaningful timeframe to significant progress towards the achievement of the MDGs. In general and so far, health and environment actions appear to be under-represented in country workplans (as judged for example by the fractional contribution to preventable disease burden), and the African Region is an extreme case amongst WHO regions in that "normative" work must be supplemented by substantive work towards support to implementation.

The present four-year strategic plan (2006–2009) is proposed to intensify and accelerate ongoing processes and to further guide the practical implementation of WHO strategic orientations for the African Region for 2005–2009. It seeks to focus on those environmental health issues that reflect important public health problems in Member States, and on solutions to which WHO, organization-wide, can contribute with a comparative advantage.

2.   BACKGROUND AND SITUATION ANALYSIS

The global burden of disease (GBD) measured by the loss of disability-adjusted life years (DALYs) per 1000 people, is heaviest in the sub-Saharan Region with 538 as compared to Latin-America and Caribbean 190, Asia 387, the Eastern Mediterranean 277 and the most developed regions with 127 DALYs per 1000 people. This is mainly due to preventable communicable diseases such as HIV, diarrhoea, vaccine preventable diseases, malaria and respiratory infections, but also injuries and various non-communicable diseases. The lack of attention to primary health care services, particularly preventive and health promotion adds to this situation. In sub-Saharan Africa, an estimated 28% of the total disease burden would be preventable by environmental modifications, and as much as 40% of the burden in children between 0 and 4 years.

In Africa, political, legislative and institutional barriers to improving environmental conditions are numerous. The public-health impact of different policy options needs to be properly assessed to allow for action upstream. The cost to the health system of diseases attributable to environmental exposures needs to be estimated. Human resources need to be adequately trained in risk assessment and management, and public participation needs to be mainstreamed in all environmental health processes as appropriate. National and local health authorities are often ill-prepared to negotiate and make joint decisions with other socioeconomic sectors where health-protective measures need to be taken.

The spread of unplanned, poorly constructed urban settlements around African cities, often in unsuitable locations, not only impacts negatively on health but also undermines social values. These urban slums put pressure on the environment and on the scanty infrastructures provided. This leads to overloading of the system and threatens the health of the residents, particularly children. Peri-urban zones present a complex mosaic of rural and urban risks factors and often fall outside the jurisdiction of municipal authorities.

Diarrhoea and acute respiratory infections are two of the top killers of children and under-fives. Water-related and vector-borne diseases such as malaria, schistosomiasis, filariasis and river blindness are the cause of high morbidity contributing negatively to the economy and the health sector. Infectious diseases linked to poor environmental conditions kill one out of every five children in Africa. Cholera is endemic in at least a dozen of the countries in the region.

Africa continues to have a huge and untapped water resources potential, and evidence thus far points to the imperative need for health impact assessment of water resources

development projects. The most up to date information of the WHO/UNICEF Joint Monitoring Programme for Drinking-water and Sanitation (2002) indicates that an estimated 288 million people in sub-Saharan Africa still lack access to improved drinking-water (42%) and 437 million people lack access to basic sanitation (64%). Considerable progress has been made since 1990 to improve access to drinking-water, raising coverage from 49% to 58% in 2002. Progress in sanitation was significantly lower with an increase in coverage from 32% in 1990 to only 36% in 2002. In the global picture, Africa continues to lag behind other regions and is unlikely to meet the drinking-water and sanitation targets set by the Millennium Development Goals (MDGs).

While concerns over air pollution levels in African urban centres are growing, the major burden of disease continues to be linked to indoor air pollution (IAP). Women and children are particularly vulnerable. The burden of disease due to indoor air pollution is of global importance. Yet, in Africa, the situation is further aggravated by overcrowding, poorly ventilated houses, and the use of biomass and kerosene. This has resulted in an increased burden of disease with children under the age of five exposed to higher levels of IAP and likely to suffer more from acute lower respiratory infections than those with less exposure.

Chemical substances have generally brought about progress in the socio-economic status of nations and the well-being of people. In the African Region, these chemical substances are used in production processes (agriculture, construction, mines, and some cottage industries) and in homes, with little or no understanding of their immediate or long-term effects. Their mismanagement leads to a significant burden of injury, ill-health and mortality. Inappropriate disposal in the context of poor waste management practices, including the waste from health facilities, further exacerbates the situation.

There is growing evidence that climate change contributes to a significant increase in the burden of disease. Impacts include an expansion in health hazards and extreme weather events such as heat waves, floods or droughts. It leads to changing patterns in vector-borne disease distribution particularly malaria, schistosomiasis and dengue fever. And finally, essential environmental health services and basic sanitary installations are often disrupted or devastated as a consequence of conflict or environmental disasters.

Over the past few years, the African Regional Office of the WHO has increased its support to countries in the development of policies and programmes for implementation of health and environment interventions (healthy settings, impact and risk assessment, occupational health, improved access to safe drinking-water, health care waste management and disease vector control). To this end, WHO has worked closely with partners among United Nations and other development agencies (UNEP, ILO, FAO, UN Water, GEF, World Bank etc.). Some of the collaborative UN agency frameworks, such as UN water (24 UN agencies with a stake in water issues) will need to be set into motion in the African Region. Capacities of countries in the protection of human health have been strengthened through education, training and information sharing. Designated WHO collaborating centres have been used in research and capacity building. This network will have to be further strengthened. A

programme to focus on children's health and environment priorities has been initiated and implemented.

Although some progress has been achieved, there are still major challenges and obstacles that include: lack of efficient health and environment information management systems, inadequate institutional capacity (human, financial and material resources) to respond to increased risk factors using the existing cost-effective interventions, inadequate planning and coordination at the country level, ineffective multi-sectoral cooperation, conflicts and natural disasters.

Nevertheless, opportunities exist to increase the profile of environmental health issues in the development. Countries currently require support from WHO to implement a range of interventions. A next generation of WHO Country Cooperation Strategies (CCSs); Poverty Reduction Strategic Papers; increased commitments to achieve the MDGs, International Conventions of the environment with their associated financial and technical assistance to developing countries, can help to better articulate health and environment issues in country action plans.

