

# Climate change here and now, effects will prevail

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River Aghanashini in spate near Kumta of Uttara Kannada district on July 22, 2021. Several stranded people had to be evacuated. (Photo | EPS/Gopi Jolly)

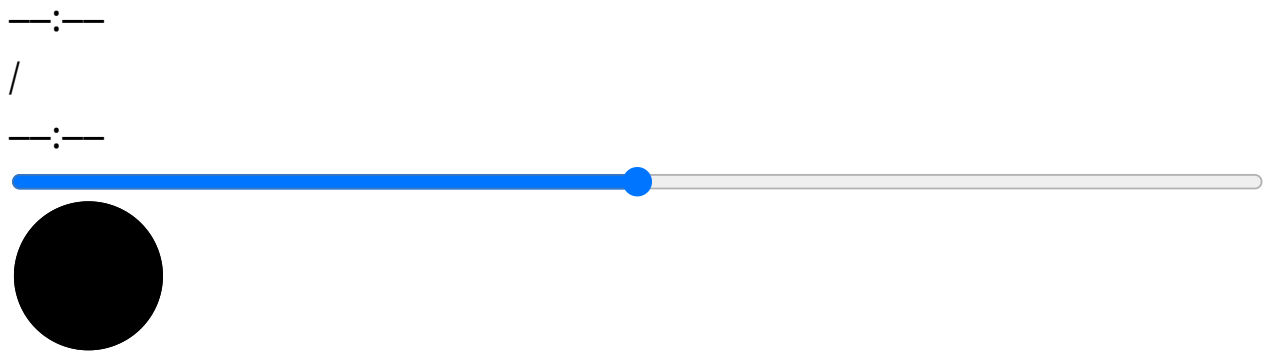
By Bosky Khanna and Amit S Upadhye

Express News Service

**BENGALURU/HUBBALLI:** A traditional community of fishermen from Uttara Kannada district, is known to foretell the weather. Depending on the wind speed and precipitation during summer months, they gauge the upcoming monsoon and its

severity. But ever since the massive tsunami struck in 2004, all their calculations about the monsoons are going wrong, including the heavy rainfall that occurred in parts of Western Ghats mid-July.

It may not be a scientific way to gauge weather, but many global climate change models are predicting extreme climates in most parts of the world. The local effect was seen in Uttara Kannada, Kodagu and Belagavi districts and some other parts of Karnataka in the last few years. While Kodagu suffered the most during 2016 with landslides and flooding, similar conditions occurred in 2019 as well. Uttara Kannada district suffered minimum damage during 2019, but this year, the conditions went from bad to worse.



A village near Sirsi in Uttara Kannada district received 400 mm rainfall in just 24 hours on July 25, causing massive flooding in the region. Similar data was recorded in other parts of the district in mid-July. Experts say that more such extreme climatic conditions will prevail over Karnataka in the coming years. Be it heavy rainfall over a short period of time or prolonged summers and extreme winters, climate change is causing much inconvenience to the local population. Hence, experts are calling for improving the response mechanism to deal with floods.

Climate change experts point out that heavy rainfall and subsequent flooding will soon force several villages to shift to semi-urban areas or even migrate to other cities. Regions which were so far not affected by flooding will witness such conditions in the coming years. For instance, the increased rainfall in parts of North Karnataka is due to shifts in rain catchment areas. This is leading to rise in the water level in rivers and as well as estuaries, they point out.

Professor T V Ramachandra from the Centre for Ecological Sciences, IISc, said the State Government had formed a committee way back in 2009 to study the possible climate change effects on the region. The committee had pointed out severe climate change effects such as flash floods and landslides in Western Ghats region. But successive governments did not take the reports seriously.

“Trees help reduce the severity of floods, maintain infiltration and act as catchment areas. But unplanned development and encroachments have led to destruction of forest cover. Rain-bearing clouds have started to shift and, as a consequence, heavy rainfall is being witnessed in North Karnataka regions. This will continue to happen in the years to come. Similarly, the destruction of the Aravalli Hills has led to severe flooding in Delhi, even as the government blames Haryana and Punjab for it,” he explained.

Prof Ramachandra added that the 2009 floods in Karwar were an indication of climate change. This year, sea erosion in Kumta and Ankola is again a reminder of more to come. He said the government should also immediately stop projects in the Ghats and rivers basins as every river is already dammed. Degradation of forests and land conversion should be stopped. Vulnerable places experiencing immediate effects of climate change (like Kodagu, Chikkamagaluru, Shivamogga and Uttara Kannada in Karnataka), all the way from Kerala to Mumbai, the dry grasslands of Karnataka which are experiencing excessive heat and port areas which are witnessing soil erosion and shifting, should be kept out of major development projects, he suggested.

