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Book on Climate Change and Agriculture in Gujarat

1 message

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Mon, Apr 17, 2017 at 5:33 PM

A Book by Collaborations of SAUs of Gujarat, State Agriculture Department – Government of Gujarat and Florida Agricultural & Mechanical University (FAMU), Florida, U.S.A. is to be published on "Climate Change and Agriculture". The focus of the book will be experience in Gujarat – India – Impact of Climate Change and ways to meet the challenge.

Abstracts are invited on the topics mentioned in the attached book outline from the scientists of your University from which selection will be made and selected scientists will be asked to send full length paper. You are requested to circulate the attached topics to the selected scientists of your University who may send the abstracts to dr@jau.in.

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 Book Outline.pdf
93K

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N. A. U., RAIGADH.

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Climate Change and Agriculture in Gujarat, India

Lead Authors: Dr. S. Prasad, Dr. O.S. Mbuya, Dr. K.N. Shelat, Dr. N.C. Patel, Dr. A.R. Pathak

Co-Authors: Faculty from AAU and JAU (assigned to different subtopics based on expertise)

Abstract:

Outline:

- Introduction: General overview of climate, climate change and agriculture in Gujarat
- 1 Major crops and livestock raised in Gujarat: Agronomic, horticultural and animal production.
- 2 Potential impacts of Climate Change on Agriculture:
 - 2.1 Potential impact of increased temperature and temperature extremes on:
 - 2.1.1 Crop growth and development
 - 2.1.2 Insect pests, diseases and weeds
 - 2.1.3 Crop yield and quality
 - 2.1.4 Chill accumulation/degree day
 - 2.1.5 Livestock
 - 2.1.6 Heat stress to crops, livestock and humans
 - 2.2 Potential impact of changes in precipitation pattern, amount and intensity on:
 - 2.2.1 Flooding
 - 2.2.2 Drought
 - 2.2.3 Fertilizer and pesticide application and management
 - 2.2.4 Soil erosion
 - 2.2.5 Leaching of nutrients (fertilizers)
 - 2.2.6 Water quality (surface and groundwater)
 - 2.2.7 Water supply and availability
 - 2.3 Potential impact of elevated carbon dioxide (CO₂) on:
 - 2.3.1 Crop yield
 - 2.3.2 Canopy temperature
- 3 Adaptation to climate change
 - 3.1 Alternative crops:
 - 3.1.1 Introduction of new crops
 - 3.1.2 Breeding of new cultivars
 - 3.2 Improved weather and seasonal predictions
 - 3.2.1 Weather (1-10 days forecast)
 - 3.2.2 Seasonal (1-6 months forecast)
 - 3.2.3 Use of agro-meteorological indicators for adaptation
- 4 Precision Agriculture
 - 4.1 Spatial and temporal variability
 - 4.2 Efficient use of farm inputs based on spatial and temporal variability
 - 4.2.1 Application of agrochemicals (fertilizers and pesticides)
 - 4.2.2 Irrigation
 - 4.3 Wireless sensor networks for precision agriculture
 - 4.3.1 Data harvesting, storage and transmission
 - 4.3.2 CyberSecurity for precision agriculture

- 4.3.3 Crop modeling
- 5 Agricultural economics: Local and global implications
- 6 Impact of climate change on food security
 - 6.1 Availability
 - 6.2 Access
 - 6.3 Utilization
 - 6.4 Stability
- 7.0 Conclusions