

# INCLUSION IN ACTION

## How Can Math Help Us Imagine Responses to Global Issues?

**Olga Shatunova**

*Assistant Teaching Professor of Mathematics IAS SAM*

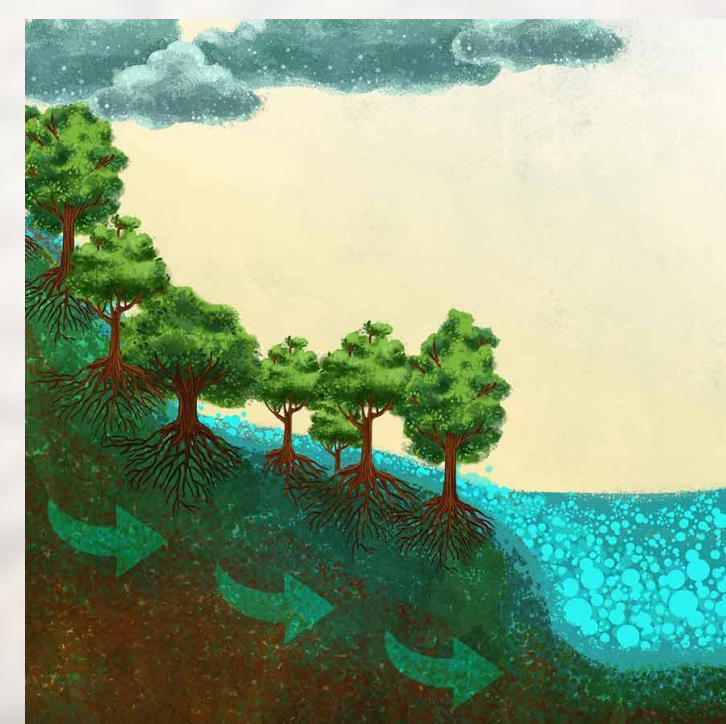
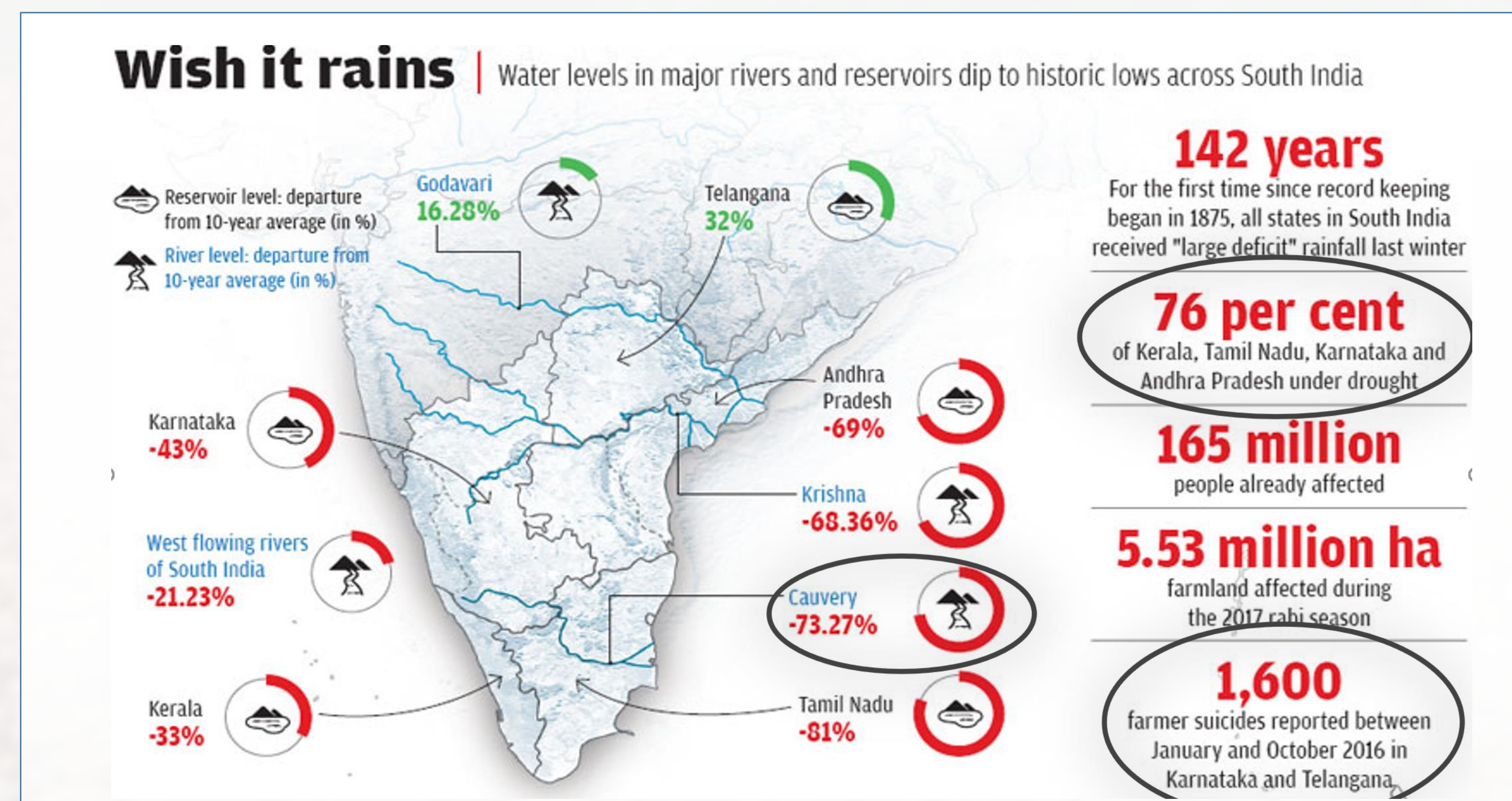


