

# Regional Perspective from Asia on Climate Change and Health

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Malaysia

Northern  
Asia  
Russia  
(Far East)

South West  
Asia  
Turkey

East Asia  
China, Japan  
& South  
Korea

West Asia  
Armenia &  
Azerbaijan

Oceania  
Australia &  
New Zealand

South Asia  
India, Nepal  
& Pakistan

Asia  
Report

TÜBA



# AASSA country reports on climate change and health

- Country reports prepared for: Armenia, Azerbaijan, China, India, Indonesia, Japan, Korea, Malaysia, Nepal, New Zealand, Pakistan, Russia (Far East) and Turkey.
- Valuable resource for national discussions and to provide evidence for synthesis of AASSA regional report: in progress
- Focus on vulnerable groups: elderly, children, migrants, indigenous groups (e.g. Maori in New Zealand), megacities.
- Individual reports exemplify heterogeneity within countries across the region: in aggregate show increasing impacts of climate change on health, with need to take a systems approach to develop solutions for mitigation and adaptation and to identify barriers to implementation.

# AASSA country reports on climate change and health

- Asia is a disparate continent with extremes of Climate (from high elevations and below sea level as extreme cold to desert conditions) and therefore a variety of health effects from Climate Change
- Almost all reports have shown links to previous published policy and scientific reports on health effects from Climate change from each country
- Some countries are relatively less affected to those which are severely impacted

# Climate change and health: multiple pathways and effects

- Direct heat effects e.g. cardiovascular
- Indirect heat effects e.g. labour productivity
- Flooding infectious diseases, Leptospirosis, Dengue, diarrheal disease
- Air pollution due to burning of forest, pollution
- Infectious diseases e.g. dengue; tick-borne diseases; (re-emerging pathogens (Russian Arctic); migration of vectors/pathogens from neighbouring countries (e.g. Korea)
- Mental health
- Allergy
- Food and nutrition security e.g. childhood stunting

# Air pollution is major public health burden in many AASSA countries



- Sources of air pollution – including from elsewhere in the region – fossil fuels for energy; biomass use indoors for cooking; wildfires; agricultural practices
- Health co-benefits of mitigation: reduction in greenhouse gas emissions accompanied by reduction in pollutants e.g. particulate matter
- Examples of solutions/case studies in country reports:
  - Increasing public transport e.g. Kuala Lumpur, Delhi
  - Prevention of forest fires (Armenia, but may be reaching limit of adaptation)
  - Ethanol production from sugar as substitute for fossil fuels (Nepal)?
  - Pavagoda solar park (India)



# Australia bush fire 2019-2020 case study

- Bushfires have adverse effects on people's physical and Mental health
- Individuals are affected by direct exposure to the flames
- Prolonged and widespread nature bushfires resulting in More people being affected
- The scale and intensity of the 2019-2020 fire season presents an opportunity to address the knowledge gap



# Flooding is also an increasing problem throughout the AASSA region



- Sources include: sea level rise, extreme weather events; excess precipitation and river flooding; melting glaciers
- Multiple consequences:
  - Short-term e.g. water-borne and vector-borne diseases, drinking water quality
  - Longer-term e.g. degraded ecosystems; mental health impacts
  - Economic impacts (e.g. Turkey)
- Examples of solutions/case studies in country reports:
  - Cross-sectoral approaches to planning for built environment (Japan)
  - Sindh barrage across River Indus (Pakistan)
  - Restructuring health facilities affected by flooding (Malaysia)



