

# **REPORT ON A CONSULTATION MEETING**

## **"ESSENTIAL PUBLIC HEALTH PACKAGE TO ENHANCE CLIMATE- CHANGE RESILIENCE IN DEVELOPING COUNTRIES"**

**7-8 September  
Geneva**

---

## **Executive summary**

---

The Resolution WHA/61.R19<sup>1</sup>, adopted by the World Health Assembly in 2008, and the resulting World Health Organization workplan endorsed by the Executive Board in 2009, made a series of requests to the WHO secretariat. These include, *inter alia*, a request to continue close cooperation with Member States and appropriate United Nations organizations, and other agencies and funding bodies, in order to develop capacity to assess the risks from climate change for human health and to implement effective response measures.

Immediate and adequate adaptive (i.e. preventive) measures are a priority in most vulnerable countries to CC, and particularly in Least Developed Countries (LDCs) and Small Island Developing States (SIDS). In order to measure the degree to which health concerns are already incorporated into climate change adaptation planning in the most vulnerable countries, WHO analysed the health components of the National Adaptation Programmes of Action (NAPAs), that were prepared by the 49 LDCs, to meet the urgent needs for climate change adaptation, under the framework of the United Nations Framework Convention on Climate Change (UNFCCC). While the analysis showed that almost all NAPAs identify health as a priority area, and over 70% include health interventions, only about one quarter included a comprehensive assessment of health vulnerability, and adequate planning of health actions. The health adaptation projects proposed were therefore for the most part insufficient in terms of scope, size and resources.

In order to address the weak health coverage in adaptation planning, WHO is implementing a range of activities, including, *inter alia*, providing guidance and supporting health vulnerability and adaptation assessments, and co-ordinating national pilot projects on health adaptation to climate change. To further advance the widespread implementation of measures to protect health from climate change, WHO is now proposing an "Essential Public Health Package" of interventions to enhance health system resilience to climate change, which will define a common platform to allow comparability and to assess progress made in the enhancement of resilience. It also provides a basis for standardized resource requirement estimates at the national level. The proposed package aims to build on and support existing control programmes for climate-sensitive diseases, and to promote implementation of the actions defined in the WHO workplan that has been endorsed by Member States.

A first draft of the proposed essential public health package was developed by the Public Health and Environment Departments of WHO-AFRO and WHO-HQ. This formed the basis for a meeting to consult with representatives of LDC Member States, Regional

---

<sup>1</sup> [http://www.who.int/globalchange/A61\\_R19\\_en.pdf](http://www.who.int/globalchange/A61_R19_en.pdf).

Office focal points, and representatives of relevant technical programmes, to gather feedback, and ensure coherence across WHO programmes in support of Member States.

The meeting took place at WHO headquarters in Geneva, from 7-8 September.

**Participants** included staff from the Ministries of Health of Bangladesh, Ghana, Kenya and Maldives; the secretariat of the UN Framework Convention on Climate Change, and WHO departments dealing with environment, global alert and response, health action in crisis, health systems, malaria control, and tropical disease research.

**Main points discussed** during the consultation covered the WHO workplan on climate change and health, UNFCCC negotiation and funding mechanisms available for countries, and situation and needs in Bangladesh, Ghana, Kenya and Maldives. Discussion also covered the presentation and analysis of the first draft of the Essential public health package and work on climate change and health across WHO departments.

**Conclusions** of the meeting: at the end of the meeting a broad agreement was reached among participants on the elements that should be included in the essential package, with a series of comments to the secretariat.

The meeting report includes the first draft revision of the document, taking into account the comments received before, during and after the meeting (Annex I).

## **Report on Proceedings of the Meeting:**

---

### **Session I: Opening and introduction to the meeting**

---

The consultation meeting was opened and introduced by Dr. Maria Neira, Director of the Department of Public Health and Environment, on Tuesday 7 September 2010 at 10am.

### **Session II: Nomination of chairman and rapporteur, approval of agenda and programme**

---

After the introductions, the meeting appointed Dr Kepha Ombacho, representing the Kenyan Ministry of Public Health & Sanitation, as chairman of the Consultation meeting. Joy Guillemot and Elena Villalobos were designated rapporteurs of the meeting.

Dr. Roberto Bertollini explained the structure of the meeting, and the agenda and programme were approved without changes.

Mr Motsomi Maletjane, Programme Officer representing the United Nations Framework Convention on Climate Change (UNFCCC), clarified that he would include in his presentation information related to Least Developed Countries (LDC).

### **Session III: Review of WHO workplan on climate change and health (CCH): status and implementation**

---

Dr. Roberto Bertollini, Coordinator Evidence and Policy on Emerging Environmental Health, WHO, made a presentation on the mandates and directions given by the Member States (WHA Resolution 61.19 on Climate change and health, and the WHO workplan approved by the Executive Board). The presentation also gave a status report on the progress in achieving the objectives outlined in the workplan.

### **Session IV: Update on UNFCCC negotiations and funding mechanisms**

---

Mr. Motsomi Maletjane, Programme Officer Financial and Technical Support Programme, at the UNFCCC Secretariat presented an update on UNFCCC negotiations and funding mechanisms.