Figure 1: Top 10 health and environment activities selected by countries requiring WHO technical cooperation, 2006–2007
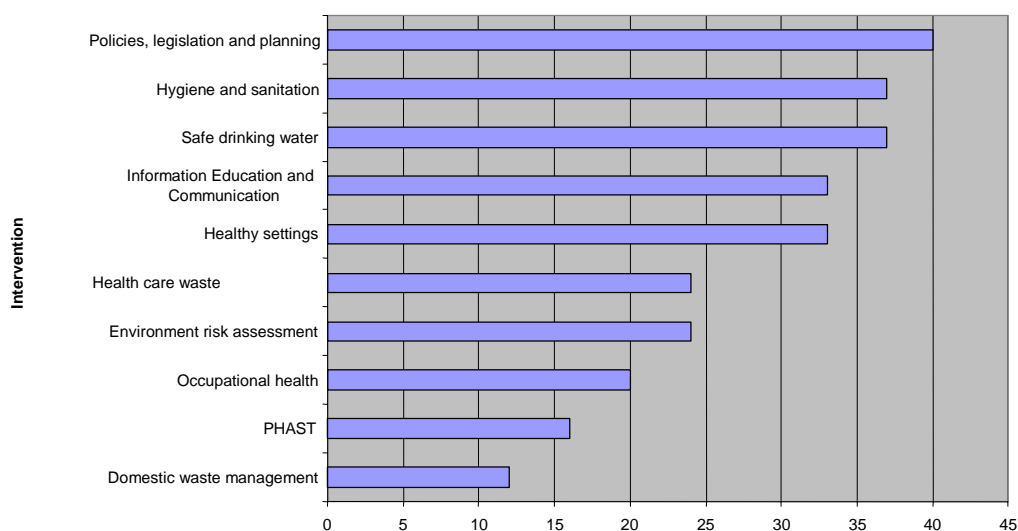
3.   POLICY BASIS

Throughout the history of WHO, the constitution and the policy framework formulated by World Health Assembly Resolutions have provided an enabling environment for environmental health activities.

The importance of environmental health and sanitation was re-affirmed by the Alma-Ata Declaration (1978), which marked a critical policy shift in health care delivery systems, away from vertical programmes. This seminal policy document also contained many of the key guiding principles that would support a renewed emphasis on environmental health issues, such as intersectoral action for health and community participation.

The main paradigm shift for environmental health policy resulted from Agenda 21, the blueprint for sustainable development in the 21st century, adopted at the UN Conference on Environment and Development in 1992. Not only does Agenda 21 place the human being at the centre of development, with entitlements to a healthy and productive life in harmony with nature, but Chapter Six of its preambular section addresses health explicitly and exclusively. Five main human health issues were highlighted as follows:

- meeting primary health care needs, particularly in rural areas;
- control of communicable diseases;
- protecting vulnerable groups;
- meeting the urban health challenge;
- reducing health risks from environmental pollution and hazards, including chemical safety (WHA Resolution 50.13).

WHO developed, first at headquarters and subsequently at Regional Office level, its policy framework for the first decades of the 21st century, based on the report *Our Planet, Our Health*, the result of extensive work by the WHO Commission on Health and Environment. The conclusions of this report were unanimously adopted by the World Health Assembly. The resulting health and environment vision maintained focus on establishing environmental standards and norms, managing the environmental determinants of health, minimizing health risks and contributing to the reduction of the burden of disease in the population and the burden on the limited resources of the curative health services. This is of particular value for the WHO African Region, where much of the disease burden can be attributed to environmental factors.

Since 1992, health has received a high profile in various global environmental conventions, some of which function as international, legally binding instruments.[1]

---

[1] The UNDP-sponsored Vienna Convention on the Protection of the Ozone Layer (1985) and the Montreal Protocol on substances that deplete the ozone layer (1987); the Basel Convention on the control of trans-boundary movements of hazardous wastes and their disposal (entry into force 1992), the Rotterdam Convention on the prior informed consent procedure for certain hazardous chemicals and pesticides in international trade (entry into force 2004); and, the Stockholm Convention on the elimination of production and use of persistent organic pollutants (entry into force 2003).

Efforts continue to better mainstream health in the conventions, as demonstrated by the evolving Strategic Approach to International Chemical Management (SAICM) for which WHO may become part of the Secretariat.

In an unprecedented gathering of 170 heads of state in 2000 in New York, eight Millennium Development Goals were agreed upon, three of which are exclusive health goals, while health is an explicit cross-cutting issue in others. Under each MDG, targets have to be achieved by 2015. One target under MDG 7, to halve, by 2015, the proportion of people that lack sustainable access to safe drinking-water (subsequently extended to also include access to adequate sanitation) is of direct relevance to WHO's environmental health efforts, more so because the WHO/UNICEF Joint Monitoring Programme has been formally designated to carry out the monitoring of progress towards achieving these targets.

The subsequent 2002 World Summit on Sustainable Development built on the MDG momentum. Clearly, environmental health emerged as the bridging mechanism of the health sector to fill in the gap from other sectors. This indicates the need for environmental health to strengthen its normative and regulatory capacities while maintaining and improving its operational capacities.

Meanwhile, at the level of the WHO African Region, a health-for-all policy for the 21st century was adopted that emphasized, *inter alia*, the need to strengthen the health sector's credibility with other sectors in order to improve intersectoral action, and the evidence base for the poverty–environment–health nexus. The Regional Strategy for Environmental Health sums up the way forward (Resolutions AFR/RC52/R3 and AFR/RC54/R4).

This review of the policy basis for the Regional Office Strategic Plan for Health and Environment would not be complete without highlighting the relevance of health promotion policies and their strong links with environmental health policies. A renewed policy framework for health promotion (the Bangkok Charter on Health Promotion in a Globalized World) was adopted by an international conference in Bangkok in August 2005. It reiterates policy support to the healthy settings approach and to the environmental health contributions in its context as well as to health impact assessment of development and environmental management in support of health.

WHO Country Cooperation Strategy plays a key role in this connection, as it allows Member States to identify their specific environmental health needs and include relevant capacity building and technical cooperation action in their national plans.

4. OBJECTIVES AND EXPECTED RESULTS

4.1. General Objective

The general objective of the strategic plan is to contribute to the achievement of safe, sustainable and health-enhancing human environments, protected from biological, chemical and physical hazards, and secure from the effects of global and local environmental threats.