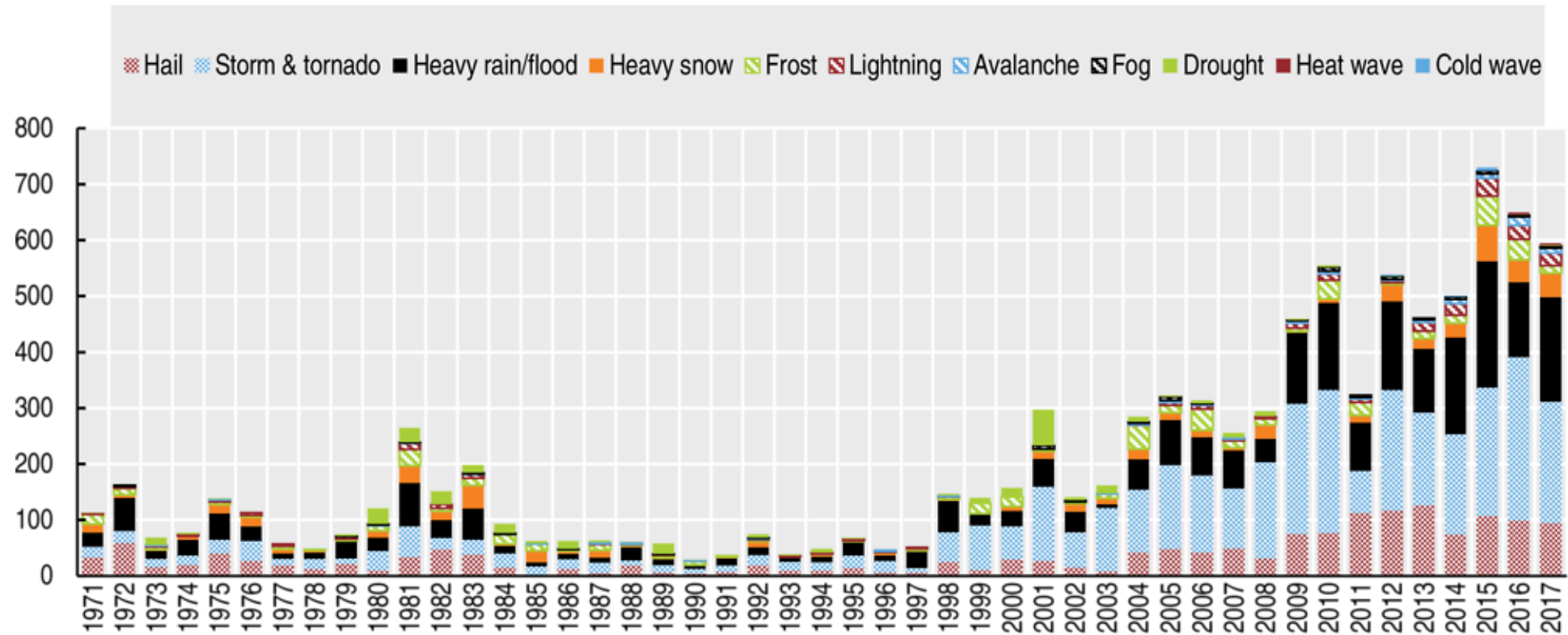
# MALAYSIA flooding case study

- A series of extreme weather events in the Asia Pacific region is a result of Ocean Warming and heavy rainfalls that has occurred in recent decades
- The unprecedented Yellow' flood of late 2014 and 2015 is a recent example of extreme weather event that had occurred in Malaysia and in 2018 in Indonesia.
- Future rainfall trend over the next 50-100 years will only increase



# The number of extreme weather events in Turkey

Number of extreme events per year in Turkey



Note: This figure shows observed heat and cold waves and not calculated ones (cf. TSMS (2018) for calculated heat and cold waves).  
Source: TSMS (2018), *State of the Climate in Turkey in 2017*, Turkish State Meteorological Service, Ankara.

# Health Problem for Refugees

- Refugees are a big problem in Asia region.
- More than 5 million Syrian Refugees.
- There is a **reverse acceleration** in the incidence of diseases that decline to world standards with the application of family medicine in our country, **such as tuberculosis and measles.**
- Although it is not reflected in the statistics yet, the observations of our colleagues in the field confirm this situation.
- Also, the incidence of some infectious diseases such as **oriental boils, hand foot and mouth disease**, which are more frequently found in migrants than our country in the regional sense, is gradually increasing.