Mr. Maletjane explained that the following funds are available to support the UNFCCC process:

- Least Developed Countries (LDC) Fund: voluntary contribution from Developed Countries and managed by the Global Environmental Facility (GEF).

- Special Climate Change Fund (SCCF)
- Adaptation Fund (AF): which are accessible through National Implementing Entities (NIE) or Multilateral Implementing Entities (MIE) which at the moment are the UN Development Programme, the UN Environment Programme, the World Food Programme, the International Fund for Agricultural Development, the World Bank, and the African Development Bank.

In the following discussion sessions, participants raised questions related to ways to strengthen the participation of the health sector within the National Adaptation Programme of Action (NAPA) and UNFCCC processes as well as the LDC Expert Group, possibilities for channelling financing, mechanisms and criteria for the allocation of adaptation funding to different sectors, procedures for WHO to become an implementing agency for the Adaptation Fund, and difficulties to measure the "additionality" requested by some climate change funding agencies to fund any project.

Mr. Motsomi Maletjane reiterated that the "Essential public health package to enhance climate-change resilience in least developed countries" constituted a very positive step to assist the health sector to improve capacity of countries to themselves engage in climate policy and technical forums. As health is one of the areas expecting to receive financial support under the climate negotiations, then there is an important opportunity for action, and the role of WHO to support countries will become more necessary. The need to demonstrate the additional burden posed by climate change, in addition to the underlying burden, was highlighted as a key to accessing funds. There is an increased discussion around the equitable distribution of funds between mitigation and adaptation, so far without conclusion. It was also pointed out that for WHO to become an implementing agency for the Adaptation Fund will require WHO to initiate the formal process.

## **Session V: Situation at country level, interventions and needs**

The meeting benefits from the participation of representatives of four countries that are highly vulnerable, yet have some experience in planning health adaptation to climate change; Bangladesh, Ghana, Kenya and Maldives,. Each made presentations on the needs to support the health sector in their country to engage in climate negotiations and policy/funding mechanisms, and address climate related health risks by developing targeted protective national policies.

### *Bangladesh: Climate Change and Health: Needs, Perspectives, and Issues*

Overall, the presentation stressed that women and children remain the most vulnerable to a range of health impacts, and the impacts on livelihoods, food and water security, shelter following disasters are major priorities.

The main health concerns related to climate change are:

- Injuries, disability, drowning
- Heat and cold stress
- Water and food-borne diseases
- Malnutrition
- Vector-borne diseases: malaria, dengue, kala-azar, plague, Nipah virus, swine flu, bird flu, SARS, chikungunya.
- Psychological stress.

A dedicated Climate Change and Health Promotion unit has been created within the Ministry of Health, with a national steering committee, and a technical committee made up of multi-sectoral partners. The goal of the unit is to build capacity and strengthen health systems to combat the health impacts of climate change, and to protect human health from current and projected risks due to climate change.

The unit receives support from a national trust fund for health adaptation projects and research. The unit has allowed the health sector to engage in the review of the Bangladesh NAPA in 2009, and inform the national mechanisms for climate change planning, on sectoral priorities. The most important is the Bangladesh Climate change Strategic Action Plan, developed in 2008 and updated in 2009.

A Project from the Ministry of Environment Trust Fund is currently being implemented, titled "Risk reduction and adaptive measures in the context of climate change impact on health sector in Bangladesh". The broader objective of the project is to conduct research and monitor disease patterns, and develop effective adaptive measures in the context of climate change impact on health.

<b>Current Identified Needs</b>	<b>Would the implementation of the Essential Package address these needs:</b>
• Conduct Comprehensive V&A Assessment	Yes
• Improve Coordination among stakeholders in public-private-NGO sector,	Yes
• Conduct Baseline surveys in most vulnerable areas,	Needs definition
• Develop integrated surveillance with community clinic initiatives	Yes
• Better utilize innovative and appropriate technology to strengthen community participation for risk reduction (Ie community radio) on selected CDs in	No

coastal belt	
• Develop Research protocol for development of adaptive interventions	Needs definition
• Develop Training and training tools at multiple levels (particularly schools) to target protection of women and children.	Needs definition
• Integration of CC with 7 components of Essential PHC packages	Partially

**Table 1:** Main needs to support health protection from climate change expressed in Bangladesh country presentation, and correspondence with draft text of the "essential interventions" package <sup>2</sup>.

*Ghana: Climate Change and Health: Needs, Perspectives, and Issues*

Three main activities have taken place in Ghana to date. These are an integrated sectoral assessment of climate change vulnerability in 2006-2008, coverage of climate change in the Situation Analysis and Needs Assessment (SANAs) under the Libreville Health and Environment Ministerial process for Africa, and the development of a project on health adaption to climate change funded by the GEF, with UNDP as the implementing agency. The integrated assessment identified primary concerns for increased risk of diarrheal disease, guinea worm, malaria, malnutrition, and meningitis, which were further elaborated in the SANA assessment, and which will be covered to some extent through the planned GEF project. Limitations include incomplete coverage of health sector priorities (there is currently a lack of a vulnerability and adaptation assessment and health system strengthening approach), and poor coordination with the Ministry of Health and WHO in the development of the GEF project.

