

## Spotlight on...water and power

During the summer of 2009, I did what most JETs do during summer holidays and spent three weeks travelling. My destination was the exotic subcontinent of India, a developing nation home to one sixth of the world's population.

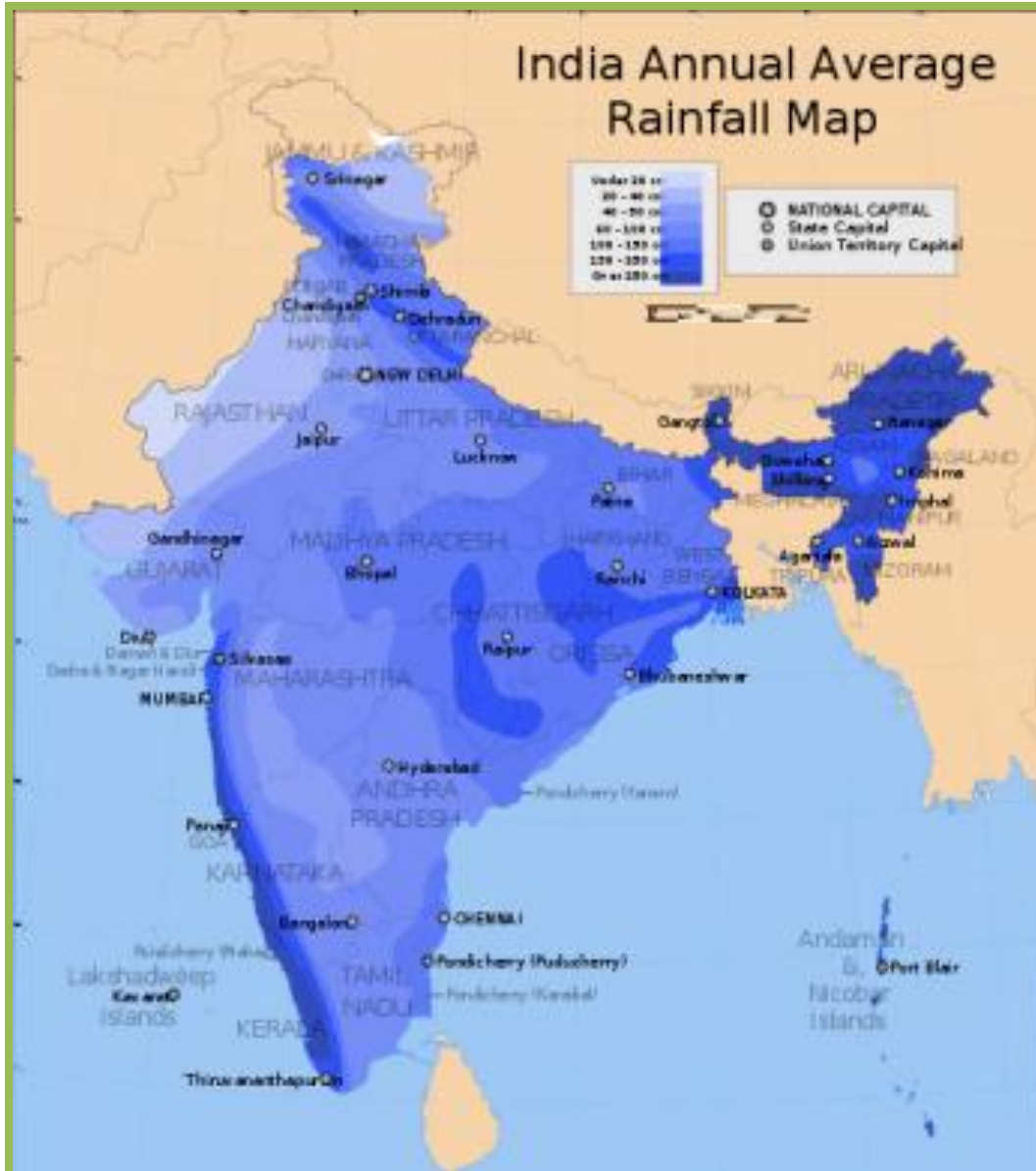
Here's some backstory. In the developed world we have access to certain amenities. When we flick the light switch, the lights always turn on. When we turn on the tap, clean water always comes out. It's a fact...a fact we often take for granted...a fact I often took for granted.

In India, it's not something taken for granted. Due to the sheer number of people in the country, power and water shortages are a real concern. Not only are there a lot of people who need a lot of water and power, there is another issue as well.

First, let's talk about water. India's climate is extremely varied across the subcontinent, but one thing remains consistent. Even in the "wet" areas of the country, the majority of the rainfall happens during a three to four month monsoon period during the summer months. The water that falls during these months is essentially the water supply for the next year. So, when the monsoon rains don't come (or come late or not often enough) the country is thrown into a state of panic and there are widespread water shortages. (And, as aforementioned, even when the monsoon does come there are over a billion people who require access.)

As if that wasn't bad enough, things are about to get worse. Almost all of the power in India is generated in ways that require water. Here's the breakdown: 75% is thermal (steam powered), 21% is hydroelectric (obviously requiring H<sub>2</sub>O) and 4% is nuclear powered (where water is used to cool the towers). (The percentage that comes from renewable energy is at this point, unfortunately, insignificant in most areas of the country.) What this means is that the limited amount of water in India is not only used by the people...a large share of it is allotted to power companies in order to provide the people with electricity.

So even under ideal conditions, power cuts are common since a lot of people need a lot of power. Once we add drought to the pile, stoppage of electricity begins to happen more and more often, since there is less water available to create power. And it's difficult for people to complain, since making more electricity requires more water for the power companies, and that means less water available for public consumption. Basically, it's a double edged sword.



Regional variation in rainfall across India. The monsoon season delivers four-fifths of the country's precipitation.

# PROJECT OUTREACH

Energy supply and demand in India.

