

# HEAT IN HYDERABAD (+ TELANGANA STATE)

Avoiding a disaster by dealing with extreme heat

- The impact of heat on India's people and its economy is significant.
- Heat Action Plans (HAPs), whilst not perfect, are in place to address the risks.
- Weather forecasts support early warning to take action and protect the vulnerable.
- The urban heat island effect in cities and towns exacerbates the effect of heat. Sensible policy measures by municipal authorities are key to reducing the problem.

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### Funded by NASA.

# Heat in Hyderabad, India, and work to avoid heat-related disasters (Images collage: various)



# Brief general context:

- India is regularly experiencing periods of extreme heat.
- About 50% of India's GDP is dependent on heat-exposed work in sectors such as agriculture, mining, construction and casual work.
- The economic drain of heat to India has been estimated to be approx. 5.4% to 6.7% of GDP – equivalent to approx. US\$170-211 billion / year using 2021 national GDP data. Outdoors workers are particularly impacted by heat.
- Poor design and lack of planning in urbanisation including heat-trapping human-made structures and a loss of vegetation and natural water areas has led to the urban heat island effect across Indian cities and towns. Measures are being implemented to address this.

## The right mindset:

• Being prepared for periods of intense heat and tackling the root causes of how heat levels are exacerbated is key.

#### The right investment / funding:

- Investment in technology solutions to predict heatwaves is highly likely to reap economic, financial and social benefits.
- Investment in low-cost cooling solutions warrants focus. The private sector can play a valuable support role to government for this.



# Good governance:

- Since April 2017, the Indian Meteorological Department (IMD) has been using a Forecast Demonstration Project (FDP) to help to address the problem.
- The city of Hyderabad in Telangana State has governance measures in place, linked to the Heat Action Plan (HAP) for the State of Telangana, to address the impacts of heat.
- The HAP for the State of Telangana, which incorporates Hyderabad (a city of approx. 10 million people), includes a commitment to use good quality data for decision-making.
- Good urban governance is key, with a focus on sensible passive cooling solutions rather than total reliance on mechanical cooling methods such as air-conditioning.
- Independent audits of Heat Action Plans (HAPs) can drive good governance.

## Good data:

- The Indian Ministry of Earth Sciences (MoES) has established an advanced prediction system for heatwave warnings.
- Earth observations data of land use and monitoring of temperatures provides people with warnings of predicted heatwaves, to take action in good time if they can afford to do so.
- Data for modelling (including understanding urban heat hot spots) can improve the ability to predict the impact of heat in specific areas and to take action to minimise it.

## Meaningful inclusion:

- Good community engagement is critical, especially with those who are most vulnerable.
- Infrastructure such as power (energy sources, transmission lines etc.) and water needs to service people's power and water needs during periods of extreme and intense heat.

#### Meaningful targets:

- Heat-related deaths need a constant focus and a common recognition method.
- Economically, a 1% saving in GDP by reducing the impact of extreme and intense heat would generate a significant economic saving.

# Examples of action taking place:

- In 2019 the India Cooling Action Plan (ICAP) was launched for sustainable cooling.
- In Hyderabad, analysis of local areas using Landsat data has shown Urban Heat Island (UHI) hotspots to focus on.
- Vegetation and water areas are being revived in Hyderabad. Telangana Ku Haritha Haram (TKHH) is a tree planting program by the State of Telangana operating since 2015-16.
- Government support for citizens during intense heat helps avoid heat-related deaths. Actions are being implemented to also improve air quality (which links to heat problems).

#### Example considerations for any city to consider that may help to reduce heat risk:

- How do / can cities or other jurisdictions benefit from having Chief Heat Officers?
- Can cities work with communities on community continuity plans to address heat?
- Can cities liaise with businesses about their business continuity plans to address heat?
- Rather than plan for "infrequent heat events", municipal administrations could consider plausible worst-case scenarios in inclusive workshops to agree actions to take.
- Good data on urban heat reduction solutions needs to be captured and linked to governance to guide policies (e.g. how to implement and maintain reflective surfaces).
- Can positive outcomes resulting from action to tackle heat be shown visually for example, a map of an area showing positive impacts of action taken on people and businesses?
- <u>The Cool Coalition</u> and global think tanks such as <u>the Arsht-Rock Heat Action Platform</u> may be able to offer advice to cities and other jurisdictions to combat heat.

#### Sources:

- Managing Heat in Hyderabad Case Study Supporting Paper (contact author).
- Simple ways cities can adapt to heat (<u>the BBC</u>).
- The Suredis Cities website <u>focus on urban heat</u>.