Experts from the Karnataka Biodiversity Board pointed to the increase in salinity in sea water, reduction in fish breeding areas, a decrease in the fish catch as signs of more to come. Prof Govindasamy Bala from the Centre for Atmospheric and Oceanic

Sciences, Divecha, IISc, said the water-holding capacity of the atmosphere increases by 7 per cent with every degree rise in temperature, which explains why there is a rise in the quantum of rainfall over a short span of time.

He explained that this is the reason why extreme events are being experienced - like intense summer heat and fluctuations in winter. In the case of the coastal areas, Prof Bala said the sea level has globally risen by 20 cm. It can be seen more so in estuaries when there are extreme events like heavy rainfall, more water entering from rivers to seas and oceans.

Prof Bala noted that the start of climate change came with the start of industrialisation. Though the impact has been gradual, the effects now seen are rapid and the solution to reduce its impact should be even more rapid. “Even today, in India, 60 per cent of the energy is from fossil fuels and almost all rivers in India are dammed. The shift should be aggressively towards solar and wind energy and its storage so that the impact of climate change is slowed down,” he felt.

“Several property owners in the Malnad region have begun to close down their businesses due to recurring losses over the years due to floods. Many have already shifted their wards to cities and join them after a few years. This clearly shows that climate change has not just impacted the environment but also the economy of regions,” pointed out P M Muttanna, a wildlife conservationist from Kodagu.

“While there is a positive impact of climate change (heavy rainfall) that has helped locals achieve water security, and choice of growing different crops, at the same time many have started to shift to other areas. The heavy downpour over the last few years and the forecast of more in the coming years will have long-term effects like families moving away and several active plantations going unattended. In Kodagu, several paddy cultivating lands were converted into commercial properties which decreased the water-holding capacity of the area, leading to flash floods,” he explained.

Shivanand Kalave, environment and agricultural expert from Uttara Kannada, pointed out that several virgin hillocks in the Sahyadri region of the district have witnessed landslides. “This year, due to rainfall in May and early June, the ground

had enough moisture and the excess rainfall caused the flash floods in the region,” he pointed out.

### THE COST TO K'TAKA IN 3 YEARS

LANDSLIDE AND FLOOD DAMAGE	
2018- August	₹4,984.76 cr
2019- August- September	₹35,160.81 cr
2020- August- October	₹23,764.86 cr

HUMAN LOSS	
April 1, 2018- March 31, 2019	148
April 1, 2019- March 31, 2020	106
April 1, 2020- March 31, 2021	151

ANIMAL DEATHS		HOUSES DAMAGED	
2018	240	2018	7,865
2019	65,611	2019	2,47,628
2020	1,841	2020	44,892

### Disaster pinch points

Karnataka has 23 flood-prone districts, of which 15 are high risk and eight are moderate

There are 148 flood-prone taluks

There are 373 flood-prone hoblis

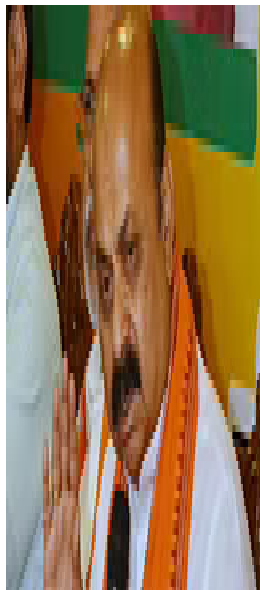
There are 717 flood-prone gram panchayats

Highly flood-prone districts: Bagalkot, Ballari, Belagavi, Bidar, Chikkamagalur, Kalaburagi, Koppal, Raichur, U-K dist, Vijayapura and Yadgir

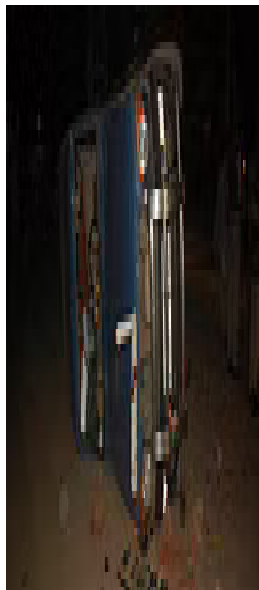
Moderately flood-prone districts: Shivamogga, Davangere, Dharwad, Gadag and Haveri

Landslide-affected districts from 2011-2020: Uttara Kannada, Kodagu, Shivamogga, Dakshina Kannada, Chikkamagaluru, Hassan, Udupi and Belagavi

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No innocent person held over Hubballi violence:



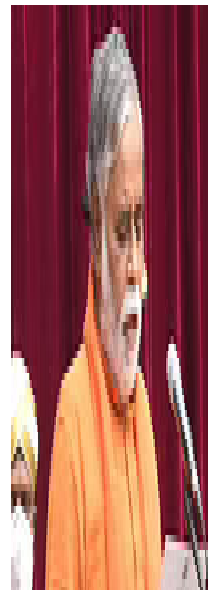
Stones used in Hubballi violence collected from



Free Clinic on Wheels' initiative in Bangalore by



CID raids BJP leader's house, arrests her



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