DECLARATION

I, hereby declare that this thesis entitled **"POTENTIAL SITE SELECTION FOR WATER HARVESTING IN A MICRO WATERSHED WITH FUTURE WATER BALANCE PERSPECTIVES"** is a bonafide record of work done by me during the course of project work and that it has not previously formed the basis for the award to me for any degree/diploma, associateship, fellowship or other similar title of any other University or Society.

Place: Tavanur **Er. Aravind P**

Date: 11.02.2026 **(2021-28-003)**

CERTIFICATE

Certified that this thesis entitled **"POTENTIAL SITE SELECTION FOR WATER HARVESTING IN A MICRO WATERSHED WITH FUTURE WATER BALANCE PERSPECTIVES"** is a record of project work done independently by **Er. Aravind P** under my guidance and supervision and that it has not previously formed the basis for the award of any degree, fellowship or associateship to him.

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SYMBOLS AND ABBREVIATIONS

%	:	Percentage
<	:	Less than
>	:	Greater than
∑	:	Sum
≤	:	Less than or equal to
≥	:	Greater than or equal to
&	:	And
^{o}C	:	Degree Celsius
km^2	:	Square kilometer
Mha	:	Million Hectare
AHP	:	Analytical Hierarchy Process
ANN	:	Artificial Neural Network
BRT	:	Boosted Regression Trees
CA	:	Cellular Automata
CART	:	Classification and Regression Trees
R^2	:	Coefficient of determination
CMADS	:	China Atmospheric Assimilation Driven Dataset
CMIP	:	Coupled Model Intercomparison Project
CN	:	Curve Number
CP	:	Compromise Programming
CUP	:	Calibration, Uncertainty and Parameterization
DEM	:	Digital Elevation Model
ET	:	Evapo-Transpiration
FPR	:	False Positive Rate
GB	:	Gradient Boosting
GCM	:	Global Climatic Models
GEE	:	Google Earth Engine
GTB	:	Gradient Tree Boosting
GW	:	Ground Water

HRU	:	Hydrological Response Units
IMD	:	Indian Meteorological Department
IMSD	:	Integrated Mission for Sustainable Development
IPCC	:	Inter-governmental Panel for Climate Change
ISRO	:	Indian Space Research Organization
KGE	:	Kling-Gupta Efficiency
KNN	:	K- Nearest Neighbor
LCM	:	Land Change Modeler
LH-OAT	:	Latin Hypercube -One At a Time
LR	:	Linear Regression
LST	:	Land Surface Temperature
LULC	:	Land Use and Land Cover
GIS	:	Geographical Information System
MC	:	Markov Chain
MCDM	:	Multi Criteria Decision Making
ML	:	Machine Learning
MLP	:	Multi Linear Perceptron
MM	:	Milli meter
MODIS	:	Moderate Resolution Imaging Spectroradiometer
MOLUSCE	:	Modules for Land Change Evaluation
MSL	:	Mean Sea Level
NDBI	:	Normalized Difference Built up Index
NDVI	:	Normalized Difference Vegetation Index
NDWI	:	Normalized Difference Water Index
NH	:	National Highways
NIR	:	Near Infra-Red
NRMSE	:	Normalized Root Mean Square Error
NRSC	:	National Remote Sensing Centre
NSE	:	Nash- Sutcliffe Efficiency
OA	:	Overall Accuracy
PA	:	Producer Accuracy

PBIAS	:	Percent Bias
RCP	:	Representative Concentration Pathway
RE	:	Relative Error
RF	:	Random Forest
RS	:	Remote Sensing
RSR	:	Root Mean Standard Deviation Ratio
RUSLE	:	Revised Universal Soil Loss Equation
RWH	:	Rain Water Harvesting
SCS	:	Soil Conservation Service
SRTM	:	Shuttle Radar Topographic Mission
SSP	:	Shared Socio-Economic Pathway
SUFI-2	:	Sequential Uncertainty Fitting 2
SVM	:	Support Vector Machine
SW	:	Surface Water
SWAT	:	Soil Water Assessment Tool
SWIR	:	Short Wave Infra-Red
TPR	:	True Positive Rate
UNDESA	:	United Nations Department of Economic and Social Affairs
USDA	:	United States Department of Agriculture
WBR	:	Water Balance Ratio
WCRP	:	World Climate research Programme
WOE	:	Weight of Evidence
XGB	:	eXtreme Gradient Boosting