RESEARCH PROGRAM ON
Climate Change, Agriculture and Food Security

Beyond the climate science: CCAFS downscaled climate data applied by development agencies around the world

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CCAFS Outcome Case

Unit	CCAFS Theme Leaders
Year	2013
Contacts	Andrew Jarvis; Philip Thornton
Themes	Long term adaptation; Data and tools
Geographic focus	Global

Summary

In sub-Saharan Africa and South Asia, the limited availability of climate data and networks for sharing information can serve as a constraint to agricultural research and development. The lack of basic understanding of earth processes needed to detect flaws in climate models and decide how best to combine climate and crop models in research is another constraint. In order to address these contraints, CCAFS reviewed the knowledge on climate data and crop modelling and ways of coupling agriculture–climate predictions. The result was the successful development of CCAFS-Climate, a data portal that has become the place to get free and open-access downscaled climate data useful for understanding the effects of climate change on agriculture. The portal includes the MarkSim GCM tool, which generates plausible daily data for future climates. Since its launch, the CCAFS-Climate portal has become popular among the research community as well as with other stakeholder groups. Almost 1700 institutions from 185 countries have used the portal for a range of purposes, including: studying climate change impacts at the country-level for informing decision makers, government planning, informing crop insurance policy development, and water policy development. The users included around 400 non-research institutions from 60 countries, indicative of the portal's popularity outside of the research community.

Key facts

- CCAFS-Climate provides downscaled climate data for understanding the effects of climate change on agriculture.
- Downscaled climate data from CCAFS-Climate is being used for a range of different purposes including: studying climate change impacts at the country-level, government planning, informing crop insurance policy development, and water policy development.
- Over 400 non-research institutions from 60 countries used downscaled climate data from CCAFS-Climate.

Lessons: key elements of success

- Needs-based approach focused on pressing issue of limited availability of downscaled climate data.
- Collaboration across CGIAR centres and advanced research institutions.

Further reading

- CCAFS Climate portal
- MarkSim GCM
- Hot out of the oven! Fresh data from CCAFS-Climate
- New updates to MarkSimGCM weather generator

Related research outputs

Ramirez-Villegas, J., Challinor , A.C., Thornton, P.K., & Jarvis, A. (2013). Implications of regional improvement in global climate models for agricultural impacts research. *Environmental Research Letters, 8*, 024018.

Jones, P.G., & Thornton, P.K. (2013). Generating downscaled weather data from a suite of climate models for agricultural modelling applications. *Agricultural Systems, 114*, 1-5.