4.2. Specific Objectives

The specific objectives are:

a) To facilitate the implementation of the Regional Strategy for Environmental Health as well as the strategic orientations for the WHO African Region (2006–2009) by:

    (i) Supporting effective incorporation of health and environment dimensions into national policies and regulatory frameworks, and,

    (ii) Strengthening national capacities for planning, implementation, monitoring and evaluation of health and environment interventions.

b) To facilitate an adequate contribution of the health sector into the implementation of health-related matters of the international agenda for the protection of health and human environment.

4.3. Expected Results

a) It is expected that the Regional Strategy for Environmental Health and the strategic orientation for the WHO African Region be adequately implemented at country level.

b) At national level, the health sector will be expected to fully play its role in the implementation of international conventions related to the protection of health and the human environment.

5. GUIDING PRINCIPLES

The implementation of the Health and Environment Strategic Plan will be guided by the following principles:

a) *Country focus*: Country-based activities will be the focus of this strategic plan. Therefore, activities and interventions will be designed to yield results at community level. A menu of health and environment options will be offered to Member States based on Country Cooperation Strategies (CCSs) and their related workplans.

b) *Community participation*: The above will only function if communities themselves perceive direct value in interventions that will be proposed. Therefore, their needs will guide action at local level.

c) *Decentralization*: Decentralization of environmental health services should ensure that environmental health functions are reflected in budget allocations and that staff at provincial and district level are used to perform essential environmental health functions only.

d) *Health protection*: Interventions will be implemented with a view to protection health. Collaboration with disease prevention and control programmes will be key to embedding environmental health interventions in their strategies and actions.

e) *Integration*: There are multiple key environmental determinants of health that are closely related. Interventions will aim at tackling several of these determinants in an integrated manner.

f) *Cross-sector collaboration*: Health and environment issues relate to multiple development sectors. Cross-sector management mechanisms are the only way to address these issues effectively and in a sustainable fashion.

6.   PRIORITY INTERVENTIONS

Priority interventions recommended by the regional strategy will be packaged as follows:

(i)   Developing Comprehensive National Health and Environment Policy and Institutional Frameworks;

(ii)   Capacity Building, Advocacy and Social Mobilization;

(iii)   Assessing and Managing Risks Factors;

(iv)   Outreach and Integrated Delivery of Interventions, and

(v)   Research

6.1.   Developing Comprehensive National Health and Environment Policy and Institutional Frameworks

Undertaking a process of policy formulation, review, adjustment and harmonization

Various international initiatives, global and regional resolutions have provided the African Member States with a basis and with incentives to develop national environmental health policies and strategies. At present, the regional landscape of these policies is heterogeneous reflecting diverging processes as well as a range of responses to different country-specific needs.

WHO will support national harmonization of relevant policies in the health and environment sectors, extending health concerns into the policies of other sectors and promoting a process of periodic policy review and adjustment. This will ensure that the others have the capacity to respond to new realities, international obligations, new information and technological advances. WHO will support policy analysis and formulation, using standardized guidelines and tools. To this end, WHO will identify experts in matters related to environmental health and policy development, and will properly brief them on the guidelines and other tools to support the above process. Similarly, relevant WHO collaborating centres (WCCs) will receive briefing packages

and their services will be requested on an as-needed basis. They will constitute the necessary pool from where expertise will be drawn to satisfy country demand.

Support for the preparation of national strategic plans for health and environment

Countries reviewing and updating their policies will need implementation frameworks in the form of strategic plans for health and environment. The process for developing these implementation frameworks will articulate the following main steps:

(i)   strengthening or creation of national multi-sectoral working arrangements;

(ii)   national strategic planning workshops and,

(iii)   adoption of the strategic plans by the relevant ministers.

Health and environment is fundamentally multi-sectoral area. Ministries of health, environment, water, education, economy, agriculture, housing, local government, industry etc. will have to work together in order to coordinate their actions more efficiently.

WHO will develop guidelines for preparation of national strategic plans for health and environment. The pool of experts identified at regional level will be made available to countries to develop national strategic plans. In this process, WHO will provide technical support to countries to identify all essential stakeholders and to facilitate the planning process.

Provision of support to establish effective regulatory mechanisms

Through the development and enforcement of regulations, environmental health programmes can achieve a multiplier effect in their impact on environmental health issues and the reduction of the disease burden. In most countries, rudimentary regulatory frameworks exist, particularly at the municipal level, and health inspectors or sanitary engineers, who may be neither well qualified nor motivated, may be responsible for their enforcement.

WHO will provide technical support to countries to update and harmonize existing national and local regulatory frameworks. For this purpose, WHO will use the available regional expertise to provide back-stopping to countries for comprehensive review and update of existing regulations, such as Public Health Acts and for their alignment with other existing health policies.

6.2.   Capacity Building, Advocacy and Social Mobilization

Institutional capacity building

Development decision-making outside of the health sector often has inadvertent repercussions on people's health status through the changes they induce in environmental determinants. In many interested sectors there are specific units/departments with health and environment responsibilities. Yet, it is also true that in most countries, setting up effective functional and sustainable intersectoral coordination mechanisms remains one of the biggest and most elusive challenges for the design and/or management of health and environment interventions. Full advantage should be taken from the existing arrangements and from the multi-sector

committees that exist for policy and planning processes, in order to play a more active and critical role for the coordination of implementation as well. These structures are particularly important to articulate requirements and obligations of international conventions more comprehensively. In terms of human capacity, two key areas need to be addressed: strengthen programme management and delivery, and, enhance the link between district management and provision of an essential package of interventions to tackle health and environment issues.

WHO will develop technical guidelines and provide the necessary expertise to help countries for the establishment and strengthening of multisectoral coordination committees. WHO will support countries to undertake a quantitative and qualitative human resource needs assessment. Based on the assessment results, WHO will develop for the region, a capacity development plan and identify training institutions that will help to speed up capacity building activities. Technical support will be provided to countries to strengthen district level planning for health and environment interventions in the context of multisectoral action. Guidelines will be developed to orient an efficient participation of community-based organizations, NGOs and other stakeholders in action at local level, and to improve their collaboration with district health management teams, as well as municipalities.

