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DECLARATION

I Jyoti Upadhyay, bearing registration no. PhD/1077/2010 dated 30/03/2010, hereby declare that the present thesis entitled 'Climate Change and Its Impact on Agriculture Productivity: A case study of Assam' is an original work carried out in the Department of Economics, Assam University, Silchar, for the Degree of Ph.D. The work has been prepared and written under the supervision of Prof. Alok Sen, Professor, Department of Economics, Assam University, Silchar. It has not been submitted in part or full for any degree to this or any other University.

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PREFACE

'Earth provides enough to satisfy every man's needs, but not every man's greed' - Mahatma Gandhi

All the living beings of mother earth are directly dependent on its surrounding climate and atmosphere for their survival. It has been found in many studies that a slight change in the atmosphere causes extinction of various species from the face of earth. Due to natural and manmade causes the global climate is changing drastically. The long term climate change has different consequences on different living beings, their livelihoods, economy, society, culture, agriculture sector etc. The cost of climate change will have adverse effects for the future generations then the present one. Extinction of lots of known and unknown species, melting of ice, unexpected floods and more frequent extreme weather events are the main threats of climate change which has already began to show its effects around us. Most importantly, we, the humans need food for survival but sadly our agriculture sector is mostly threatened by the long term impact of global climate change. Therefore, a major and immediate concern should be given to the global food security problem to cope up with the long term global climate change.

This study analyses the inter-relationship between long term climate change effects and agriculture productivity with regard to major crops such as rice, wheat, pulses and oilseeds productivity respectively in the state of Assam during the period from 1970-2010. Further, this study also tries to establish a link between long term climate change effects and rice productivity in the ten undivided districts of Assam separately from 1970-2010. This study traces the adverse impact of long term climate change on the agricultural sector in the state.

Among the adverse effects of long term climate change impacts on major crops of Assam, rice has been found to be mostly effected whereas wheat has had a negligible positive impact. The long term climate change imposes threat to the economy of the state in one hand and food security of the poor famers in the other hand.

The entire study has various implications like, long term fluctuations of rainfall and temperature, climate change effects on various major crops, comparison among the long term climate change effected crops, comparison among the districts of which long term climate change effects on rice, cropping patterns and crop area affected by floods. It has been found

that there is an increasing need to find out the impacts of climate change in the agricultural sector of Assam. The policy prescription can be useful if the government initiates farmer friendly schemes which will be helpful for surviving and surpassing the future climate change effects. Finally, it would be noted that climate change effects need immediate attention from government, policymakers, NGOs and policy implementing agencies for our own good and to secure the future of the coming generations.

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