

Chennai / Paris The Global Warming Apocalypse for India

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The climate change negotiations in Paris will almost certainly get the world a deal, but not one that will prevent a 2°C increase in global temperatures. The problem is that the current temperature rise of 1°C is already too high. The Chennai floods and a number of other episodes indicate that climate change is not in the future: Climate change and its effects are already upon us. The future is now.

Let's tick off some of those episodes. The Chennai floods are related to El Niño changes which can be traced back to climate change. Climate change caused a cotton-crop infestation in Punjab and is already contributing to social unrest there. There is a view that rising temperatures and falling water availability were linked to the rise of Maoism in central and eastern India. The cloudburst in Uttarakhand in 2013 was likely induced by climate change.

The effect of climate change is not restricted to India. The entire area from North Africa to Bangladesh is perhaps the most susceptible to climate change. These are also the areas of the world with the weakest governments, the highest civil unrest (to put it mildly), abysmal human development, a tickling demographic and gender time-bomb, unmatched religious and ethnic strife, and largescale unemployment.

An example of what that can mean is Syria. Food and water shortages in Syria combined with a host of political, developmental, demographic, gender, and ethno-religious factors caused the state to collapse. Indeed, the entire Arab Spring was fuelled if not caused by the increase of food prices from about 2008 onwards, some of which can be attributed to climate change, and Syria-like political and economic conditions.

As climate change deepens, extreme weather events will intensify, and the polar ice caps will melt causing sea levels to rise. Over time, cities will be repeatedly flooded, from excess rainfall and rising sea levels. Several big cities will go under water more or less simultaneously, to the point that recovery will be impossible. They will simply have to be abandoned. Kerry Emanuel, a professor at MIT, Cambridge, predicts that New Orleans will have been either abandoned or moved within a hundred years. I doubt that we will have to wait that long for several Indian cities to disappear as human habitats.

India will therefore be assailed by an enormous shift of desperate people—from within India and from our neighbours—moving inland. They will encounter others ek-

ing out an existence in fairly miserable conditions on higher land. It doesn't take much imagination to see what might ensue as migrants come into contact with settled populations and compete for land, water, shelter, government jobs and social services.

India is poised for a perfect storm of a physical and social change. It is unlikely that there will be serious mitigation efforts globally. The only question therefore is whether temperatures will go beyond a 2°C rise. Adaptation—how to deal with the consequences—has largely been ignored. Focussing on adaptation risks the moral hazard problem: If we adapt, we don't start putting in place systems to save Indians from the worst effects of climate change, millions will die, and our unity and democracy will collapse.

Ahead of us is the bigger question that Amitav Ghosh recently hinted at, one that Ramachandra Guha in 2006 phrased as, 'How Much Should a Person Consume?' Western industrialisation sees no end to consumption. India can never be industrial in that way, for various cultural, political and economic reasons. It must create a soft industrialisation that generates wealth such that the vast majority of its population is assured a decent life, not a life of excess. India's genius in manufacturing is not the Make-in-India model of Prime Minister Narendra Modi but rather historically a model that doesn't rely much on heavy machinery. It relies on softer skills, in handicrafts, textiles, leather work, jewellery, food processing, pharmaceuticals, computer programming and the like, organised on a smaller, gentler scale.

The global warming apocalypse is upon us. It is our biggest challenge. India must think the change it wants to see.

(From *The Times of India*)

Corrigendum and Apology

Bionotes in its last issue erroneously published a felicitation article reporting that Dr. T.N. Ananthakrishnan is completing his 90 years in Dec. 2015. It proved to be unfortunately wrong, as Dr. Ananthakrishnan left us on 7th August 2015. Since he lived in New Jersey (U.S.A.), we were not aware of the tragedy. With no excuse, I personally and *Bionotes* tender sincere apology.

By that article, we remembered his life and works in detail.

—R.K. Varshney, Editor *Bionotes*