Ghana version

Flooding impacts less severe when citizens join forces - study

Extreme weather caused by climate change - such as flooding - will be easier to prepare for after scientists developed a new method that empowers citizens to identify solutions to the threats their communities face.

The approach works by researchers bringing community groups together to discuss and understand the likely impacts of climate change in a local area. In parts of Ghana, these include flooding, bushfires, drought, coastal erosion, sea level rise, saltwater intrusion and invasive alien species.

Most climate adaptation initiatives are developed by governments or by businesses, rather than to help citizens help themselves. The new approach, which is published today (Thursday, 19 June) in *Nature Climate Change*, was created by experts from the CSIR-Water Research Institute in Ghana and the Universities of Reading and Surrey in the UK. It involves generating maps and networks that can help citizens to identify solutions to the threats their communities are set to face.

Dr Emmanuel Obuobie, from CSIR, Ghana said: “Citizens need to be aware that they are at the centre of the adaptation agenda. They also need to be aware of adaptation measures other than what they presently use, so they can better adapt to the impacts of climate change. The methods used in this study can help create the needed awareness.”

Adaptation plans

The method was piloted by communities in the lower Volta Basin in Ghana. The citizens in each group worked together to discuss the actions that individuals can take to help protect themselves, their households and their communities from the consequences of climate threats. These included afforestation and storing freshwater, tree planting, dredging rivers and blocking flood channels with sandbags.

Participants discussed their shared experiences in putting in place these actions before developing their own ‘personal adaptation plans’, identifying which specific interventions they intended to pursue, how they might achieve them and the expected timeframe. Overall, participants found that the process increased their awareness and their preparedness for climate change impacts.

Global collaboration

The method was piloted internationally, namely in Reading, Oxford and Wallingford in the UK, and by villagers on Majuli Island in the Assam region of India with help from the Indian Institute of Management Nagpur.

In India, communities discussed major challenges from flooding and erosion impacting housing and vulnerable agriculture. Their solutions included short-term actions such as storing feed for livestock before floods and longer-term measures such as exploring alternative sources of income (such as fishing and weaving).

In the UK, groups discussed the impacts of flooding and heat stress. Actions included storing more long-life food and better-insulating homes from heat to help households respond to floods and heat waves. Proactive actions included lobbying the government for action to prevent the greatest impacts of climate change.

Participants from all three regions involved in the study shared their results and learned how their responses were applicable to where they lived. A participant from Ghana said: “I have

more information on how other people are adapting to climate change in the UK and India and these are also applicable to me here in the village."

Notes to editors

"Empowering citizen-led adaptation to systemic climate change risks" will be published on Thursday, 22 June 2023 at 16:00 BST and 11:00 US Eastern Time.

The DOI number for the paper will be 10.1038/s41558-023-01712-6. Once the paper has been published online, it will be available at the following URL: https://www.nature.com/articles/s41558-023-01712-6

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