Health Community Needs for Climate Information and Services in the Eastern Mediterranean Region

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WHO/EMRO/CEHA

Key Points

- Health concerns arising from climate change
- Public health response to climate change within Member States
- Climate meteorological data requirements for health
- ArabCOF potential products and services for the health sector action on climate change.
World Health Organization
Eastern-Mediterranean Region

- 22 Member States
- 583 million people

Regional Health Concerns related to Climate, Water, and Weather

**Health Hazards to Monitor and Manage**
- Heatwaves
- Droughts
- Flooding/storms
- Water scarcity
- Poor air quality
- Sand and dust storms
- Harmful algal blooms
- Ecosystem impacts of climate variability

**Health Impacts to Prevent & Manage**
- Heat stress
- Injury and death
- Food and waterborne disease outbreaks
- Vector borne disease outbreaks
- Under nutrition
- Cardiovascular disease
- Respiratory complications
- Allergies
## Priorities for Health Ministries Response to Climate Change

- Building public **health resilience** to climate change
- Active **engagement** in national, regional and international policy processes on climate change (e.g. National Adaptation Plan and National Delegation to COPs)

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**Building health resilience requires meteorological data for:**

- Assessing health vulnerability to climate change
- Climate-informed health systems, disease control programs and early warning
- Health and climate plans of action
- Health contribution to climate plans of action in the health-determining sectors (E.G. water, agriculture, energy.)
WHO Regional Climate Action
Supporting Member States

- developing **evidence-based policies, strategies** and recommendations
- **identifying, preventing and addressing** public health problems resulting from climate change
- **disseminating tools, guidance, information** and training packages to support national awareness and advocacy campaigns on health vulnerability and adaptation to climate change
- building **capacity** and providing training to the health sector to assess and monitor health vulnerability to climate change
- providing **technical support** in the preparation of national adaptation plans within health sector plans to protect health from climate change.

*Improved access to climate information can improve each of these*

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Health Priorities that can benefit from climate/weather information

- Death and injuries from Storms/Floods/Droughts
- Death and illness from heat waves
- Vector-borne diseases
- Respiratory diseases
- Water/food borne disease
- Under-nutrition

**POTENTIAL APPLICATION AREAS**

**Vulnerability assessment**
- Risk assessment and mapping
- Impact assessment

**Adaptation planning**
- Prevention and risk management
- Health infrastructure planning/management
- Health service planning and delivery
- Pharmaceutical management
- Policy, Standards and Norms
- Risk communication and public alerts
- Etc.

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**Time Scales**

- **Historic**
- Now-casting / monitoring
- Forecasts/Watches/Projections
- Scenarios/Projections
- **Decades**
- **Years**
- **Seasons**
- **Weeks**
- **Days**
- **Hours**
### Specific Examples of information requirements for managing Heat related death, hospitalization & emergency visits during summer months

<table>
<thead>
<tr>
<th>Climate</th>
<th>Health (case number, rate)</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Extreme heat forecasts</td>
<td>- Daily death</td>
</tr>
<tr>
<td>- Daily maximum temperature</td>
<td>- Daily excess heat death</td>
</tr>
<tr>
<td>- Daily minimum temperature</td>
<td>- Daily heat hospitalization</td>
</tr>
<tr>
<td>- Diurnal temperature range</td>
<td>- Daily heat emergency visits</td>
</tr>
<tr>
<td>- Weekly temperature range</td>
<td></td>
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<tr>
<td>- Daily humidity</td>
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</tbody>
</table>

### Specific Examples of data requirements for managing Injuries and deaths due to extreme weather events

<table>
<thead>
<tr>
<th>Climate</th>
<th>Environment</th>
<th>Health (number, rate)</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Daily precipitation</td>
<td>- Flooding events &amp; area/pop affected</td>
<td>- Annual death due to flooding, drought, storms</td>
</tr>
<tr>
<td>- Storm warnings</td>
<td>- Drought events &amp; area/pop affected</td>
<td>- Annual injuries due to flooding, drought, storms</td>
</tr>
<tr>
<td>- Seasonal forecasts</td>
<td></td>
<td>- Health facilities destroyed</td>
</tr>
<tr>
<td>- Long-term trends in</td>
<td></td>
<td></td>
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<tr>
<td>extreme weather patterns in</td>
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<td></td>
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<tr>
<td>the region</td>
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</tbody>
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Source: World Health Organization
Specific Examples of information requirements for managing Water and food-borne diseases (WBDs & FBDs)

