

BIODATA

NAME : Dr REMA K.P

Date of birth : 06-12-1968

Address : **Professor & Head**

Dept of Irrigation and Drainage Engg
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Religion & Caste : Hindu, Nair.

EDUCATION

Sl.No	Degree	University	Year of Passing	Percentage of marks
1.	B.Tech(Agrl.Engg)	Kerala Agricultural University	1990	89
2	M. Tech (Soil & Water Engg)	Kerala Agricultural University	1993	93
3	PhD(Soil and Water Conservation Engg),	Tamil nadu Agri University, Coimbatore, 2012.	2012	96

EXPERIENCE- 29+YEARS

1. Asst Professor (Provisional) at KAU from Aug 1994 to Oct 1994
2. Assistant Professor (Regular) KAU, KCAET, Tavanur, from Oct 1994-2000
3. Assistant Professor,(Sr. Scale), KAU, KCAET, Tavanur, from 2000-2005
4. Assistant Professor,(Sl. Grade), KAU, KCAET, Tavanur, from 2005-2008
5. Re-designated as Associate Professor, on 28-10-2008
6. On deputation for PhD at TNAU, Coimbatore , 04-09-2008 to 03-09-2011

7. Associate Professor, K A U, KCAET, Tavanur, 04-09- 2011 – to 22-02-2015

8. Professor, K A U, KCAET, Tavanur, 22-02-2015-till date

TEACHING CREDENTIALS

1. **Courses handled for B Tech (Agrl. Engg):** Irrigation Engineering, Drainage Engineering, Ground Water Wells and Pumps, Environmental Engineering, Minor Irrigation and Command area Development, Watershed Hydrology, Geotechnical Engg, Irrigation Equipment Design, Soil-Plant-Water Relationships, Surveying & levelling, Watershed Management, Engg Drawing, Seminar, Skill Development Training–I(Student READY),Project.

2. **Courses handled for M Tech :** Design of Farm Irrigation Systems, Seminar, Watershed Hydrology, Water Quality and Pollution control, Flow through Porous media, Masters Research, Flow through Porous media, Seminar.

3. **Courses handled for PhD:** Soil Physics, Advanced Irrigation Engineering, Water Quality and Pollution Control, Advanced Hydrology, Doctoral Seminar

ACADEMIC MANAGEMENT:

Serving as HOD, Dept of Irrigation & Drainage Engineering since 30-04-21.

Served as Academic Officer, PG for the last three years.

Academic Council member of the university for the last three years

PC Group-Soil and Water Engineering Coordinator & member-2012-13 onwards till date.

Member of the advisory committee of PG & PhD students

Chairperson, Internal Complaint Committee

Chairman, Student Grievance cell

Chairman, Technical committee

Served as advisor for UG,PG and PhD students

Served as Officer i\c of Soil and Water and Geo -Technical Engineering labs for more than 10 years.

Officer i\c of Irrigation Engineering lab from 2012-2019.

Officer i\c of Strength of Materials lab at present .

CO CURRICULAR ACTIVITY MANAGEMENT

Served as Officer i/c of vehicles for a period of five years

Served as Purchase committee member chairman for two years and also served as member of purchase committee

Served as Associate Patron of Students Union- 2019-20 and earlier

Advisor to various clubs of students union- Arts club, Women's forum, Quiz club, Eco club, Staff Editor, College magazine etc

Served as Alumni Association Secretary and Executive committee member

Served as Secretary, Parent-Teacher Association, KCAET- 2017 -2018 and as PTA Exe. Committee member.

RESEARCH CREDENTIALS

PG research topic-Infiltration and water advance studies under Surge flow furrow irrigation.

Doctoral research topic-Techno-Economic evaluation of Soilless culture techniques for vegetable crops.

B.Tech Projects guided : 13 nos:

Areas of study:

1. Cablegation systems for surface irrigation
2. Evaluation of Low cost canal lining materials
3. Rainfall Erosivity indices for Kerala.
4. Design and Development of a novel Micro –Irrigation technique.
5. Water Harvesting potential of dead quarries
6. Enhancing water storage potential of Kambalathara Eri of Chitturpuzha project command.
7. Crop water requirement computations using CROPWAT model.
8. Irrigation scheduling studies on the right bank canal system of Chalakudy river diversion scheme.
9. Reservoir operation pattern and cropping pattern optimization for the Chamravattom regulator cum bridge project command.
10. Evaluation of simple Hydroponic systems for terrace cultivation of vegetable crops.
11. Conducted Studies on Drip automation systems for optimal irrigation Scheduling.
12. Irrigation scheduling studies on soilless culture techniques for vegetable crops.
- 13.