Technical capacity building

WHO will develop technical capacity building packages for a selected number of interventions. These packages will comprise staff selection and training, technical and seed financial support to initiate field activities and follow-up. For each of the selected intervention, a training course will be developed/updated and national staff with a minimum set of skills will be selected based on pre-established criteria to participate. At the end of the training, each staff will prepare a field project to be initiated immediately after the training. WHO and partners will assist with resource mobilization to provide seed funding for the project. Such projects will represent entry points to expand country activities in those specific areas and to further strengthen country capacity to deal with such specific issues.

Advocacy and social mobilization

Advocacy and social mobilization are essential elements in interventions targeting health and the environment. Advocacy incorporates many diverse activities and can generally be defined as the pursuit of influencing outcomes. Experience suggests that without strong commitment from different sectors of society, particularly decision-makers and influential political and religious leaders, it is difficult to succeed in making progress on critical issues related to public health and the environment. It is generally agreed that advocacy is needed at international, national and community levels.

WHO will first and foremost establish a strong evidence base to correlate specific risk factors to health outcomes. This evidence base will be used to deploy advocacy activities at three levels—international, national and community. At international level, efforts will aim at setting the agenda of the media, governments, donor agencies, international organizations and others to better address health and the environment. At the national and community levels, technical support will be provided to countries to effectively undertake advocacy activities that will address parliamentarians, ministries of health and finance, business leaders, religious leaders,

civic and cultural institutions, civil society organizations, and NGOs to mobilize political support. In this context, the Communication for Behavioural Impact (COMBI) approach will be used to promote a number of essential health and environment interventions such as insecticide-treated nets (ITNs) or the Participatory Hygiene And Sanitation Transformation (PHAST) approach, particularly for the implementation of healthy settings activities.

6.3 Assessing and Managing Risk Factors

Disease vectors

Since the 1950s, an impressive number of studies have demonstrated the extraordinary epidemiological variability of vector borne diseases in Africa, and particularly malaria. They have indicated the need to tailor vector control interventions to the local situations. However, vector control programmes are often planned without taking the local vector ecology into consideration and when they do, the information used is frequently obsolete. Yet, research continues to be productive in generating essential information that is needed for better planning and evaluation of disease control programmes. Furthermore, current recommendations for malaria vector control are generic and do not respond to programme managers' needs for implementation in decentralized systems.

WHO will provide technical support to countries to update malaria and other disease vector stratification on a country specific basis. A specific project on the ecological and entomological stratification of malaria will be developed. The outcome of this work will lead to the formulation of recommendations for the selection of vector control options that are suitable for each epidemiological stratum. It will in addition provide a better baseline for impact evaluation. Where appropriate, data sharing and joint data collection with other interested parties in the broader area of biodiversity and pest management will be encouraged. This may include collaboration with agricultural entomologists in agroecosystems analysis, and with biodiversity research groups in nature conservation areas.

Water

Water and health comprise a broad area ranging from the health dimensions of water resources development and management, to water quality monitoring, monitoring of access to safe water and sanitation, and household water treatment and safe storage. In parts of the African Region where water is scarce, health aspects of wastewater use in agriculture and aquaculture need attention, as does the construction of small dams that can entail major malaria and schistosomiasis risks. Currently, a study of this issue is on-going in Burkina Faso, through the WHO Collaborating Centre IWMI. In African tourist areas, the quality of recreational water may have an important economic dimension. Although countries have continued to make progress to ensure access to safe drinking-water, a lot of effort is still needed before the MDG goal in this specific area can be achieved. Monitoring access to safe drinking-water and basic sanitation continues to be a global effort under the WHO/UNICEF Joint Monitoring Programme, but increasingly, capacity building for national monitoring will expand to the country level, including in the African Region. National workshops and training courses are the appropriate starting point for such capacity building. The third version of WHO's Drinking-water Quality Guidelines proposes the preparation and use of

Water Safety Plans (WSPs) as a process-oriented quality control mechanism. WSPs are adaptable to different needs, resource-situations and administrative levels.

WHO will continue to strengthen baseline information on water quality using the Environment Information Management (EIM) systems. This information will be supplemented by specific surveys on access to safe drinking-water. Information will be used to:

(1) intensify advocacy for access to safe drinking-water in collaboration with partners;

(2) accelerate capacity building for water quality monitoring and treatment, including training of personnel and laboratory strengthening; and

(3) support country level activities for water resource management, as African governments adopt Integrated Water Resources Management (IWRM) policies and strategies

Ministries of health will require technical assistance to ensure that health is effectively incorporated into these aspects. WHO will further strengthen its partnerships to help countries in the development of WSPs in local settings. At the household level, small water supply systems, household water treatment and hygiene education will continue to be promoted through global networks that meet on an annual basis.

Air

Air pollution is becoming a major environmental and health concern in sub-Saharan Africa. High rates of urbanization and the related increase in number of vehicles has resulted in the rapid increase in pollutants emitted by the vehicles. Some specific aspects have to be taken into consideration when investigating air pollution in sub-Saharan Africa: informal sector, leaded gasoline, quality of fuel, importance of indoor air pollution, the vehicles' pool composition (older and used vehicles, poor inspection and maintenance, importance of two-wheeled vehicles, high health and damages costs).

WHO will provide technical capacity building for monitoring air quality. Information generated from the Environment Surveillance for Health (ESH) project activities will provide an evidence base to develop advocacy and social mobilization activities in partnership with other institutions already working in this area, such as the UNEP, the World Bank, AfDB and specialized NGOs. On the other hand, the Environment Risk Assessment (ERA) will largely address issues related to assessment of health impacts of indoor air pollution. Technical support will be provided to countries for the development of cost-effective systems and to increase their response capacity in this specific area.

Chemicals

The emerging Strategic Approach for International Chemical Management (SAICM) will serve as the framework for chemical safety. The SAICM Global Plan of Action sets out common global priorities. It calls for inter-sectoral collaboration and clearly defines the roles of governments, WHO and other international actors.

WHO will work with countries and partners to integrate chemical issues into the broader development agenda; promote ratification of relevant conventions; strengthen country capacities for implementation of international norms and standards; promote alternatives in order to reduce and phase out highly toxic pesticides and support capacity building. Specific emphasis will be given to the following activities: development of national profiles; capacity building to deal with poisonings and chemical incidents; judicious use of pesticides in the context of integrated vector management; surveillance and pollution prevention.