<b>Current Identified Needs</b>	<b>Would the implementation of the Essential Package address these needs:</b>
• More robust health infrastructure to resist impacts of flooding.	Not specifically
• Inadequate energy supplies for cold chains and essential health services, related to decreasing hydropower available following drought	Not specifically

<sup>2</sup> Tables were developed by the meeting rapporteurs, and summarize their interpretation of the main needs expressed by countries, and the extent that these challenges would be addressed by the implementation of "essential interventions" as proposed in the draft text. Identified gaps may be addressed either in the revised text, or in other or existing or planned WHO support.

• Reduce the carbon emissions of the health sector	Not specifically
• More comprehensive V&A assessment (SANA not adequate)	Yes
• Health sector to assume ownership of health components of adaptation projects and be more active in climate discussions.	Yes
• Consultation within health sector to define sector wide objectives and develop action plan to mainstream CC in to decision making	Partially
• Develop adaptation and mitigation projects, with emphasis on adaptation	Yes
• Technical and financial support from WHO, UNFCCC and other agencies	Partially
• Development of timely tools, on measures to be implemented and how to do studies	Not specifically

**Table 2:** Main needs to support health protection from climate change expressed in Ghana country presentation, and correspondence with draft text of the "essential interventions" package.

### *Kenya: Climate Change and Health: Needs, Perspectives, and Issues*

The presentation summarized the main effects of climate change in Kenya:

- Indirect effects:
  - Creates favorable conditions for vectors of diseases such as malaria, and Rift Valley fever.
  - Protein Energy Malnutrition resulting from inadequate food production and consumption, pushing many in drier regions to rely on relief food.
  - Water borne diseases such as cholera and typhoid.
- Direct effects:
  - Exposure to extremes of precipitation, both flood and drought.
  - Exposure to ultraviolet rays, and heatwaves; exposure to extreme cold.
- Others include:
  - Epidermal conditions such as scabies, jiggers, and lice infestation.



- Poor environmental sanitation and hygiene often with resultant parasitic infections and sanitation related epidemics.
- Indirect effects on public health priorities and individual behaviour, such as demands for immunization and other health services.

Kenya recognizes the strong attribution of its health problems to environmentally driven factors. Rapid land degradation, loss of biodiversity, and degradation of water resources are a concern. Food quality is at risk with increased extreme events (drought and flood) compromising food storage and predisposing food stocks to pest and rodent attacks (aflatoxins).

In August 2008, Kenya joined African States in signing the Libreville Declaration which aims to fast-track implementation of relevant conventions, treaties and protocols. Kenya has completed a Situation Analysis and Needs Assessment (SANA), with broad-ranging agreement that identified priorities cannot be tackled by one sector alone, but require intersectoral action. Kenya is committed to creating a Health and Environment Strategic Alliance (HESA) as basis for National Plans of Joint Action (NPJA), as part of the Libreville Ministerial process.

<b>Current Identified Needs</b>	<b>Would the implementation of the Essential Package address these needs:</b>
Needs for information, monitoring, and evaluation of the health impacts of environmental conditions: Refine Environmental Indicators, Refine health indicators to include environmental risks	Not specifically
Enhance human and financial resources available for information, monitoring, and evaluation of risks	No
Identified priorities in the SANA require concerted action by multi-sector actors.	Not specifically
The NPJA needs government support and international agencies to drive implementation	Not specifically
Community sensitization and education on environmental protection and conservation	Yes
Refine and document environmental legislation	No
Conduct Environmental Impact Assessment	Partially
Environmental management programs which focus on health oriented ecosystem services protection and promotion.	Yes
Mainstream climate sensitive diseases as part of the climate monitoring system with a health sector feedback mechanism	Yes
Promote non-biomass fuel sources	No

Wider stakeholder participation in environmental related concerns	Needs definition
Develop and implement adequate environmental policy	Partially
Institutional capacity to monitor and advise on climate change trends	Needs definition
Develop qualitative and quantitative mechanisms to monitor carbon emissions and models to monitor the impact of climate change	Needs definition

**Table 3:** Main needs to support health protection from climate change expressed in Kenya country presentation, and correspondence with draft text of the "essential interventions" package.

### *Maldives: Climate Change and Health: Needs, Perspectives, and Issues*

The Maldives have taken a leadership position in the global climate change discussions, and have now begun to integrate this with public health planning, and the creation of intersectoral awareness.

#### **Main health effects:**

- Diarrhoeal diseases – water security/safety.
- Vector borne diseases – dengue, chikungunya, scrub typhus, leptospirosis.
- Skin conditions & Ocular conditions- heat, UV exposure.
- Malnutrition – food security/ marine resources.

