

## V. Uma Maheswara Rao

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### Experience :

Sep 2010- till to date: Project Coordinator (Ag. Met.), CRIDA, Hyderabad  
Mar 2006 -Aug 2010: Principal Scientist (Ag. Met.), CRIDA, Hyderabad  
Jul 2002 - Feb 2006: Prof. & Head, Dept of Agrometeorolgy, CCS HAU, Hisar  
Aug 1998 - June 2002: Senior Agrometeorologist, CCS HAU, Hisar  
Feb 1990 - Jul 1998: Agrometeorologist (PI- AICRPAM), CCS CCSHAU, Hisar  
Jan 1983 - Jan 1990: Assistant. Scientist (PI- AICRPAM), CCS HAU, Hisar

### Membership :

Life member for "Indian Meteorological Society", IMD, New Delhi.  
Life member for "The Arid Zone Research Association of India", CAZRI, Jodhpur.  
Life member for "Indian Society of Remote Sensing", IIRS, Dehra Dun.  
Life member for "Association of Agrometeorologists", AAU, Anand.  
Life member for "The Indian Society for Dryland Agriculture", CRIDA, Hyderabad.  
Member for "International Society for Agrometeorology", Netherlands.

### Education :

Ph.D., 1981, AU, Visakhapatnam, Meteorology with specialization in Agro met.  
PGDIAS., 1980, AU, Visakhapatnam, Statistics with the topic Allied Statistics.  
M.Sc., 1977, AU, Visakhapatnam, Meteorology with specialization in Agro met.  
B.Sc., 1975, AU, Visakhapatnam, Physics, Maths and Chemistry.

### Awards/Honours/Recognitions:

#### National honours/ awards

1. Society of agricultural professionals recognition award for the year 2012 for outstanding contribution in the field of Agrometeorolgy and for strengthening and promoting the society.
2. Fellow of Association of Agro meteorologists (**FAAM**) for the year 2011
3. **CSIR** award for Ph.D
4. **CSIR** award for PDRF(1982)

#### Other honours

1. **Member** of XI plan High Power Review Committee of Ministry of Earth Sciences, Government of India (2012)

2. **Expert Committee Member** for implementation of Hail Control System in the state of Himachal Pradesh constituted by Ministry of Agriculture, Government of India (2012)
3. **Vice President**, Association of Agrometeorologists (2010-2012)
4. **Member**, Executive committee, Indian meteorological society, New Delhi (2010-2012)
5. **Expert member**, Agricultural Insurance Corporation, New Delhi (2009)
6. **Member**, Executive committee, IMS, Hyderabad Chapter (2008-2010)
7. **Member**, Board of Studies, College of Agriculture, CCSHAU, Hisar, (2002-2006)
8. **Vice President**, Association of Agrometeorologists (2001-2003)
9. **President**, Association of Agrometeorologists, Hisar Chapter (1998-2004)
10. **Member**, Board of Studies, Department of Atmospheric Sciences and Ocean Sciences, Kurukshetra University, Kurukshetra (1997-99)
11. **Member** Selection Committee for Associate and Assistant Professors in Agrometeorology
12. **Member**, Institute Management Committee, CRIDA, Hyderabad
13. **Member**, Institute Management Committee, NIASM, Baramati
14. **External Expert** of Assessment Committee of Professor and Associate Professor in Agrometeorology
15. **External Examiner** for Ph.D and M.Sc Thesis evaluation and Comprehensive Viva Voce and Practical Examination at different SAUs and traditional universities.
16. **Paper Setter** for Under Graduate and Post Graduate Programmes at different SAUs and Traditional Universities

### Publications:

Research papers, seminars/symposia	..	155
Popular articles	..	6
Manuals/teaching aids developed	..	5
Research bulletins/chapters	..	42
Books	..	6
<b>Total</b>	<b>..</b>	<b>214</b>

### Projects handled:

- Scheme In charge of AICRP on Agrometeorology, 1983 to February 2006, CCSHAU, Hisar
- PI, NCMRWF (DST) Project, September 2002 to February 2006, CCSHAU, Hisar
- PI, Energy-water balance & crop growth monitoring using satellite data project, 2002 to March 2006, SAC, ISRO, Ahmedabad
- PI, Economic Impact assessment of AAS of NCMRWF project, 2003 to March 2006, DST, GOI, New Delhi
- Co-PI, Crop growth simulation modelling on cotton 1990 to 1993, DST, GOI, New Delhi