Occupational health

A situation analysis for occupational health in the African Region has been undertaken and has provided information for action. While occupational health service is accessible only to between 5–10% of workers in the formal sector, the programme aims to reach more than 25% of all workers by 2010. In their established partnership, WHO and ILO have developed a common country profile to guide countries in carrying out situation analyses.

WHO will continue to provide technical support to countries to ensure that occupational health is appropriately reflected in health and environment policies and plans. Countries will be sensitized into using the available tool in policy development/reviews and implementation plans. Support will be provided to countries in the development of occupational health services in particular to cover the informal sector and small enterprises. A minimum package for occupational health service will be developed and countries supported in its use. Other important activities will include:

- support and development of capacities for the promotion of occupational health services;

- improvement of the management and dissemination of occupational health data and information for workers to be informed in decision-making regarding hazards and risks at work;

- support and assistance to countries in raising funds for improvement of health and safety at work through making evidence based data and information available;

- support countries in initiating and enhancement of inter-sectoral collaboration, health and labour to rally and coordinate other sectors to consider, including health and safety issues within their policies and implementation plans.

Collaborating centres will be of critical importance to promote occupational health and safety particularly for advancing the programme within the small-scale and informal sectors.

Waste

One of the critical areas where little has been done for a systematic and region-wide response is health care waste management. Although technical solutions exist, the expertise and the necessary logistics for a proper management of health care waste is still weak. A few projects have been successfully undertaken in some countries. More pilot projects are needed to broaden the array of cost-effective solutions that can be applied in countries with little capacity.

WHO will support countries to implement pilot projects in selected countries and use these projects as a basis for further capacity building in the region, including development of guidelines and training. This work will be done in parallel with raising awareness and the systematic promotion of best practices. Domestic solid waste management, plastic waste as well as industrial waste will also receive increased attention. There will be a need to continue the documentation and dissemination of best practices and technical support for adoption and implementation of such practices by countries. This work will be pursued in collaboration with UN-Habitat.

6.4 Outreach and Integrated Delivery of Interventions

Environment Surveillance for Health Initiative
A number of risk factors should be monitored continuously to enable timely action in order to have the desired impact on the protection of the human environment and significantly improve human health. Currently, very few basic indicators related to risks factors are collected analyzed and used for decision-making. Furthermore, there is no systematic and integrated surveillance of major risks factors to enable the prevention of related conditions in the community. Very few countries have functional databases on environmental determinants of health and their associated risks factors. Existing environment monitoring systems including data management are inadequate and not operating. Therefore, most countries do not have the capacity to respond adequately to increased risks.

WHO will undertake a systematic approach (the ESH initiative), to ensure a timely and continuous monitoring of trends of a set of critical risks factors, with a prompt and continuous feedback to national authorities for response. Initially, the following will be monitored: water (bacteriological, chemical and physical parameters), disease vectors in epidemic prone areas (malaria, yellow fever) and air (particulate matter, sulfur and nitrogen dioxides and lead). The project will start by selection of indicators, thresholds and methodologies for data collection and analysis. Countries will be equipped with the necessary technical capacities including human resource materials and logistics, to establish national environment surveillance systems. Harmonized databases will be created at the national and regional levels. Funds will have to be made available to countries to actively undertake environment surveillance activities. The regional office will establish a system for an instant feedback to national authorities, including practical recommendations for action.

Environment and Health Impact Assessments
Development of natural resources, infrastructure improvement and expansion, energy generation, mining and industrialization, the construction of tourist facilities and urbanization will all need to accelerate in the African Region in order to meet the MDGs and regional development goals under the New Partnership for Africa's Development (NEPAD). The overall outcome of these development efforts will be alleviation of poverty, more reliable livelihoods and a general improvement in the socio-economic status in the countries. Yet, it is known from experience that inadvertently, development may have adverse impacts on the health of specific vulnerable groups. This awareness is on the rise in ministries of health in many

African countries. Countries are increasingly demanding WHO's support for Environment and Health Impact Assessment.

WHO will make a generic and comprehensive package of EHIA resources available and provide technical capacity building for their adaptation and use at country level. Experiences in other regions with the preparation and use of EHIA guidelines, and lessons learned will be shared and a technical support network of institutions and experts will be established to support health sector country level functions in the context of specific development projects. Data generated from the ESH and the use of EHIA will be used for national environmental health hazard mapping. Countries will therefore receive support to update their hazard profiles.

Vector ecology and management

Malaria control is currently one of the highest priorities for countries and the international community. Malaria vector control interventions are at the forefront of malaria control. Currently, countries and their partners are synergizing their efforts to scale up these interventions with a specific emphasis on insecticide-treated nets (ITNs) and indoor residual spraying of insecticides, including DDT. New delivery approaches are being tested and expanded as they are being proven effective, such as the mass mosquito nets impregnation campaigns and the integrated delivery of ITNs with immunization activities. A regional framework for Integrated Vector Management (IVM) has been developed and is increasingly used at country level as the basis for deploying vector control operations. IVM is a strategy that has been clearly recognized as an ideal option for the implementation of the Stockholm Convention on Persistent Organic Pollutants (POPs) as well as the Strategic Approach to International Chemical Management (SAICM). A set of IVM core activities are included in the SAICM Global Plan of Action (GPA).

WHO will strengthen the evidence base for the selection of vector control options that are tailored to local situations. Recommendations and technical support for scaling up vector control interventions with a specific emphasis on malaria will be provided (scaling up ITN and indoor residual spraying–IRS coverage). Specific actions will be directed at assessing current coverage of these interventions and their impact on the transmission of the disease. For this, capacity building, revival of entomology laboratories as part of the national public health laboratory system, strengthening of communications and other logistical support systems will be of major importance. The work initiated to support capacity building for implementation of the POPs convention as well as the SAICM will be pursued.

Healthy settings

The healthy settings approach has now been embraced in all countries as a typical approach to deliver health and environment interventions in an integrated manner. However, in many member states, activities using the settings approach are yet to be organized, strengthened and structured to provide a lasting and systematic health impact

WHO will continue to support countries to further demonstrate the effectiveness of this approach by documenting best practices and experiences. Successful experiences will be widely disseminated and current guidelines improved. This information will also expand the current evidence base and facilitate advocacy and social mobilization.

