

DECLARATION

I, hereby declare that this thesis entitled “**Impact of Soil and Water Conservation Measures on LULC and Groundwater in Olanthichira watershed, Malappuram District**” is a bonafide record of research work done by me during the course of research and the thesis has not previously formed the basis for the award to me of any degree, diploma, associateship, fellowship or other similar title, of any other University or Society.

Place: Tavanur
Date:

Revathi N.
(2022-18-006)

CERTIFICATE

Certified that this thesis entitled “**Impact of Soil and Water Conservation Measures on LULC and Groundwater in Olanthichira watershed, Malappuram District**” is a record of research work done independently by **Er. Revathi N. (2022-18-006)** under my guidance and supervision and that it has not previously formed the basis for the award of any degree, diploma, fellowship or associateship to her.

Place: Tavanur

Date:

Dr. Sajeena S.
(Major Advisor, Advisory Committee)
Associate Professor
Dept. of Irrigation and Drainage Engineering
KCAEFT, Tavanur

CERTIFICATE

We, the undersigned members of the advisory committee of **Er. Revathi N. (2022-18-006)**, a candidate for the degree of **Master of Technology in Agricultural Engineering** with major in **Soil and Water Conservation Engineering**, agree that the thesis entitled **“Impact of Soil and Water Conservation Measures on LULC and Groundwater in Olanthichira watershed, Malappuram District”** may be submitted by Er. Revathi N. (2022-18-006), in partial fulfilment of the requirement for the degree.

Dr. Sajeena S.
(Major Advisor, Advisory Committee)
Associate Professor
Dept. of IDE
KCAEFT, Tavanur

Dr. Rema K. P.
(Member, Advisory Committee)
Professor and Head
Dept. of IDE
KCAEFT, Tavanur

Dr. Anu Varughese
(Member, Advisory Committee)
Assistant Professor
Dept. of IDE
KCAEFT, Tavanur

Dr. Jasna V. K.
(Member, Advisory Committee)
Assistant Professor
Dept. of Agrl. Extn.
KVK, Malappuram



External Examiner
Dr. Manoj P Samuel
Executive Director
KSCSTE-CWRDM
Kunnamangalam
Kozhikode, Kerala

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Dedicated to
my family and friends

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SYMBOLS AND ABBREVIATIONS

°C	:	Degree Celsius
/	:	Per
%	:	Percentage
µm	:	micrometer
ALT	:	Arable Land Treatment
ASTER	:	Advanced Spaceborne Thermal Emission and Reflection Radiometer
BCR	:	Benefit – Cost Ratio
BGL	:	Below Ground Level
BRB	:	Bharathapuzha River Basin
CGWB	:	Central Ground Water Board
DDP	:	Desert Development Programme
DEM	:	Digital Elevation Model
DLT	:	Drainage Line Treatment
DPAP	:	Drought Prone Area Programme
DSSSC	:	Department of Soil Survey and Soil Conservation
et al.	:	And others
etc.	:	et cetera
FAO	:	Food and Agriculture Organization
GIS	:	Geographic Information System
GWD	:	Ground Water Department
GWL	:	Ground Water Level
ha	:	Hectares
IDW	:	Inverse Distance Weight
IFSAR	:	Interferometric Synthetic Aperture Radar
IMD	:	Indian Meteorological Department
IndiaWRIS	:	India Water Resource Information System
IRR	:	Internal Rate of Return
IWDP	:	Integrated Watershed Development Programme
KCAEFT	:	Kelappaji College of Agricultural Engineering and Food Technology

km	:	kilometer
KVK	:	Krishi Vigyan Kendra
LULC	:	Land Use Land Cover
m	:	meter
M ha	:	million hectares
MNREGA	:	Mahatma Gandhi National Rural Employment Guarantee Act
MSL	:	Mean Sea Level
NABARD	:	National Bank for Agriculture and Rural Development
NDVI	:	Normalized Difference Vegetation Index
NGO	:	Non- Governmental Organization
Nos	:	Numbers
NPV	:	Net Present Value
NWDPRRA	:	National Watershed Development Project for Rainfed Areas
OLI	:	Operational Land Imager
PMKSY	:	Pradhan Mantri Krishi Sinchayee Yojana
RIDF	:	Rural Infrastructure Development Fund
RMSE	:	Root Mean Square Error
RS	:	Remote Sensing
RVP	:	River Valley Project
SHG	:	Self-Help Group
SOI	:	Survey of India
SRTM	:	Shuttle Radar Topography Mission
SWAT	:	Soil and Water Assessment Tool
SWCM	:	Soil and Water Conservation Measures
TM	:	Thematic Mapper
UG	:	User Group
USA	:	United States of America
UTM	:	Universal Transverse Mercator
USGS	:	United States Geological Survey
VWC	:	Village Watershed Committees
WGS	:	World Geodetic System