- Associate, Development of weather based forewarning systems for cotton pests and diseases, 2001 to 2004, NATP, ICAR, New Delhi
- Co-PI, Dew measurement studies in winter crops in semiarid regions 2004 to 2006, ICAR, New Delhi
- Co-PI, Preparation of Agroclimatic Atlas of Haryana, 2005 to 2006, ICAR, New Delhi
- Principal Investigator, Network Project on impact, adaptation and vulnerability of Indian Agriculture to climate change, 2004-2010
- Principal Nodal Officer NCMRWF (DST) projects at Kaul, Haryana, 2005 to 2006
- Principal Investigator of Agroclimatic resource characterization of Andhra Pradesh, 2007-2008
- Co-PI, Validation of High resolution model forecasting and utilizing them in pest/disease forewarning and contingency planning for Andhra Pradesh, 2008-2012
- Co-PI, Agroweb-Digital Dissemination System for Indian Agricultural Research (ADDSIAR), 2008-10
- Co-PI, Modelling the performance of a few major cropping systems in Eastern India in the light of projected climate change, 2008-2012
- Co-PI, Assessment of impact of regional climate variability/change on agricultural land use in rainfed regions, 2009-2012
- Co-PI, Modelling mean weekly diurnal patterns of air temperature and dew point temperature and/or relative humidity from daily values thereof-A case study for Hyderabad, 2009-2011
- Co-PI, Assessment of performance of sorghum and maize in the Dryland areas of Andhra Pradesh, Maharashtra and Rajasthan in the light of climate change, 2009-2011
- Co-PI, Development of weather index based insurance module for selected crops and other agricultural sectors, 2012-2017
- Principal Investigator, Development of strategies for improved agromet advisories at micro level and their dissemination, 2012-2017
- Co-PI, Assessing the Impact of climate change on rice production in the eastern region of India using DSSAT (CERES) rice model, 2012-2015
- Co-PI, Assessing vulnerability to Climate Change, 2012-2017
- Co-PI, Assessment of relative performance of crop simulation models for dryland crops, 2012-2015
- Co-PI, Pest and disease dynamics under climate change scenario, 2012-17
- Co-PI, Quantifying Green House Gas (GHG) emissions in rainfed production systems, 2012-2015

### **Outputs delivered:**

- **Organising Secretary**, National Symposium on Climate Change and Indian Agriculture: Slicing Down to Uncertainties, 22-23 Jan , 2013, CRIDA, Hyderabad
- **Course Director**, 5th SERC School: Agricultural Drought - Climate Change and Rainfed Agriculture during 20th January to 9th Feb 2011, CRIDA, Hyderabad
- **Co-Convenor**, National Symposium On Climate Change and Rainfed Agriculture during Feb 18-20, 2010, CRIDA, Hyderabad

- **Course Director**, DST Sponsored Training Program on Advances in Plant - Atmospheric Interactions 22nd Oct to 11th Nov 2009, CRIDA, Hyderabad
- **Convener**, International Symposium on Agrometeorology and Food Security during 18-21 Feb 2008, CRIDA, Hyderabad
- **Attended** WMO sponsored International Workshop on Agrometeorological, Risk Management, 25 – 27 October 2006, New Delhi.
- **Co-Course Director – 4<sup>th</sup> SERC School on Aspects of Drought: Micrometeorology** 25 Sep 06 to 15 Oct 2006, CRIDA, Hyderabad
- **Course Director**, Short Course on “ Weather Based Agro Advisories: Value Addition” 30 Nov to 9 Dec 2004, CCS HAU, Hisar
- **Head of the Department** from Jul 2002 to Feb 2006 worked in Dept of Agrometeorology, CCS HAU, Hisar
- **Organising Secretary**, 12<sup>th</sup> Annual Review Meeting of Agro-Advisory Services, 11-13 Nov, 2002, CCSHAU, Hisar
- **Drawing and Disbursing Officer** from 1990 to 1998
- **Secretary**, Department Advisory Committee, Department of Agricultural meteorology, CCSHAU, Hisar, 1990-1995
- **Organising Secretary**, 12<sup>th</sup> Annual Review Meeting of Agro-Advisory Services, 11-13 Nov, 2002, CCSHAU, Hisar
- Taught General meteorology, Micrometeorology, Physical meteorology, Evapotranspiration, Crop weather forecasting, Concepts of Agrometeorology, Advances in agricultural meteorology, Agro climatic models, and Crop and environment courses to undergraduate and post-graduate students during **1983-2005**
- **Officer-in-Charge**, Agro met Instruments and Observatory since 1983-2002
- **Guided PG students** in Agrometeorology, **MSc (8) & PhD (4)**

#### **Trainings given and attended:**

##### **Outside India:**

- Physical climatology for solar and wind energy, ICTP, Trieste, **Italy (21 Apr 86 to 16 May 86)**
- Water production functions, USU, Logan, **USA (16 Aug 89 to 18 Jan90).**
- GIS and RS use in Agricultural production management, **Texas, A&M, CS, USA (13 Jan 99 to 31 May1999)**
- Agroclimatic Analysis – Vulnerability to Climate Change: Adaptation Strategies and Layers of Resilience, **Bangkok, Thailand (30 Sep 2009 to 04 Oct 2009)**
- Vulnerability to Climate Change: Adaptation Strategies and Layers of Resilience and International Workshop on Building Climate Resilient Agriculture in Asia, **Dhaka, Bangladesh (03 May 2010 to 07 May2010)**
- Vulnerability to Climate Change: Adaptation strategies and layers of resilience and Policy dialogue on building climate resilient agriculture in Asia- Vietnam, Ba Dinh-**Hanoi, Vietnam. (21 Sep 2011 to 22 Jul 2011)**

