Enabling cross-regional exchanges to advance knowledge on impacts of global warming

Q&A with Aradhana Yaduvanshi, researcher in Hydro-Meteorology with the Watershed Organization Trust (WOTR) in India

Thanks to a Small Opportunity Grant Aradhana was able to expand her knowledge, further her research on regional impacts of global warming, and travel to Cape Town to work directly with Mark New and Modathir Zaroug from the African Climate Development Initiative (ACDI) to structure her research.

Aradhana Yaduvanshi in South Africa

How did the idea of the exchange with the ACDI came to life?

With ASSAR, I was tasked with analyzing the likely impacts of 1.5˚C and 2˚C global warming levels on regional rainfall and temperature changes in India. During this work, it became clear to me that it will be crucial to understand the impacts of climate extremes that may occur apart from rainfall and temperature changes. Modathir Zaroug and Mark New had worked extensively on this topic for the African continent, and I thought that interacting directly with them would provide invaluable input to the study.
A call for Small Opportunity Grants came into the picture, and I wrote a proposal, which was accepted.

What has been the advantage in participating in the exchange?

Exchanges like this always help you to grow and learn more as an individual. My interactions with Professor Mark New were highly enlightening, they were particularly useful in terms of structuring the study and choosing suitable data sets. Working with the communications team at ACDI on infographics and other research-into-use products was new for me, and I found it fresh and informative. The learning sessions with Dr. Modathir Zaroug also helped me significantly in understanding CMIP5 model data processing and analysis. Thanks to Dr. Zaroug I was also able to attend a session on the IPCC at a CORDEX workshop, an unplanned and memorable experience. All of these connections helped me in broadening my knowledge base.

How has the exchange impacted your approach and career?

Before, my work was confined to technical aspects of research. Interactions with professors and researchers during the exchange broadened my view and equipped me to work on policy-oriented research and research-into-use as well. This opportunity enabled me to pursue my dream research, bridging the gap between the science of climate change and practice on the ground.

"Before, my work was confined to technical aspects of research. Interactions with professors and researchers during the exchange broadened my view and equipped me to work on policy-oriented research and research-into-use"

What is next?

From the very first day we were determined to publish a research paper out of this study. Our initial proposal focused on understanding the impacts of climate extremes at three global warming levels (1˚C, 1.5˚C and 2˚C), but gradually we decided to include two more warming levels, 2.5˚C and 3˚C. While the publication of the two papers in still in progress, an information brief and a poster are available on the ASSAR website.

4 Findings of ASSAR's Work on 1.5-2 Degree Warming in India

Global warming of 1.5°C would bring severe impacts at the local level in semi-arid regions.

1. At different warming levels, moving from 1.5°C to 3°C, there is an increase in regional rainfall, temperatures and climate extremes in semi-arid regions of India, which are already hot places to live.
2. Warmer days and longer duration heat waves would be the new normal for semi-arid regions.
3. Partial increases in annual mean rainfall for semi-arid regions of India with intense and frequent wet spells are projected under 1.5°C and 2°C global temperature rise.
4. Health of communities residing in semi-arid regions along with agriculture and water resources would be threatened by the rise of global temperatures up to 1.5°C and beyond.