#### **Interventions either being planned or implemented:**

- Political leadership – at global level - continued advocacy for support and resources.
- Intersectoral Awareness/ Advocacy -Integrated into NAPA & NAPA projects.
- Develop National Environmental Health Action Plan (NEHAP), and Integrate with National Environment Action Plan (NEAP).
- Safe water supply projects - Developing Water safety plans for islands, resilient rainwater harvesting.
- Waste management projects – reduce vector breeding; human vector interactions
- Emergency Response projects – island level CBDR planning.
- Carbon neutral strategies in the energy sector and in the health sector.
- Research into vector-borne and diarrhoeal diseases and climate change.
- Exploration of the feasibility study of linking the meteorological information system with the disease surveillance system.
- Policy for Revitalizing primary health care in the context of health system reform and emerging issues such as climate change.
- Training of health workers on emerging issues including climate change.

- Development of a public awareness programme

<b>Current Identified Needs</b>	<b>Would the implementation of the Essential Package address these needs:</b>
Advocacy at global and national levels	Partially
Mechanisms to strengthen the Integration of Environmental Health and Environmental policy and strategies	Yes
Address water security risks and concerns	Partially
Address waste management	Needs definition
Address capacity for emergency response, particularly community based engagement for risk reduction	Yes
Address carbon footprint of the health sector	No
Increasing public awareness	Yes
Research on disease sensitivity	Yes
Integrate meteorological monitoring system with disease surveillance	Yes
Revitalization of PHC, and incorporating CC as an emerging health issue	Yes
Increasing health worker training on emerging public health issues	Partially
Need to develop multi-sector approaches to address the primary risks to health related to water, waste, food security risks	Partially
Strengthen surveillance to address data gaps on health	Yes
Strengthen human resource capacity in epidemiology, research, data analysis and decision-making	No
Communication	Yes
Need for innovative technology to strengthen vector control, communications, transport	Yes
Resource mobilization (none of the health NAPA projects were funded)	Not specifically

**Table 4:** Main needs to support health protection from climate change expressed in Maldives country presentation, and correspondence with draft text of the "essential interventions" package.

### **Session VI: Essential public health package: presentation and analysis.**

Lucien Manga, Regional Focal Point for Public Health and Environment in the WHO African Regional Office, introduced the Essential Public Health Package to the participants, as a basis for discussion.

Feedback from national and WHO participants included the following main considerations:

- The package should reflect the language of core health services, and the systems and pillar activities necessary to look systemically at health delivery, as well as investment in health infrastructure.
- Essential health services should also be identified as key investment areas for the package.
- The primary objective of the proposed package should be in strengthening the core functions of health protection, rather than focusing on identifying the specific additionality of climate risks.
- There is a need to integrate discussion of Primary Health Care (PHC), and to include capacity building to support countries.
- It is important to include reference non-communicable as well as communicable diseases, and to ensure that the discussion on vector-borne diseases is broader than malaria alone.
- The role of multi-sectoral coordination and engagement needs to be reinforced, and the focus should be on management of health determinants to improve health outcomes, not only the formal health sector.
- Disaster and emergency management need to be reflected as part of the core public health system.

### **Session VII: Update on relevant WHO work on climate change and health across departments**

Representatives of the participating WHO departments gave updates on the work of their departments of relevance to climate change and health.

Michael Ryan (GAR) welcomed the overall relevance of the proposed package, and the intention to strengthen and integrate with core functions. He described the work of the Department on alert and response, including for the management of epidemics of climate-sensitive infectious diseases, such as Rift Valley Fever and meningitis. GAR recognizes the risks that climate change poses through improving conditions for infectious disease transmission, and uses climate and other environmental information to enhance early warning on short to medium time scales. Effective response to climate change will therefore require maintenance and enhancement of existing surveillance systems.

Jonathan Abrahams (HAC/EPC) described the role of HAC in strengthening preparedness for weather-related hazards, and promoting a risk-reduction, rather than simply a responsive approach to such hazards. The increased engagement of the humanitarian community on climate change, including the work of HAC in close collaboration with PHE, was emphasized. The discussion also stressed the need to avoid duplication of existing work, and the need for coordination of related initiatives at the technical as well as overall policy level, in areas such as risk mapping.

Johannes Sommerfeld outlined the current work of TDR of relevance to climate change and health. This includes a number of projects looking at the ecological, biological and social determinants of health, an expert group on "Environment, agriculture and infectious disease", and a recent review and meeting on the evidence for the effects of past climate change on the transmission of vector-borne diseases. TDR is interested to continue to support applied research that can enhance capacity to protect health from climate change.

Paolo Piva (HSS/HDS/HGS) commented on the relevance of the package to the objectives of the HSS cluster. The invitation to seek HSS input, and the broad direction of the proposal were very much welcomed. The main points raised related to the need to ensure that the activities and the language of the proposal built on the identified pillars of health systems, rather than creating a parallel effort.

Jonathan Lines (HTM/GMP) discussed the links between the proposed package and existing and planned malaria control efforts, emphasizing that although climate change is an important potential influence on malaria transmission, it is one among many determinants, some of which are changing even more rapidly. Dr. Lines particularly emphasized the importance of evidence-based environmental management as a strategy to ensure sustained control of malaria and other infectious diseases, in the face of both climate and other changes.

