

Anshuman Gupta · Narendra N. Dalei
Editors

Energy, Environment and Globalization


Recent Trends, Opportunities and
Challenges in India

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Chapter 8

Empirical Nexus Between Global Temperature, Local Weather and Agriculture: Evidence from the Indian State of Odisha



Narendra N. Dalei, Anshuman Gupta and Neeraj Anand

8.1 Introduction

The frequency of extreme weather events is rising and every time the post-cyclone period is followed by draught in the Indian state of Odisha. Since 1965, Orissa has experienced floods for 17 years, droughts for 19 years, and cyclone for seven years (GoO 2004). The state experienced a major cyclone called super cyclone (see Fig. 8.1 and Table 8.1) during the year 1999, whose intensity and impact were very high as compared to any other natural disaster during last 30 years in the climatic change history of Odisha (Francis et al. 2001). There was heavy torrential rain over Jagatsinghpur district located in southeast India due to the super cyclone resulting heavy flood in the low-lying areas. There was 8 m high of torrential storm surge that hit the coast of Odisha, travelling up to 20 km inland. The super cyclone damaged 17,110 km² of crops, uprooted 90 million trees, and damaged 275,000 homes. Around 1.67 million people were homeless. It affected 19.5 million people and killed 9,803 people. Around 2.5 million domestic animals were killed and around 5 million farmers lost their livelihood. Besides, Odisha also experienced another two major cyclones viz. Phailin (2013) and Hudhud (2014), when precaution was taken by Government of Odisha to minimize the human loss. The major loss was property and crop loss (see Table 8.1). Phailin damaged around 130 thousand hectares of crop land and USD 343.75 million worth of crops during 2013. Similarly, Hudhud damaged around 248 thousand hectares of crop land and USD 3.55 million worth of crops during 2014.

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