Characterizing impacts of fire on forested landscape of Odisha

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DOCTOR OF PHILOSOPHY

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CERTIFICATE

This is to certify that the research work embodied in this thesis entitled **'Characterizing impacts of fire on forested landscape of Odisha'** is submitted to Jawaharlal Nehru University for the award of the degree of **Doctor of Philosophy**. The work is original and has not been submitted in part or in full for any other degree or diploma to any other University/Institution.

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LIST OF ABBREVIATIONS

FAO	Food and Agriculture Organization of the United Nations
CEEW	Council on Energy, Environment and Water
IPCC	Intergovernmental Panel on Climate Change
UNCCD	United Nations Convention to Combat Desertification
UNFCCC	United Nations Framework Convention on Climate Change
IUFRO	International Union of Forest Research Organizations
FSI	Forest Survey of India
UNCBD	United Nations Convention on Biological Diversity
COP	Conference of Parties
MoEFCC	Ministry of Environment, Forest and Climate Change of India
GFRA	Global Forest Resource Assessment
WRI	World Resource Institute
ISFR	India State of Forest Report
VIIRS	Visible Infrared Imaging Radiometer Suite
CRED	Centre for Research on the Epidemiology of Disasters
MLTs	Machine learning techniques
MEA	Millennium Ecosystem Assessment
SDG	Sustainable Development Goals
ROC-AUC	Receiver Operator Characteristic – Area Under Curve
CV	Coefficient of Variation
FAST	Forest Fire Alerts System
ASTER	Advanced Spaceborne Thermal Emission and Reflection Radiometer
GDEM	Global Digital Elevation Model
MODIS	Moderate Resolution Imaging Spectroradiometer
OSM	Open Street Map
VIF	Variance Inflation Factor
TOL	Tolerance
FR	Frequency Ratio

CF	Certainty Factor
NRF	Natural Risk Factor
AHP	Analytical hierarchy process
LR	Logistic regression
BRT	Boosted Regression Tree
CART	Classification and Regression Tree
GBM	Gradient Boosted Machine
MARS	Multivariate Adaptive Regression Spline
RF	Random Forest
SVM	Support Vector Machine
DBH	Diameter at breast height
AGH	Above ground biomass
BGH	Below ground biomass
IVI	Importance Value Index
STFR	Soil Test and Fertilizer Recommendation
NTFP	Non-timber forest produces
NGO	Non-governmental organizations

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The appended material is based on research carried out at the partner institution of URGENT Project, and has potentially utilised the equipment support, inputs based on course revised/developed and training programs (*lecture series, research seminar and webinars*) through the URGENT Project.

The document is part of thesis part of PhD/MSc/MA research work carried out at the Jawaharlal Nehru University. Purposefully limited pages are shared to avoid copyright and other issues. However, the full thesis can be shared on request.

The complete thesis can be obtained from Prof P K Joshi (pkjoshi27@hotmail.com or pkjoshi@mail.jnu.ac.in).