### **Session VIII: Essential public health package: discussion and finalization.**

The session was opened for discussion, to identify specific changes to be made to the draft document "Essential public health package to enhance climate change resilience". The discussion took account of the presentations and discussion in preceding sessions, and generated specific recommended changes to be incorporated in the revision of the document.

### **Session IX: Conclusions and recommendations**

Lucien Manga proceed to close the meeting and summarized the main agreements and steps forward to finalize the document. It was agreed that written comments would be

provided by participants to Dr. Manga, who would be responsible for incorporating them and finalizing the document. The revised version of the document is included as Annex 1 in this report.

## **ANNEXES TO THE CONSULTATION REPORT**

**Annex I:** Revised draft document "Essential public health package to enhance climate change resilience in developing countries"

**Annex II:** Agenda

**Annex III:** Programme

**Annex IV:** Final list of participants

**Annex 1 : Revised draft, as of 19 September 2010.**

## **ESSENTIAL PUBLIC HEALTH PACKAGE TO ENHANCE CLIMATE- CHANGE RESILIENCE IN DEVELOPING COUNTRIES**

### **1. BACKGROUND**

It is now widely accepted that, at the least, a warmer and more variable climate threatens to lead to higher levels of certain air pollutants, increased transmission of diseases from poor water, sanitation and hygiene, and an increase in the adverse health consequences of extreme weather events in climate vulnerable countries<sup>3</sup>. It is also recognized that Least Developed Countries (LDCs) and Small Island Developing States (SIDS), which currently experience high burdens of climate sensitive diseases and include highly vulnerable populations, are likely to experience significant negative impacts of climate change, without immediate and adequate adaptive (i.e. preventive) measures. For instance, floods in Pakistan had affected over 18 million people by September 2010, with a significant increase in exposure to unsafe environmental conditions. In fact, it had been estimated that the global warming that has occurred since the 1970s was causing over 140 000 excess deaths annually by the year 2004. Climate change was estimated to be already responsible for 3% of diarrhoea, 3% of malaria and 3.8% of dengue fever deaths worldwide, with a total attributable mortality of about 0.2% of deaths; of these, 85% were child deaths (WHO, 2009)<sup>4</sup>.

Article 4, paragraph (f) of the United Nations Framework Convention on Climate Change (UNFCCC) states that parties commit to "take climate change considerations into account, to the extent feasible, in their relevant social, economic and environmental policies and actions, and employ appropriate methods, for example impact assessments, formulated and determined nationally, with a view to minimizing adverse effects on the economy, on public health and on the quality of the environment, of projects or measures undertaken by them to mitigate or adapt to climate change". In line with these commitments, parties and particularly developing countries have been reviewing their policies towards climate change adaptation and mitigation.

It is in this context that in 2008, the World Health Assembly adopted Resolution WHA/61.R19<sup>5</sup> and a workplan on climate change and health which *inter alia* requested the Director-General to continue close cooperation with Member States and appropriate United Nations organizations, and other agencies and funding bodies, in order to develop capacity to assess the risks from climate change for human health and to implement

---

<sup>3</sup> Neira, M et al., The year 2008 - A breakthrough year for health protection from climate change? *Am J Prev Med* 2008;35(5).

<sup>4</sup> WHO, 2009. [Global health risks: mortality and burden of disease attributable to selected major risks](#). World Health Organization, Geneva.

<sup>5</sup> [http://www.who.int/globalchange/A61\\_R19\\_en.pdf](http://www.who.int/globalchange/A61_R19_en.pdf) (accessed on 17 June 2010).



effective response measures. This resolution was based on the outcomes of consultations that have taken place in all WHO regions.

As one of the follow-up actions, WHO undertook a comprehensive analysis of the health components of National Adaptation Programmes of Action (NAPAs) that have been prepared by LDCs including SIDS with technical and financial assistance provided by the United Nations Framework Convention on Climate Change (UNFCCC)<sup>6</sup>. This analysis showed that 95% of 41 NAPAs reviewed consider health as being one of the sectors on which climate change is seen as having an impact. However, only 23% were found to be comprehensive (i.e. addressing the full array of climate sensitive public health conditions) in their health-vulnerability assessment. In total, 73% of the NAPAs included health interventions within adaptation needs and proposed actions, but only 27% of these interventions were found to be adequate. Most NAPAs demonstrated limited representation and input from the health sector, a weak epidemiological analysis, lack of an evidence base for the relationship to climate, an absence of clear public health objectives, and unclear and fragmented strategies. In many instances, this resulted in insufficient vulnerability assessments and inadequate adaptation actions. The health adaptation projects proposed were for the most part insufficient in terms of scope, size and resources.

The purpose of this document is to provide guidance for, and a harmonized approach to developing countries in order to strengthen their policies, strategies, and plans in view to enhancing their resilience to climate change in relation to health. In doing so, the document offers a common platform to allow comparability and to assess progress made in the enhancement of resilience. The document also provides a basis for standardized resource requirement estimates at the national level. The document is intended to be used by policy makers who have to take responsibility for implementation at the national level within and outside the health sector, and also by the UNFCCC bodies and partners as a reference for the provision of their technical and financial assistance.