Advisorship to M.Tech students: 10 nos:

Thrust areas of research:

1. Evaluation of low cost lining materials for field channels

2. Grey water treatment using constructed wetlands
3. Irrigation scheduling studies on Soilless culture techniques for vegetable crops.
4. Suitability of Drip automation systems for optimal irrigation scheduling.
5. Design and development of horizontal recharge filters for ground water recharge through abandoned tube wells.
6. Comparative evaluation of evapotranspiration parameters in a naturally ventilated poly house and open field.
7. Comparative evaluation of evapotranspiration parameters of Okra in Polyhouse for alternate growing media.
- 8 Modelling the impact of land use land cover changes on the runoff processes in Chalakudy basin using HEC-HMS model.
9. Soil loss estimation using RUSLE and GIS for Kadalundi River basin.
10. Design flood estimation of Pazhassi Barrage for effective management of floods.

Advisorship to Ph.D students: 3 nos:

Thrust areas of research:

1. Conjunctive water management model for a multi crop irrigation command
2. Spatial mapping of flood prone areas and risk assessment of Chalakudy river basin using HEC-HMS and HEC-RAS models.
3. Landslide Hazard, Vulnerability and Risk assessment for Chaliyar river basin.

Awards and Achievements:

1. Awards: ICAR JRF in 1991.
2. GATE-91,
3. NET by ASRB in 1993.
4. TNAU Award and gold medal for the best PhD student in Agri. Engg IN 2012.
5. Indian Engineering congress 2014 at Hyderabad. -Gold medal and citation for the paper "Informed decision making process for managing environmental flows in small river basins".
6. Rekha Nandi and Bhupesh Nandi Prize for the best journal subject paper in series A by the Institution of Engineers, India 2014 for the paper on environmental flow modelling
7. Dr Banyal memorial best paper award -2019- for the paper " Modeling the irrigation demand profile of Chalakudy river diversion scheme using CROPWAT and GIS tools.
8. Conference Bursary Award for the paper "Towards sustainable water sharing-An investigation of Parambikulam Aliyar Project in India"-
9. Best paper award from Indian Association of Soil and Water Conservationists for the paper

“Simulation of groundwater flow using visual MODFLOW: A case study for the command area of Chalakudy river diversion scheme” as a coauthor.

Research Publications

Journal papers published in the last ten years:

1. S. Padikkal and Rema. K. P.2013. Informed decision making for managing environmental flows in small river basins, J. of Institution of Engineers (India), Series A:94(1) 43-52.
2. Umesh ,B, Santhana Bosu,Rema K.P.,A.R Murunkar. 2013. Drip Irrigation with Fertigation in soilless media for tomato under controlled cultivation.J.of Applied Horticulture,15(3):195-197.
3. Umasha, Santhana Bose, Rema. K. P., A. R. Murunkar, Drip irrigation with fertigation in soilless media for tomato under controlled cultivation, Journal of Applied Horticulture, 15(3), 2013, 195-197
- 4.Sabeena Shahul,Rema K.P, Shyla Joseph 2014. Irrigation Scheduling of Salad Cucumber inside a Poly house using CROP WAT model. International Journal of Engineering science and computing.
- 5.Jomol,T. Joseph, Rema K.P. (2016)Managed Aquifer recharge: A review. International J. of Modern trends in Engineering and Research.ISSN 2393-8161- SJIF-3.518.
- 6.Jomol .T.Joseph, Rema K.P (2016) Artificial Ground water Recharge case studies :A Review. International Journal of Engineering science and computing.Vol 6(8)-IF-5.611.
- 7.Gilsha Bai,E.B.,Rema ,K.P., Sasikala,D and Anu Varughese.2019. ” Modeling the irrigation demand profile of Chalakudy river diversion scheme using CROPWAT and GIS tools. International J.of Farm Sciences.9(4):52-62.
8. Gilsha Bai, E.B., Rema, K.P., Sajeena, S. and Sasikala, D.2020.Simulation of groundwater flow using visual MODFLOW: A case study for the command area of Chalakudy river diversion scheme. Indian J. of Soil Conservation. 50(1):29-37
- 9.Padikkal, S. Rema K.P, and Gopi, G.2020. Frequented Extreme Climatic Events in Kerala - Evolving Sustainable Management Paradigm. J. Indian Soc. Coastal Agric. Res- Special Issue- Climate Change and Coastal Agriculture. 38(2):140-146.
- 10.Nchumbeni.M.Odyuo and Rema K.P.2020.Impact of Land use Land cover changes on runoff processes of Chalakudy Basin.International J. of Current Microbiology and App.Sci.(2020)9(11):3731-3742.
- 11.Gudidha G. and Rema, K.P. 2021. Calibration and Validation of HEC-HMS Model for Chalakudy River basin. Int. J. of Environ. and Climate Change. 11(5): 91-104.
- 12.Gilsha Bai, E.B., Rema, K.P., Sajeena, S., and Sasikala, D.2022. Simulation of groundwater flow using visual MODFLOW: A case study for the command area of Chalakudy river diversion scheme. Indian J. of Soil Conservation. 50(1):29-37.
- 13.Aiswarya, L., Rema, K.P., and Asha, J. 2023. Performance of qualitative and quantitative models in creating landslide susceptibility map of Chaliyar River basin. *Int. J. Environ. and Clim. Change.* 13(10), pp.1860-1875.

Conference /Seminar

1. Sudheer Padikkal and Rema,K.P,.2009. Towards sustainable water sharing-An investigation of Parambikulam Aliyar Project in India-Paper presented in DSA UK-Annual conference,Belfast.
2. Rema. K. P., D. Tamilmani and Malathi. V.2012. Evaluation of soilless culture for vegetable crops, All India seminar on engineering interventions for profitable agriculture, Sept. 11-12, 2012, TNAU, Coimbatore.
3. Rema. K. P., D. Tamilmani and Malathi. V.2012. Techno-economic evaluation of soilless culture technique for vegetable crops, All India seminar on engineering interventions for profitable agriculture, Sept. 11-12, 2012, TNAU, Coimbatore.
4. Umesha, Santhana Bose, Rema. K. P.2012. Studies on growing tomato under fertigation in soilless media, All India seminar on engineering interventions for profitable agriculture, Sept. 11-12, 2012, TNAU, Coimbatore.
5. Abhijet H. Surve, Rema, K.P and Shyla Joseph 2014. Grey water treatment by constructed wet lands.Proc. of the International Conference on Waste management for sustainable development (ICWMSD-2014),N.S.S College of Engg,Palakkad, 21-23 March,2014.
6. Rema,K.P,Sabeena Shahul and Megha,P. 2014.Irrigation scheduling studies on some vegetable crops of Cucurbitaceous family using CROPWAT modal. Proceedings of the National Conference on changing climate scenario and sustainable resource management (CSSR 14)17-19 January, Dept of civil Engineering,NSS College of Engineering,Palakkad.
7. Sudheer Padikkal,Umadevi,p.p,Thomas Mathew and Rema K.P 2014.Simulation study of proposed Inter basin water transfer under Kuriarkutty-Karappara Multipurpose scheme. Proceedings of the National Conference on changing climate scenario and sustainable resource management (CSSR 14)17-19.
8. Sudheer Padikkal and Rema K.P,.2014.Do legal instruments help resolving water disputes in India?A performance evaluation of interstate water dispute tribunals. Proc.of the International symposium on Integrated water resource management (IWRM-2014)PP1117-1125.Feb 19-21.CWRDM,Kozhikode.
9. Gudida Gopi and Rema,K.P.2019. Impact of extreme rainfall events and role of dams on Kerala floods of August 2018.Proc.of the National conference on doubling farmers income through scientific approaches. TNAU,Kumalur. pp232-234.
10. Sudheer Padikkal and Rema,K.P.2019.Climate change, Carbon neutrality and Micro Irrigation. Souvener of the Assosiation of Engineers, Kerala

EXTERNAL AIDED PROJECTS (EAP) HANDLED

1. PI of the State plan project titled “Studies on augmenting vegetable production by Poly house cultivation using water and energy efficient, eco friendly technologies

Co-PI of Precision Farming Development Centre (in 2008)

2. Project Coordinator and PI of the network project on “Soil loss estimation and monitoring in the highland ecosystems of Kerala for effective conservation planning.”

