RPF I

PROFORMA FOR SUBMISSION OF RESEARCH PROJECTS

PART-I: GENERAL INFORMATION

200	Project Code	
2001	Institute code No.	CP- 2-3-12
2002	ICAR Code No.	
201	Name of the Institute and Division	
2011	Name and address of Institute	Indian Grassland and Fodder Research Institute, Jhansi-284003 (UP)
2012	Name of Division/ Section	Crop Production Division
2013	Location of project	Research Farm of Crop Production Division
202	Project Title	Studies of dynamic crop growth simulation model for fodder cowpea using CERES-Grain cowpea model for agronomic management and the impact of climate change on its productivity in few locations of India.
203	**Priority Area**	Agro-meteorology

2031	Research approach	Applied Research 01√	Basic Research 02	Process/Technology Development 03	Transfer of Technology 04

204	**Specific Area**	Validation of CERES-cowpea simulation model for forage cowpea and assessing the impact of climate change
2041	Previous project/projects in this specific area (Year, type of funding, cost etc.)	None in the Institute
205	**Duration**	4 years
2051	Date of start	*Kharif*, 2010
2052	Likely date of completion	*Kharif*, 2013
206	**Total cost of the project**	Rs. **17.41** lakh
2061	Foreign exchange component (if any)	Nil

207 Project profile summary

IPCC (4th assessment report,2007) has shown that the earth temperature has increased by 0.75oC between 1906 to 2005 due to increase in anthropogenic emissions of GHG. For Indian region the IPCC has projected 0.5-1.2°C rise in temperature by 2020, 0.88-3.16°C by 2050 and 1.56 to 5.44 °C by 2080 depending on the scenario of future development. Such global climatic changes will affect agriculture through their direct and indirect effects on crops, soils, livestock and pests. Several methods have been utilized by the Indian scientific community for assessing the possible impact of climatic variability and climatic change on agriculture(controlled environment facilities, such as open top chambers, free air Co2 enrichment(FACE) facilities, phytotron and green houses are now increasingly being used to understand the impact of temperature, Co2 on crop growth and productivity. The Interaction effects of CO_2, rainfall, radiation and temperature can be best studied through the use of crop growth simulation models (DSSAT,ORYZA,INFOCROP,WTGROWS). These models simulate the effect of daily changes on weather for any location on growth and yield of crop through understanding of crop physiological and soil processes. This models is now increasingly being used to assess the vulnerability of agriculture to climate change and for optimising crop management. Keeping this in view and importance of forage cowpea crop in India an attempt has been made to calibrate and validate CERES cowpea (grain)` model for forage cowpea and further this validated model will be used to study the impact of climate change on its productivity in different region of India and explore the simple adaptation strategies such as planting dates and varieties which will help in reducing impacts of climate change to some extent

08 **Key words:** Calibiration, Validation, Correlation and regression, CERES-Cowpea model, Cowpea and climate change

PART – II: INVESTIGATORS PROFILE

210 Principal Investigator

2101 Name	**Dr. Suchit Kumar Rai**
2102 Designation	Senior Scientist (Agromet)
2103 Division/Section	Crop Production Division
2104 Location	Institute Campus
2105 Institute Address	IGFRI, Jhansi-284003, Uttar Pradesh, India

211 Co- Principal Investigator

2111 Name	**Dr. D.V.K.N.Rao**
2112 Designation	Senior Scientist (Soil Scientist)
2113 Division/Section	Crop Production Division
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2115 Institute Address	IGFRI, Jhansi-284003, Uttar Pradesh, India

212 Co- Principal Investigator

2121 Name	**Dr. Dibyendu Deb**
2122 Designation	Scientist (Agril. Statistics)
2123 Division/Section	Crop Production Division
2124 Location	Institute Campus