Advocacy for adoption of the approach will be one of the main directions and exchange of experiences and networking among countries will be facilitated.

On the other hand, more generic work to create the necessary enabling environment for action to take place at local level will be done. This will consist of capacity strengthening particularly at community level (NGO, community leaders and CBOs need to be oriented and updated with knowledge and skills to make them more effective and efficient). This capacity building exercise will address a mix of skills that need to be strengthened, particularly those that will lead to changes in practices and attitudes towards principles of Health for All. National authorities will be sensitized to encourage local initiatives at municipal level to promote the uptake of the healthy settings approach by municipal councils.

Children's Environmental Health

Since 2002, the African Region has recognized the need for a concerted programme of action to address the priorities in children's environment and health. The range of issues to be tackled is potentially very wide and it will be important to focus on those areas that offer the greatest opportunity for impacts in the short to medium term. The complexity and multisectoral nature of CEH requires a broad range of intervention channels to reduce risk factors and create safe and supportive environments in the home and community settings. Thus some interventions will focus on settings where children live play and learn.

A number of initiatives already underway will be strengthened and scaled up. These initiatives include preparation on National Profiles on Children's Environmental Health. These profiles summarize the status of children's environmental health, the success and challenges of the current national activities and policies, and offer a baseline to evaluate progress. So far 13 countries have prepared their profiles. More countries will be supported to undertake the same exercise. These countries will be further encouraged to develop concrete plans and to take action to address CEH priorities.

The Children's Environmental Health Indicator project is another critical activity that will need to be pursued. The project has been piloted in one country. It will therefore be necessary to involve more countries and to continue providing the necessary guidance for the practical use of these indicators for improving children's health. Capacity building and awareness raising will also be strengthened.

Networks and partnerships

With many international players in the field of health and environment, WHO must restrict its areas of work to those where it has a comparative advantage. In the remaining areas, it should ensure public health is well represented through participation in partnerships and networks. WHO Collaborating Centres make up the most prominent network to build on for extended capacity to deliver products, and it will need further expansion within the African Region. In broader development network and partnerships, such as NEPAD, WHO should promote the health and environment concept as a basis for sustainable development. Specific technical support to health and environment networks will be provided, including those on household water treatment and safe storage, water supply, water and sanitation in support of HIV/AIDS home care, vector control and health impact assessment.

Research networks are also important to strengthen African capacity in this area. An example will be the SIMA network (CGIAR's System-wide Initiative on Malaria and Agriculture). Inter-agency arrangements with other UN agencies at the global level, such as those with ILO on occupational health, with UNEP in the Health and Environment Linkage Initiative (HELI), with UNEP and GEF on the reduction of reliance on POP pesticides and promotion of alternatives for vector control, with NEPAD in the ECOHEALTH approach and with 24 UN agencies in UN Water will be strengthened in the light of overall UN reform.

6.5   Research

The planning of actions in many of the areas addressed in this strategic plan would greatly benefit from targeted information on the magnitude of an environmental health problem, its distribution among population groups, and the effectiveness and costs of available interventions. Such information would support setting priorities and targeting action to areas and populations in greatest need. Information on cost-effectiveness and cost-benefits of interventions and policies would guide policy makers in choices on health gains that are achievable within the given financial constraints, but also highlight opportunities for savings and other benefits (time, productivity etc.). In particular, WHO will:

(a)   assist countries in rough estimates of the size and distribution of health impacts that could be averted through environmental improvements;

(b)   guide countries in the choices by providing cost-effectiveness of interventions in various areas;

(c)   support the application of cost-benefit analysis during the decision-making process; and

(d)   map out region-specific research needs in areas that have been poorly documented and that are of particular interest to decision-making.

Specific areas of interest that require an urgent and more systematic operational research include Health and Environment Information Management Systems (HEIMS), bionomics of disease vectors and transmission dynamics in local settings with a specific emphasis on malaria control, safe water and water resource management, chemical safety, health care waste management and children's environmental health. For instance, an initiative to research the process of adapting the revised WHO guidelines for safe use of wastewater, excreta and grey water in agriculture and aquaculture for use in a number of North and West African countries (a joint WHO/IDRC initiative) has the potential to evolve into a region-wide effort for all Member States where wastewater is an important input into agricultural production.

Natural radioactive sources in the soil, water and air contribute to our exposure to ionizing radiation, as well as man-made sources resulting from mining and use of naturally radioactive materials in power generation, nuclear medicine, consumer products, military and industrial applications. Part of research efforts will target evaluation of health risks and public health issues related to environmental and occupational radiation.

Incorporating health safeguards into any water resources development project will require a further strengthening of the existing knowledge base, through research and case studies. The scope of this knowledge base includes effectiveness of measures and interventions in specific settings, the burden of disease fraction attributable to types of water resources development (and possibly components of individual water resources development projects), and economic evaluations of different intervention options.

A development of a research agenda will help stimulate research action including pilot projects and more basic research. Climate change will continue to be an issue deserving attention and its impact/linkages on diseases such as malaria should further be investigated, in line with the findings of the Millennium Ecosystem Assessment. It will be necessary to establish linkages with the scientific community to better define the role and contribution of WHO on this specific topic.

7.   IMPLEMENTATION, MONITORING AND EVALUATION

The timelines of this strategic plan correspond with two cycles of WHO biennial workplans, for the periods covering 2006–2007 and 2008–2009. Therefore, these workplans will serve to operationalize activities of the strategic plan.

For each of the biennium, targets, and related indicators will be proposed. They will be based on WHO expected results, taking into consideration international goals such as the MDGs.

WHO Country Offices (WCOs)
The strategic plan provides a more detailed framework to operationalize strategic choices included in Country Cooperation Strategy (CCS) documents. Therefore, at the planning stage and specifically during interactions between AFRO and country offices, the strategic plan will be used as one of the documents that will inform the preparation of country level workplans. Subsequently, technical support will be provided for implementation specifically by the inter-country level. WCOs will be encouraged to use the document for resource mobilization at the country level, specifically by targeting the untapped potential resources that are available under the technical and financial assistance of international conventions on the environment.

Intercountry teams
The health and environment area of work is one of those that have been identified to have staff at the inter-country level. Inter-country workplans deriving from country offices workplans will also be prepared following orientations included in this strategic plan. Inter-country teams will be responsible for providing the overall technical support for implementation.