*In my math classes, we use real life examples of data and applications to interest and motivate students. In TMATH 110 (Introduction to Statistics) course we brought math thinking into the study of global societal problems.. Students need to infuse tools of science and technology with a deep sense of inclusiveness and compassion in order solve global issues. I design class activities to create an inclusive culture to promote open conversations about global issues and how to bring progress and harmony.*



Rivers in India are undergoing a drastic and rapid changes. Perennial rivers are becoming seasonal and not reaching the ocean. Many small rivers disappeared. Deforestation rapidly turned the land into desert. Cauvery River was the lifeline of southern India for thousands of years. Cauvery Delta was a “Rice bowl” supporting 4.4 million people. It was 46% depleted and lost 87% of tree cover in the last 70 years. This crisis was creating a situation of growing despair: 83% of farmers in Tamil Nadu are in debt. Many were dying from suicide or heart attacks (both the farmers and their wives). About “45,600 farmers have committed suicide over the last decade” and nearly 300,000 farmers have committed suicide in the last twenty years.

Sadhguru (Jaggi Vasudev) founder of Isha Foundation is the architect of Cauvery Calling campaign, that encouraged farmers to adopt tree-based agriculture. It is the economic model with a common ecological goal to restore the tree cover and soil.



Students learned about an ongoing Cauvery Calling movement – the world’s largest eco-movement. The ambitious goal is to enable 5.2 million farmers to plant 2.42 billion trees in the Cauvery River Basin in 12 years by adopting agroforestry. Bringing the river back would transform the lives of 84 million people in India that depend on the Cauvery for drinking water, irrigation, and electricity from its water dams.



## RESULTS AND DISCUSSION

Groups came up with different plans of action. Students shared them on social media and raised money to plant nearly 800 trees in Cauvery River basin. Students learned and practiced inclusion and raised their human consciousness. They experienced inclusiveness, learned to take charge of their own life and empower others.

Students investigated a problem, gathered data and made meaningful group presentations using descriptive statistics. With a firm understanding of principles of statistical thinking and a shared framework for presenting research, the teams presented their projects. They investigated the background of local issues and history, implications and ideas for solutions. Tying problems and challenges to the ideas of design thinking (human-centered ways to solve problems in a creative and innovative way), the students presented their projects to the class. Questions were asked, solutions explored, and the teams had a chance to revise, reimagine, rethink their conclusions on the spot. Every group presented the list of possible actions.

Applied research can change lives and can begin as early as TMATH 100 and applying descriptive statistics and design thinking to make a difference wherever students put their advocacy and energy. A video of one of the final projects uploaded on YouTube as part of the presentation and is available at [https://www.youtube.com/watch?v=Jw\\_Y0lfofFs](https://www.youtube.com/watch?v=Jw_Y0lfofFs)

## REFERENCES

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