RESEARCH INFRASTRUCTURE DEVELOPED

Involved in setting up the GeoTechnical Engineering and Soil and Water Engg labs
Construction of naturally ventilated polyhouse and installation of irrigation and fogging system for research in the Department.

Purchased Drip Irrigation and fertigation equipments –
Instruments and equipments for irrigation engineering lab

TRAININGS ATTENDED DURING LAST TEN YEARS

1. GIS training on “Introduction to GIS, Essential workflows and performing analysis” from 1 June 2015 to 5 June 2015 at KCAET Tavanur Conducted by esri India- **4 members**

Continuing Education programme on “Introduction to Soil and Water Assessment Tool Using Open Source Software: QGIS & QSWAT” from 4-9 January, 2016 At IIT, Chennai-**2**

GIS training on “Introduction to GIS, Essential workflows and performing analysis” from 1 June 2015 to 5 June 2015 at KCAET Tavanur Conducted by esri India.

4. Short term training on introduction to soil & water assessment tool using open source software QGIS and QSWAT– National workshop. IIT, Chennai. 03-01-2016 to 07-01-2016

5. Software Applications in Water and Environmental Engineering, SIST, Chennai in association with NIT, Calicut 15-02-2023 to 22-02-2023.

6. Software applications in water resources management Jointly organised by SIST Chennai, NIT, Calicut and ISRS 16-11-2020 to 21-11-2020

7. International Conference on Sustainable water management and ecosystem Restoration. Jointly organised by SIST Chennai, NIT, Calicut and KITS 23-06-2021 to 24-06-2021

8. International conference on Water source sustainability IIT, Roorkey and IWRS, Roorkey 18-06-2021 to 20-06-2021

9. HRD training programme for the middle level Scientists of KAU (Batch-2) CTI, Mannuthy, KAU 08-03-2023 to 09-03-2023

PARTICIPATION IN SEMINAR/WORKSHOP/SYMPOSIA

1. National Conference Changing climate scenario and sustainable resource management.(CSSR-2014. N.S.S. Engg college, Palakkad. 17-19 January,2014.

2. Precision Farming strategies for enhancing horticultural production, National workshop, KCAET,Tavanur. 25-05-2015
3. Soil survey and mapping using Geo Informatics, National workshop,KCAET,Tavanur. 25.11.2015 to 26.11.2015
4. Workshop on Soil survey and mapping using geo-informatics from 25-26 November, 2015 at KCAET, Tavanur conducted by Soil and Land Use Survey of India- **4 members**
5. Workshop on HYDRUS modeling-Dept of Civil Engineering,IISC,Bangalore-2 days Waste management for sustainable development (ICWMSD-2014.International conference, NSS Engg college,21-23,March,2014.
6. Research Publishing and Plagiarism, One day workshop, KAU, Thrissur, 8-09-15

OTHER EXTENSION ACTIVITIES

1. NAIP-E-Learning course-peer reviewer for the course “Agricultural structures and environmental control” during 2011-13.
2. Radio talks at AIR Kozhikode on topics in Soil and Water Engg.
3. Peer reviewer of the Journal of Soil and Water Conservation published by the Indian Society of Soil and Water conservation.
4. Peer Reviewer for the Journal of Tropical Agriculture of KAU.
5. Resource person for KVK,PFDC etc on topics related to Soilless Agriculture.
6. External Examiner for qualifying viva of PhD student of IARI.
7. External examiner for evaluation of PG and PhD theses of TNAU,

CONSULTANCY WORKS UNDERTAKEN

Consultancy services for LSGD, Line Departments, Research stations ,etc

MEMBERSHIP IN PROFESSIONAL BODIES

1. Life member of the Indian Society of Soil and Water
2. Conservationists.
3. Associate member of the Institution of Engineers, India.
4. Life member of ISAE.