Regional Office
The Regional Office will use the strategic plan to intensify advocacy and resource mobilization in collaboration with headquarters. To this end, the various sections of the strategic plan will be used as the basis to develop project proposals to be submitted to donors. The Regional Office will also focus on providing technical and

strategic guidance to inter-country teams for their effective technical support to countries. It will, finally, oversee monitoring, evaluation and reporting processes.

The monitoring and evaluation methodology will be based on the WHO management processes and its evaluation framework that include semi-annual monitoring, mid-term evaluation and final evaluation. The end of biennium assessment of the 2006–2007 workplan will be used as the mid-term evaluation of the strategic plan. Therefore, a rolling revision of the strategic plan on a biennial basis will allow a planning that can take on board experiences from the past and on-going biennium into the next four year phase, thereby overcoming the overlap in planning procedures from one biennium to another.

8. CONCLUSION

Member States are taking steps to implement the Regional Strategy for Environmental Health, with an increasing demand for WHO to provide technical support. The WHO Strategic Plan for Health and Environment will help by responding comprehensively to this demand and therefore contribute to yielding tangible progress in this area during the four year period. However, successful implementation will largely depend on how best proposed activities will be mainstreamed in the work of other relevant areas of work across the organization and on the ability of the health and environment area of work to consolidate its collaboration with other entities at all levels, within and outside WHO.

9.   STRATEGIC PLAN FOR HEALTH AND ENVIRONMENT IN THE WHO AFRICAN REGION 2006–2009:

WORKPLAN AND FRAMEWORK FOR COLLABORATION

INTERVENTION	ACTIVITIES	TIMEFRAME				ESTIMATED BUDGET (In US $)
		2006	2007	2008	2009	
1. Developing comprehensive national health and environment policy and institutional frameworks						
1.1. Undertake a process of policy formulation, review, adjustment and harmonization	1.1.1. Complete the development of environmental health policy guidelines.	X	X			20 000
	1.1.2. Establish a pool of expertise at regional level including individuals and collaborating centers to support countries in health and environment policy development.		X	X	X	80 000
	1.1.3. Provide technical support to selected countries to develop their health and environment policies.	X	X	X	X	575 000
1.2. Support the preparation of national strategic plans	1.2.1. Develop guidelines for the preparation of national strategic plans for health and environment including country level inter-sectoral collaboration.			X	X	25 000
	1.2.2. Provide technical support to selected countries to prepare and implement national strategic plans for health and environment.			X	X	390 000
1.3. Provide support to establish effective regulatory mechanisms	1.3.1. Identify and brief consultants on the review and update of health and environment regulations.			X	X	80 000
	1.3.2. Provide technical support to selected countries to review and update their regulatory frameworks.			X	X	390 000
2. Capacity building, advocacy and social mobilization						
2.1. Institutional capacity building	2.1.1. Define core functions of health and environment services at country level.	X	X			-
	2.1.2. Review and update profiles for environmental health workers at all levels of the health system.	X	X			5 000

INTERVENTION	ACTIVITIES	TIMEFRAME				ESTIMATED BUDGET (In US $)
	2.1.3. Undertake a human resources needs assessment for health and environment (case studies in selected countries).	X	X			100 000
	2.1.4. Develop and coordinate the implementation of a health and environment human resource capacity building plan.	X	X	X	X	800 000
	2.1.5. Develop guidelines for health and environment community based activities.			X	X	25 000
2.2. Technical capacity building	2.2.1. Identify essential technical areas that require topical in-service training.	X	X			-
	2.2.2. Develop for each of the above essential technical areas, capacity building packages, including training, on site follow-up, supervision and evaluation of health workers.	X	X	X	X	100 000
	2.2.3. Provide technical capacity building packages according to country demand.	X	X	X	X	-
2.3. Advocacy and social mobilization	2.3.1. Recruit a consultant for advocacy and social mobilization.	X	X	X	X	220 000
	2.3.2. Develop an evidence base for advocacy and social mobilization.	X	X	X	X	
	2.3.3. Prepare and implement a regional plan for advocacy and social mobilization in the area of health and environment.	X	X	X	X	200 000
3. Assessing and managing risk factors						
3.1. Disease vectors	3.1.1. Support and coordinate activities of the African network on vector resistance to insecticides.	X	X	X	X	600 000
	3.1.2. Develop and implement a project on ecological and entomological stratification of malaria.	X	X			250 000
	3.1.3. Develop country specific recommendations for malaria vector control.	X	X	X	X	50 000
	3.1.4. Provide technical support on the bionomics of other disease vectors.	X	X	X	X	50 000
3.2. Water	3.2.1. Undertake a survey on access to safe drinking-water in the region.	X	X			5 000
	3.2.2. Provide technical information for advocacy activities in the area of safe drinking-water.	X	X	X	X	-

INTERVENTION	ACTIVITIES	TIMEFRAME				ESTIMATED BUDGET (In US $)
	3.2.3. Provide a technical capacity building package to countries for water quality monitoring and treatment.	X	X			300 000
	3.2.4. Provide technical support to countries for water resource management.			X	X	50 000
	3.2.5. Provide technical support to countries to develop and implement water safety plans using WHO guidelines.			X	X	50 000
3.3. Air	3.3.1. Provide technical capacity building packages to countries to monitor air quality.	X	X			300 000
	3.3.2. Provide technical information for advocacy in the area of air quality.	X	X	X	X	50 000
3.4. Chemicals	3.4.1. Collaborate with relevant UN agencies and NGOs to promote the ratification of the international convention on environment addressing chemicals' management.	X	X	X	X	-
	3.4.2. Provide technical support to countries participating in the SAICM process to develop the health-related aspects of their national implementation plans.	X	X			50 000
	3.4.3. Provide technical support to countries to update their national profiles for chemicals' management.	X	X			50 000
	3.4.4. Provide technical capacity building package to selected countries for chemicals' management.		X	X		300 000
	3.4.5. Provide technical support to countries for the establishment and strengthening of poison, chemicals and information centers.	X	X	X	X	200 000
3.5. Occupational health	3.5.1. Provide technical support to countries to undertake situation analysis for occupational health.	X	X	X	X	50 000
	3.5.2. Develop national occupational health safety and policy guidelines.	X	X			25 000
	3.5.3. Develop a minimum occupational health service package.	X	X			25 000
	3.5.4. Provide technical support to countries to use the minimum occupational health service package.		X	X	X	160 000