- User Interface Platform for the Agriculture and Water sectors in Global Framework for Climatic Services, **FAO, Rome(26 Nov 2011 to 28 Nov 2011).**
- International Symposium on Climate Change and the Implications for Plant Sciences to be held at University of Guelph, **Canada (07-09 June 2011).**
- India's Delegation to the WMO Extraordinary Congress to negotiate and adopt implementation Plan, Governance Structure of the Global Framework for Climate Service (GFCS) WMO. **Geneva, Switzerland (25 Oct 12 to 27 Oct 12)**

#### **India:**

- Agro climatology and Crop Growth, UAS, GKVK, Bangalore **(04 Jul 83 to 24 Jul 83)**
- Methods in Agro climatology, CRIDA / ICRISAT, Hyderabad **(24 Mar 86 to 29 Mar 86)**
- Computer appreciation course, NIIT, New Delhi **(27 Apr 92 to 09 May 92)**
- Remote sensing fundamentals and applications to agriculture and soils, SAC, Ahmadabad **(19 Dec 94 to 20 Jan 95)**
- Computer Applications for Agricultural Scientists, AAREM, HAU, Hisar **(02 Nov 99 to 29 Nov 99)**
- Short Course on Academic Management, AAREM, HAU, Hisar **(28 Oct 02 to 31 Oct 02)**

#### **Major Contributions:**

- **Databank establishment and management:** Voluminous agromet datasets were systematically organized into retrievable databanks for further processing and development of software for analysis
- **Climatic Characterization of Haryana:** Useful information generated for scientists, extension workers, managers, planners in field of agriculture, irrigation, transport, health etc.
- **Characterization of Crop Environment:** Identification of crop efficient zone in the state for chickpea, pearl millet and mustard crops.
- **Micrometeorological Studies:** Conducted in cotton, summer moong and bare field for understanding of microenvironment of these crops.
- **Crop-Weather Relationships:** Dry matter accumulation and its partitioning in wheat, moong, bajra and mustard in relation to weather variables and thermal related indices studied for predicting growth and development.
- **Evapotranspirational Studies:** Seasonal ET requirement of summer moong, and mustard calculated for the region.
- **Crop growth modeling:** Simulation models viz., COTTAM and BRASSICA were tested and validated for the region.
- **Weather and Insect-Pest/Diseases Interaction Studies** conducted for aphid in mustard, *Heliothis* and pink-boll worm in cotton and Karnal Bunt disease in wheat for efficient management of these pests.

- **Phenological Studies:** Detailed studies on phenology of different hybrids/cultivars of pearl millet and mustard were carried out under different crop growing environments in the region.
- **Other Studies:** Simple method for LAI estimation in sunflower developed
- **Software for agroclimatic analysis:** Software programs were developed in Visual Basic language for large weather data analysis Using this software, six countries scientists were trained. This software is also supplied to users including AICRPAM centres without charging.
- **Decision Support System for sorghum:** A practical manual developed for weather based farm level decisions and advisories for kharif sorghum crop as a case study in Telangana region of AP.
- **Agroclimatic Atlas:** Using GIS based maps, agroclimatic atlas was prepared for Andhra Pradesh State and it served as model for other AICRPAM centres to prepare for their respective states / regions.
- **Agrometeorological advisory services:** Agrometeorological advisory system for farm level decision making using medium range weather forecasts (Reference: Annexure1A 96).
- **Crop contingency plans:** Near real-time monitoring of weather and development of crop contingencies through web enabled system (Ref: ICAR & [www.cropweatheroutlook.in](http://www.cropweatheroutlook.in); [www.crida.in](http://www.crida.in)).
- **Prediction model for crop phenology:** Prediction of crop phenology of Indian mustard using process based BRASSICA model.
- **Disease forewarning:** Development of weather based forewarning systems for cotton pests and diseases.
- **Shelter belts for tomato:** Microclimate modification to explain the yield variability in tomato.
- **Rainfall analysis based crop planning:** Rainfall analysis based crop planning for dryland agriculture (In: Dryland agriculture research and technologies issues and strategies, CCSHAU and ICAR).
- **Conceptualized and initialized the user oriented AGROMET information services (first in the country):** Developed a website for real-time information on agro meteorology for day to day use by researcher, students, farmers and other stakeholders. <http://hau.ernet.in/coa/agromet.html>
- Developed Agro-climatic analysis Software "**WEATHER COCK**" in the year of 2011.
- Subject expert in the development of PET Calculate software "**PET Calculator vs.1**" in the year of 2012.
- Subject expert in the development of PET Calculate software "**PET Calculator vs.2**" in the year of 2013