# Continuing analysis of solutions and sharing good practice across the region



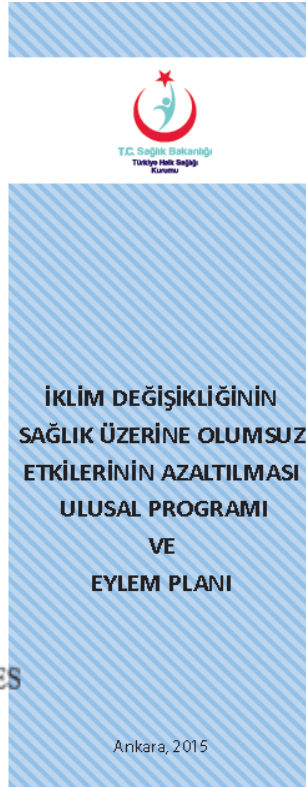
- Mitigation co-benefits for health e.g. by increasing renewable energy, urban planning, reforestation and green space provision, changing agricultural practices
- Adaptation in health sector:
  - Integrating local-national actions
  - Strengthening health services and other infrastructure
  - Public awareness and education
  - Early warning and surveillance systems and control of infectious diseases
- Ensuring linkage of climate change and health issues:
  - At national level, e.g. in NDCs, national adaptation plans for health
  - At regional level and with SDGs e.g. through UN activities



## National Program and Action Plan on Reducing the Adverse Effects of Climate Change on Health

studies have been started in 2010.

Approved on January 21, 2015



# Climate change and Health in Turkey



<b>Name of the Groups</b>	1. Health Indicators Commission	2. Early warning and response commission	3. Research - Orientation - Planning	4. Risk Management
Tasks	Diseases that can be affected by climate change determination and their demographic indicators by considering ICD-10 codes and other related health indicators	Determination of parameters affecting health for early warning  Determination of the response capacity of the health system to climate change	Literature research  Data bank  Determination of research priorities  Preparation of training material	Identification of risk maps  Determination of intervention and information methods for climate change adaptation of vulnerable groups  Determination and follow-up of the relationship between meteorological data and health  Potansiyel sağlık risklerinin belirlenmesi

- In line with the work of the commissions:
  - Targets were set
  - Strategies were determined
  - Activities were listed
- Besides technical and scientific developments,
  - It has been seen that it is time to create general / special models that will respond to the warnings of awareness, awareness, warnings and warnings at national, regional, local, city, neighborhood scales.

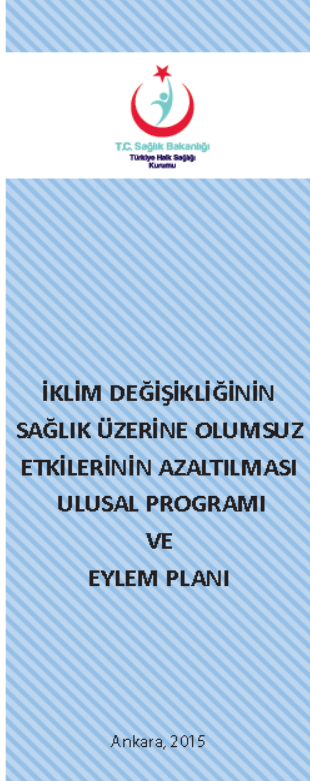


## TRAINING MEETINGS

**TRAINING MEETINGS**  
On  
**NATIONAL PROGRAM AND ACTION  
PLAN TO REDUCE THE ADVERSE  
EFFECTS OF CLIMATE CHANGE ON  
HEALTH**

**19 April 2016, Bursa**

**13-14 September 2017, Ankara**



## CONGRESS ON WATER AND HEALTH



Kasım 2019 / Antalya



## CONGRESS ON URBAN, ENVIRONMENT





- **Education modules**



Bu proje Avrupa Birliği ve Türkiye Cumhuriyeti tarafından finanse edilmektedir

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# Early warning model for air variables in primary protection

## Case Study



Hello, the highest temperature expected today in Aydın ..... and the sun's ultraviolet level is ..... Do not forget to drink water. Do not go out in the sun unless you have to.