## **2. OBJECTIVES**

The general objective of this essential public health package is to support the strengthening of health systems to prepare for, and effectively respond to climate risks.

The specific objectives are to ensure that developing countries have core human and institutional public health capacities to effectively :

- collect, analyze and interpret information on a continuous basis on climate-sensitive environmental risks and related epidemiological trends;

---

<sup>6</sup> The United Nations recognises 49 LDCs, including SIDS, of which 48 are party to the UNFCCC.

- make informed and sound decisions to implement a set of preventive actions to reduce population vulnerability and to mitigate the climate-related public health risks according to their respective epidemiological circumstances;
- predict, prepare for and respond to the acute and long-term health consequences of extreme weather events and environmental change;
- cope with extreme weather events and humanitarian crises;
- undertake applied research in order to better understand population vulnerability and health implications of climate change at the local level; and
- coordinate and advocate sustainable development and cross-sectoral policies which protect health, in light of climate stresses and adaptations in other sectors.

Realizing the objectives above will confer countries with a "climate-resilient" status for health to the extent that they will be able to effectively manage the health risks resulting from climate variability and change and substantially contribute to the delivery of primary health care.

### **3. INTERVENTIONS**

A set of six interventions is proposed as a minimum package, as follows:

- Comprehensive assessments of the risks posed by climate variability and change on population health and health systems;
- Integrated environment and health surveillance;
- Delivery of preventive and curative interventions for the effective management of identified climate-sensitive public health concerns;
- Preparedness for, and response to, the public health consequences of extreme weather events, including population displacement;
- Research
- Strengthening of human and institutional capacities and inter-sectoral coordination.

#### **a) Comprehensive assessments of the risks posed by climate variability and change on population health and health systems**

The analysis of health considerations within NAPAs indicated that there is very weak, limited and fragmented information and understanding of the vulnerability of countries to climate change. WHO has developed guidelines and tools for assessments of risks posed by climate variability and change. These include tools for public health vulnerability and adaptation assessments, health systems assessments as well as other tools for health risk, hazard, and emergency capacity assessments.

The proposed assessments will aim at establishing the baseline situation of existing population vulnerability to climate-sensitive health risks and the degree to which health

systems can effectively respond and manage these risks. These assessments will serve as an important first step in the enhancement of health and health-sector resilience to climate change and will take into consideration risks posed by projected long term climate change. They will also be undertaken, taking into account substantive analyses in other sectors (such as agriculture, water, disaster management), and which may have been carried out already by countries, including National Communications to the UNFCCC. In Africa in particular, the Situation Analyses and Needs Assessments for the implementation of the Libreville Declaration on Health and Environment and/or the Vulnerability Risk Assessment and Mapping undertaken in the context of disasters management will represent a valuable resource.

#### **b) Integrated environment and health surveillance**

Timely decision-making and actions to predict and prevent negative health effects of extreme weather events and environmental degradation, including those exacerbated by climate change are still unsatisfactory in many countries. This is due in large part to fragmentation of surveillance activities, insufficient coordination among the various established systems, low capacity to appropriately interpret integrated data, and an inability of these systems to provide timely data for immediate decision-making.

Further to their risk and vulnerability assessments, and as a second step in the resilience-building process, countries need to establish functional integrated environment and health surveillance systems, under the joint guidance of WHO, UNEP and WMO. The objective is to make timely and evidence-based decisions for effective management of environmental risks to human health by predicting and enabling the prevention of increases in incidence of linked ill-health and disease. An essential function of the system will be to track environmental changes which affect health determinants. These systems will have to use a standardized set of environment and health indicators including appropriate meteorological variables, and procedures to generate the required information for decision-makers and managers. The integrated environment and health surveillance systems will therefore build on current integrated disease surveillance systems and expanding them to incorporate key environmental indicators, including meteorological and climate data. Epidemic surveillance and preparedness for diseases which could emerge in new locations or populations due to climate and environmental changes will be an integral part of this system.

#### **c) Delivery of preventive and curative interventions for the effective management of identified climate-sensitive public health concerns**

Vulnerability assessments as well as the integrated surveillance system will provide national public health authorities with environment and epidemiological information on climate-sensitive public health concerns among vulnerable communities. However, it can be anticipated from the currently available country reports that vector-borne diseases (especially malaria and dengue), diarrhoeal and respiratory diseases, malnutrition, and

cancers, are amongst the most climate-sensitive public health conditions identified by countries for immediate action.

According to their respective local epidemiological circumstances and based on the conclusions of their vulnerability assessments, countries need to prioritize the public health programmes that require immediate strengthening to effectively limit potential increases in the incidence of climate sensitive diseases. Such prioritization needs to be constantly re-assessed based on evidence generated continuously by the integrated environment and health information system. Countries will then be able to reduce the incidence of the disease conditions cited above by implementing:

- integrated vector management to reduce the incidence of malaria and other vector-borne diseases;
- water safety plans (in urban areas) and point-of-use water treatment (in slums and rural areas) to reduce the incidence of water-borne diseases;
- regulatory interventions to limit the concentrations of PM10 and PM25 in ambient air to reduce the incidence of respiratory infections;
- Food and nutrient supplementation, and;
- other preventive interventions that are appropriate to local conditions for the most important climate-sensitive public health conditions.