<table>
<thead>
<tr>
<th>Climate</th>
<th>Environment</th>
<th>Health (case number, rate)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daily maximum temperature</td>
<td>Water scarcity for hygiene</td>
<td>Outbreaks of FBD</td>
</tr>
<tr>
<td>Precipitation volume</td>
<td>Water safety compromises</td>
<td>Outbreaks of WBD</td>
</tr>
<tr>
<td>Seasonal change precipitation</td>
<td>Wastewater use if unregulated</td>
<td>Cases of FBD</td>
</tr>
<tr>
<td>Humidity</td>
<td>Pesticides use/residue</td>
<td>Cases of WBD</td>
</tr>
<tr>
<td>Wind</td>
<td>Food safety</td>
<td></td>
</tr>
</tbody>
</table>

Specific Examples of information requirements for managing Vector-borne diseases due to climate change

<table>
<thead>
<tr>
<th>Climate</th>
<th>Environment</th>
<th>Health (case number, rate)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daily maximum temperature</td>
<td>Vector breading range</td>
<td>Malaria</td>
</tr>
<tr>
<td>Daily minimum temperature</td>
<td>Parasites virility</td>
<td>Dengue</td>
</tr>
<tr>
<td>Humidity</td>
<td>Positive parasite tests in sentinels and reservoirs</td>
<td>Leishmaniasis</td>
</tr>
<tr>
<td>Precipitation seasonal change</td>
<td></td>
<td>Schistosomiasis</td>
</tr>
<tr>
<td>Prevailing wind</td>
<td></td>
<td>Rift valley</td>
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<td></td>
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<td>West Nile</td>
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</tbody>
</table>
### Specific Examples of information requirements for managing Respiratory diseases, asthma and allergies

<table>
<thead>
<tr>
<th>Climate</th>
<th>Environment</th>
<th>Health (case number, rate)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trends and Forecasts for dust/sand storms (Events)</td>
<td>Pollen indicator</td>
<td>Asthma</td>
</tr>
<tr>
<td>Expected and recorded intensity and duration of dust storms</td>
<td>Air mass stagnation events</td>
<td>Allergies</td>
</tr>
<tr>
<td>Wind patterns</td>
<td>Ground level ozone</td>
<td>COPD admissions</td>
</tr>
<tr>
<td></td>
<td>PM$<em>{10}$ and PM$</em>{2.5}$</td>
<td>Asthma hospitalization</td>
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<tr>
<td></td>
<td></td>
<td>Asthma emergency visits</td>
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</tbody>
</table>

### Specific Examples of information requirements for managing Under-nutrition due to food insecurity

<table>
<thead>
<tr>
<th>Climate</th>
<th>Environment</th>
<th>Health (rate)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seasonal forecasts</td>
<td>Water scarcity</td>
<td>Stunted Children under 5</td>
</tr>
<tr>
<td>Daily precipitation</td>
<td>Food production forecasts for affected areas</td>
<td></td>
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<tr>
<td>Temperature average daily</td>
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## Key Potential Health Partners for the ArabCOF

- WHO Eastern Mediterranean Regional Office
- Ministries of Health in Member States

## Health Community can benefit from the ArabCOF by

- Improving national level health **partnerships and access** to regional and national level data
- Supporting **capacity building** of health professionals to work with climate and meteorological scientists
- Developing **tailored climate services** for the health community to help identify and anticipate risks related to weather and climate
- Participating in **inter-sectoral coordination** mechanisms that support climate risk management and align regional activities.
Useful products and services that could be developed by an ArabCOF

- Development of indicators for climate risks to health, including climatic, environmental, and health data requirements for deriving the indicator. E.g. indicator: mortality during heat waves
- Seasonal precipitation forecasts
- Extreme weather alerts for health authorities and facilities
- Hazard mapping and alert systems
- Air quality monitoring, indices, modeling, forecasting, and public alerts
- Hydrological monitoring, modeling, forecasting, and support in WASH planning
- Access and better use of dust and sand storm warning systems
- Heat indices and Heat Early Warning Systems
- Historical data provision and analysis for health research and trend analysis
- Future scenario development, particularly of regional extreme events

Considerations for meeting health partner needs

- Health community is not aware of the many meteorological products and services available and marketing is needed to create demand

- Health community may not be ready to uptake products and services without capacity development and joint tailoring of products.

- The health community needs integrated and cross-sectoral products and services, rather than health specific services
  - i.e. drought management – food security – nutrition
  - i.e. extreme rainfall – water utilities – water-borne diseases
  - i.e. extreme events – disaster management – emergency response
More information on WHO Climate and Health within the Region

<table>
<thead>
<tr>
<th>WHO Eastern Mediterranean Region</th>
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<tbody>
<tr>
<td>Center for Environmental Health Action (CEHA)</td>
</tr>
<tr>
<td>Amman, Jordan</td>
</tr>
<tr>
<td>Dr. Hamed Bakir <a href="mailto:bakirh@who.int">bakirh@who.int</a></td>
</tr>
<tr>
<td><a href="http://www.emro.who.int/entity/ceha/index.html">http://www.emro.who.int/entity/ceha/index.html</a></td>
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