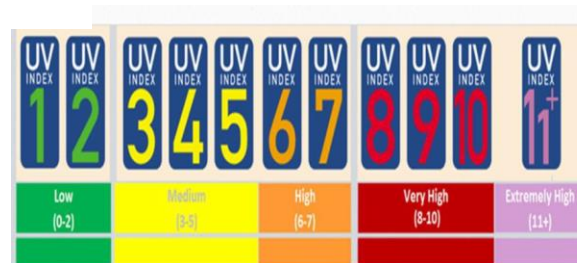
Hello, the air quality index in Aydın is now ..... .. (class). Do not open the doors and windows of your location unless it is mandatory.

### SMS messages



<http://www.aydinerkenuyari.com/>

Started broadcasting on 26.06.2015



# Early warning model for air variables in primary protection

## Case Study



At the end of the study

- In cases where threshold values are monitored for local weather variables and threshold values are exceeded, society's sms, e-mail etc.
- It was observed that the stimulation of digital media creates awareness in the participants and **positively affects their attitudes and behaviors.**

## Steps for Turkey's adaptation process

- **Trainings** since the 2015 National Action Plan and Mitigation of Negative Effects of Climate Change on Health should be accelerated.
- Trained manpower capacity should be increased in the field of climate change and health.
- It should not only be limited to the health sector.
- Other stakeholders should also be included in the training and a common language should be established on the effects of climate change on health.



## Steps Turkey's adaptation process

### Health-sensitive groups

- It is known that **health-sensitive** groups are more vulnerable to climate change impacts. These groups are:
  - Living on the street
  - Homeless
  - In unsuitable accommodation conditions
  - Alone
  - Living without social support
- In this context, it is necessary to identify these vulnerable groups, provide them with priority services, and provide priority services due to the events caused by climate change. These groups are:
  - Infant, child, elderly, pregnant, women, groups with dysfunction



## Steps Turkey's adaptation process

- **Early warning systems** play a major role in minimizing health impacts on climate change.
- In Turkey, the Ministry of Health, General Directorate of Public Health under the "Ministry of Health Threat Early Warning and Response Office" is located.
- The Ministry of Health has the necessary infrastructure to identify and implement early warning components regarding the health effects of climate change.
- According to the WHO report, it should reach the capacity to manage data collection, analysis, evaluation, monitoring, early warning and stakeholder mobilization processes.
- Beyond individual behavioral changes in the USA, early warning systems, extreme temperature emergency action plans, and management plans for temperature related diseases have been proposed.



## Steps Turkey's adaptation process

- **Local level arrangements and activities** should be urgently adopted and awareness raising should be given priority.
- These studies should be at the level of decision makers, society and media.



## Steps Turkey's adaptation process

- **The emergency response mechanism** should be developed.
- Accurate data and evidence are needed to make the immediate response timely, appropriately, and to achieve the goal.
- Database is required to reveal the relationship of climate change and health in Turkey.
- Alignment of databases in use, such as existing disease coding systems ICD-10/11, and training of users is a priority.
- Climate change and health should be a priority area for scientists and academics.





## Steps Turkey's adaptation process

- Both the diseases and vectors affected by climate change, and **the lack of statistical information about climate-related disasters** reduce the success of adaptation practices in this regard.
- The **establishment of a center or institute** in which statistical information collected, research funded and directed within the Ministry of Health, **will contribute to the reduction of the negative effects** of climate change on health by conducting more and correct researches on climate change and the diseases it affects.



Thank you for your attention!



TURKISH ACADEMY OF SCIENCES