**d) Preparedness for and response to health consequences of weather, hydrological and climate related emergencies and extreme events**

Country capacities to manage the risks of health emergencies is variable. The capacities of developing countries are still relatively weak. National and community health emergency management systems will have to be further developed in order to manage the health emergency risks associated with climate-related hazards. Most countries have already developed plans and established mechanisms to respond to emergencies related to the occurrence of natural disasters and disease epidemics. Health emergency risk management, including risk reduction, preparedness, response and recovery to the health consequences of events such as drought, extreme temperatures, cyclones, or floods will have to be implemented in that context. Also complex emergencies, migration, displacement, refugees. To this end, countries will need to review and where necessary update their capacities to ensure that the health sector can deal effectively with the identified climate-sensitive hazards. Key actions will include:

- Formulation and implementation of health emergency management policies, legislation frameworks and programmes and especially the testing and update of emergency response and recovery plans;
- Deployment of early warning systems for health, including access to forecasts as well as response and recovery operations, coordination and emergency communications

- Prevention and control of communicable diseases, mass casualty management, reproductive health, mental health and psychosocial support, environmental health, nutrition and emergency feeding, fatality management
- Human resource development programmes for health emergency management, including training and education
- Community-based health risk reduction programmes, including primary health care, first aid, health education and risk communication, early warning, local emergency response planning
- Safer, resilient and prepared hospitals programmes, including health facilities and critical infrastructure (such as water and sanitation)

#### **e) Research**

The analysis of NAPAs indicated that the extent to which countries understand the health effects of climate change on local populations is inadequate and insufficient. Each country will need to develop and implement a research agenda with two major objectives, these being: (i) to better and comprehensively understand the local health effects of climate change; and (ii) to generate and disseminate knowledge on locally-appropriate adaptation measures.

#### **f) Strengthening core human and institutional capacities and intersectoral coordination**

Countries will be able to implement the above interventions in a reliable and effective manner only if the necessary core public health and environmental human and institutional capacities will be in place. WHO, UNEP, WMO and other relevant specialized institutions will have to assist countries in the identification of the core capacities in the areas of public health, environmental management, meteorology, emergencies, and other related fields, using in particular information generated from the vulnerability assessments. Gaps in these capacities at the country level will be identified and national capacity building action plans prepared as specific component of the future national adaptation programmes of action.

Specific institutional coordination mechanisms will need to be established in order to ensure country ownership under the stewardship of ministries of health. Such mechanisms will be responsible for planning, monitoring and evaluation of the national plans of action for the implementation of the proposed public health package. It is understood that the above-mentioned plans of action will represent the health components of the National Adaptation Programmes of Action that will be developed or updated by countries in the future. These mechanisms will also be responsible to ensure intersectoral coordination and health representation in national and international development, humanitarian, and UNFCCC climate policy forums

Given the wide spectrum of public health consequences of climate change, the complexity of these effects and the highly-specialized public health skills required to implement, monitor and evaluate the interventions proposed in this essential package, it is recommended at the level of ministries of health, a specific climate-change and health coordination mechanism be established.

Membership will be expanded beyond the relevant departments of the ministry of health to include representation from other sectors such as environment, agriculture, climate services, research, industry etc., in view to providing guidance to those sectors for their improved contribution to sustainable reductions in health risks.

#### **4. MONITORING AND EVALUATION**

WHO will work with other specialized institutions and developing countries to prepare a monitoring and evaluation framework that will include a set of standardized indicators and procedures to track implementation and impact of the proposed package at the national level and the international levels.

On the short term, the objective will be provide evidence on the critical steps of the resilience processes at the country level by monitoring:

- The number of countries developing/updating the health component of their national adaptation programmes of action on the basis on the proposed public health package;
- The number of countries that are completing comprehensive assessments of the risks posed by climate variability and change;
- The number of countries becoming able to track environmental changes and related disease trends;
- The number of countries effectively deploying public health interventions to address climate-related public health concerns;
- The number of countries responding adequately to public health consequences of extreme weather events;
- The number of countries implementing capacity building programmes to address public health concerns of climate variability and change;
- The number of countries with functioning climate change and health coordination mechanisms.

On the medium and long term, the objective is to establish an evidence base on countries becoming able to effectively manage public health climate risks by demonstrating and reporting the minimal possible impact of climate variability and change on the health of their populations.