INTERVENTION	ACTIVITIES	TIMEFRAME				ESTIMATED BUDGET (In US $)
	3.5.5. Provide technical support to countries to apply good practices.	X	X	X	X	50 000
	3.5.6. Provide technical information for advocacy and policy development in the area of occupational health.	X	X	X	X	-
	3.5.7. Provide technical support to countries to ensure that occupational health is part of their environmental health policy and programmatic frameworks.	X	X	X	X	50 000
	3.5.8. Collaborate with other international agencies to support country policy development and implementation plans.	X	X	X	X	50 000
3.6. Waste	3.6.1. Document and disseminate current best practices for health care waste management in the African context.			X	X	30 000
	3.6.2. Support pilot projects on health care waste management in selected countries.	X	X			100 000
	3.6.3. Provide a technical capacity building package in the area of health care waste management.			X	X	300 000
	3.6.4. Provide technical support to countries to adapt and use the WHO generic guidelines on health care waste management.	X	X			-
	3.6.5. Provide technical information to advocacy activities in the area of health care waste management.	X	X			5000
	3.6.6. Document and disseminate best practices on solid waste management.			X	X	25 000
4. Outreach and integrated delivery						
4.1. Health and Environment Information Management Systems	4.1.1. Develop and implement a project on environment surveillance for health.	X	X	X	X	400 000
	4.1.2. Provide technical support to countries to strengthen their health and environment information management systems.	X	X	X	X	60 000
	4.1.3. Develop regional guidelines on Environment and Health Impact Assessments (EHIA).	X	X			25 000
	4.1.4. Establish a pool of expertise including individuals and collaborating centers on EHIA.		X	X		50 000

INTERVENTION	ACTIVITIES	TIMEFRAME				ESTIMATED BUDGET (In US $)
	4.1.5. Provide technical support to countries for EHIA including the update of environment and health hazard profiles.	X	X	X	X	50 000
4.2. Vector ecology and management	4.2.1. Provide technical support for strengthening entomology laboratories in group I countries.	X	X	X	X	180 000
	4.2.2. Provide technical support to group I countries to complete the IVM introduction phase and to initiate the consolidation phase.	X	X	X	X	200 000
	4.2.3. Provide technical support to group II countries for vector control impact assessments and inter-sectoral coordination.	X	X	X	X	170 000
	4.2.4. Provide technical support to group III countries to undertake the IVM introduction phase.	X	X	X	X	330 000
	4.2.5. Complete and update the database on coverage of major vector control interventions with a specific emphasis on ITMs.	X	X	X	X	300 000
	4.2.6. Coordinate the implementation of the DDT/GEF project on cost-effectiveness of IVM.	X	X	X	X	5 200 000
	4.2.7. Provide technical support to countries for scaling up vector control interventions for malaria and other vector borne diseases.	X	X	X	X	420 000
4.3. Healthy settings	4.3.1. Provide technical support to countries for their healthy settings initiatives.	X	X	X	X	260 000
	4.3.2. Document and disseminate experiences in the implementation of healthy settings initiatives.	X	X			10 000
	4.3.3. Develop and update technical guidelines for healthy settings.	X	X			25 000
	4.3.4. Provide technical information for advocacy activities in the area of healthy settings.	X	X	X	X	-
	4.3.5. Provide technical capacity building packages for healthy settings in selected countries.	X	X	X	X	300 000
4.4. Children environmental health	4.4.1. Complete the preparation of national profiles for children's environmental health.	X	X	X	X	115 000
	4.4.2. Provide technical support to countries to develop and implement national action plans for children's environmental health.	X	X	X	X	50 000

INTERVENTION	ACTIVITIES	TIMEFRAME				ESTIMATED BUDGET (In US $)
	4.4.3. Provide technical support to selected countries to undertake a children's environmental health indicator pilot project.	X	X	X	X	100 000
4.5. Hygiene and sanitation	4.5.1. Provide technical support to countries to implement and scale up the PHAST approach.	X	X	X	X	50 000
	4.5.2. Document and disseminate best practices in hygiene and sanitation.			X	X	10 000
	4.5.3. Implement a project on waste water reuse in selected countries.	X	X			240 000
	4.5.4. Develop technical guidelines for waste water reuse.			X	X	25 000
4.6. Environmental health interventions in emergencies	4.6.1. Provide a technical capacity building package for health and environment interventions in emergencies.	X	X	X	X	300 000
	4.6.2. Provide technical support for implementation of health and environment interventions during emergencies.	X	X	X	X	70 000
5. Research	5.1. Organize an informal consultation on a research agenda for health and environment for the African Region.	X	X			60 000
	5.2. Call for proposals on health and environment economics and operational research.	X	X			-
	5.3. Support selected projects on health and environment economics and operational research.		X	X	X	150 000
	5.4. Establish and support a network of research institutions in the area of health and environment.	X	X	X	X	50 000

Table 2: Budget Summary and Justification

Interventions	Estimated budget In US dollars	Budget Justification
Developing comprehensive national health and environment policies and institutional frameworks	1 560 000	• 3 Workshops • 276 weeks of external expertise • 1 contractual agreement with a WCC • Development, translation and printing of documents
Capacity building, advocacy and social mobilization	1 450 000	• 42 weeks of external expertise • 10 technical support missions • Supporting 3 regional training institutions with staff • 10 contractual agreements with WCCs • Regional level activities • Production of materials
Assessing and managing risks factors	4 625 000	• 10 weeks of external expertise • 60 technical support missions • 5 contractual agreements with WCCs • 6 workshops • Provision of technical capacity building packages to 20 countries • Seed funds to support implementation at country level • Regional level activities • Production of materials
Outreach and integrated delivery of interventions	8 940 000	• 100 weeks of technical support missions • 40 weeks of external expertise • Implementation of the DDT project • 3 contractual agreements with WCCs • Laboratory equipment and supplies • Vector control commodities • Staff • Production of documents • Seed funding for implementation • Regional level activities
Research	260 000	• 1 informal consultation • 2 meetings of research institutions • Funding for selected research proposals
TOTAL	**1 6 835 000**	