**Annex II: Consultation meeting agenda**

- Session I: Opening and introduction to the meeting
- Session II: Nomination of chairman and rapporteur:  
Approval of agenda and programme
- Session III: Review of WHO workplan on climate change and health (CCH):  
status and implementation
- Session IV: Update on UNFCCC negotiations and funding mechanisms
- Session V: Situation at country level, interventions and needs
- Session VI: Essential public health package: presentation and analysis
- Session VII: Update on WHO work on CCH in different subject areas
- Session VIII: Essential public health package: discussion and finalization
- Session IX: Conclusions and recommendations

### **Annex III: Consultation meeting programme**

#### **First day: 7 September 2010**

09.30 - 10.00: Welcome coffee.

10.00 - 10.20: Opening and introduction. Dr. Maria Neira, Director Department of Public Health and Environment, WHO.

10.20 - 10.30: Nomination of chairman and rapporteur.

10.30 - 10.40: Approval of agenda and programme.

10.40 - 11.10: Review of WHO workplan on climate change and health (CCH): status and implementation. Dr. Roberto Bertollini, Coordinator Evidence and Policy on Emerging Environmental Health Issues, WHO.

11.10 - 11.40: Update on UNFCCC negotiations and funding mechanisms. Mr. Motsomi Maletjane, Programme Officer Financial and Technical Support Programme, UNFCCC Secretariat.

11.40 - 12.30: Presentation from countries, Bangladesh, Ghana, Kenya and Maldives: Situation at country level, interventions and needs.

12.30 - 13.30: Lunch

13.30 - 15.00: Essential public health package to enhance resilience in least developed countries: presentation and analysis. Dr. Lucien Manga, Africa Regional Focal Point, Public Health and Environment, WHO.

15.00 - 15.30: Coffee break

15.30 - 17.00: Update on WHO work on CCH in different subject areas. Inputs from different WHO Departments.

#### **Second day: 8 September 2010**

09.00 - 10.30: Essential public health package to enhance resilience in least developed countries: discussion. Dr. Lucien Manga, AFRO/ WHO.

10.30 - 11.00: Coffee break

11.00 - 12.30: Essential public health package to enhance resilience in least developed countries: finalization. Dr. Lucien Manga, AFRO/ WHO.

12.30 - 13.00: Conclusions and recommendations. Dr. Maria Neira, WHO.



## **Annex IV: Final list of participants**

### ***TECHNICAL ADVISERS***

**Dr Edith Clarke**, Ghana Health Service,  
Ministry of Health, Accra, Ghana

**Dr Iqbal Kabir**, Coordinator, Climate Change  
and Health Promotion Unit, Ministry of Health  
and Family Welfare, Dhaka, People's Republic  
of Bangladesh

**Mr Motsomi Maletjane**, Programme Officer,  
United Nations Framework Convention on  
Climate Change (UNFCCC), Bonn, Germany

**Dr Sheena Moosa**, Department of Health,  
Health Building, Ministry of Health, Malé, Maldives

**Dr Kepha Ombacho**, Chief Public Health Officer,  
Ministry of Public Health & Sanitation,  
Nairobi, Kenya

### ***WHO HEADQUARTERS STAFF***

**Mr Jonathan Abrahams**, Coordinator,  
Emergency Preparedness and Capacity Building

**Dr Roberto Bertollini**, Coordinator, Evidence and  
Policy on Environmental Health

**Dr Diarmid Campbell-Lendrum**, Scientist, Evidence and  
Policy on Environmental Health

**Ms. Elaine Fletcher**, Technical Officer,  
Interventions for Healthy Environment

**Ms Joy Guillemot**, Technical Officer, Evidence  
and Policy on Environmental Health

**Dr Jonathan Lines**, Coordinator, Global Malaria  
Programme

**Ms Marina Maiero**, Technical Officer, Evidence and Policy on Environmental Health

**Dr Tim Meredith**, Advisor, Public Health and Environment

**Dr Maria Neira**, Director, Public Health and Environment

**Dr Paolo Piva**, Adviser, Health System Governance, Policy and Aid Effectiveness

**Ms. Michaela V. Pfeiffer**, Technical Officer, Interventions for Healthy Environments

**Dr Michael Ryan**, Director, Global Alert and Response

**Ms Ravini Senanayake**, Technical Officer, Evidence and Policy on Environmental Health

**Dr Johannes Sommerfeld**, Scientist, Community Based Interventions

**Ms Elena Villalobos**, Technical Officer, Evidence and Policy on Environmental Health

**Ms. Susan Wilburn**, Technical Officer, Interventions for Healthy Environments

#### ***WHO REGIONAL OFFICE STAFF***

**Dr Lucien Manga**, Regional Advisor, Protection of the Human Environment, WHO Regional Office for Africa, Brazzaville, Congo



**World Health  
Organization**

**Contact information:**

For further information on the consultation meeting and report, please contact Joy Guillemot ([guillemotj@who.int](mailto:guillemotj@who.int)) and Elena Villalobos ([villalobose@who.int](mailto:villalobose@who.int)).

For further information on the public health package, please contact Lucien Manga ([mangal@afro.who.int](mailto:mangal@afro.who.int)), Tim Meredith ([mereditht@who.int](mailto:mereditht@who.int)) and Diarmid Campbell-Lendrum ([campbelllendrumd@who.int](mailto:campbelllendrumd@who.int)).