



Name: Dr Somasundaram Jayaraman

Designation: Head & Principal Scientist (Soil Physics: Soil and Water Cons.)

Area of Specialization:

- No-till farming on soil properties and carbon sequestration
- Soil processes: Soil Carbon and Nitrogen / aggregate dynamics
- Sustainable soil management practices
- Greenhouse gas (GHG) emission under no-tillage/conservation agriculture
- Reversing Land Degradation/ Climate change mitigation/ Ecosystem Services
- Vertisols Management/ Soil & Water Conservation measure/ Watershed management

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Education

Degree	Year of Passing	University/Institution
Post-Doctoral Fellow	2015	Dept. of Science, Information Technology and Innovation (DSITI), Ecosciences Precinct, Dutton Park, Brisbane, Australia; Successfully Completed under the supervision of Professor Ram C. Dalal (University of Queensland) sponsored by Endeavour Research Fellowship, Australian Government
Ph.D. (Soil Science & Agril.Chemistry)	2001	Tamil Nadu Agricultural University, Coimbatore, Tamil Nadu, India (Gold Medalist)
M.Sc. (Soil Science & Agril.Chemistry)	1998	Tamil Nadu Agricultural University, Coimbatore, Tamil Nadu, India
B.Sc. (Agriculture.)	1995	Faculty of Agriculture, Annamalai University, Chidambaram, Tamil Nadu, India

Professional History

Position	Year	Organization
Head of the Centre	July 2023 to till date	ICAR- Indian Institute of Soil and Water Conservation (Formerly CSWCRTI), Research Centre, Fernhill. Udhagamandalam, Tamil Nadu, India
Principal Scientist	22.12.2014 to July 2023	ICAR-Indian Institute of Soil Science, Bhopal, Madhya Pradesh, India
Senior Scientist (through direct selection)	6 Years (22.12.2008 to Dec 2014)	ICAR-Indian Institute of Soil Science, Bhopal, Madhya Pradesh, India
Scientist-Sr. Scale	2 years, 11 months (12.11.2005 to 20.12.2008)	ICAR- Indian Institute of Soil and Water Conservation (Formerly CSWCRTI), Research Centre, Kota, Rajasthan, India
Scientist	11.11.2005 to 12.11.2001	ICAR- Indian Institute of Soil and Water Conservation (Formerly CSWCRTI), Research Centre, Kota, Rajasthan, India

Publications (summary)

S. No.	Publication	Number
1	Research Publications	90
	National	60
	International	30
2	Books	11
	Authored	6
	Edited	5
3	Book Chapters	50
4	Lead Papers	2
5	Radio talks	0
6	Technical/Research Reports/ Compilation / Bulletins	5
7	Training Manual	10
8	Extension Folders/leaf lets	10

9	Symposia/Workshop/Seminar Papers	5
10	Popular article	10
11	Professional Trainings attended	6
12	Consultancy project handled (Leader in 0 & Associated in 6)	4
13	No. of training organized	15
	Short duration sponsored training (Trained : 10)	3
	Soil Conservation Regular Training Course: (5 ½ or 4 months duration) (Trained: 0)	7
	B.Tech students Field Practical training- one to two months (No Students: 15)	2
14	Seminars/Symposia/Workshops/Summer or Winter School/ Organized	4
15	External projects handled	5

Most important 5 Publications

1. **Somasundaram Jayaraman**, A.K. Naorem, Rattan Lal, Ram C. Dalal, N.K. Sinha, A.K. Patra, S.K.Chaudhari (2021) Disease Suppressive Soils–Beyond Food production: A Critical Review. *Journal of Soil Science and Plant Nutrition* DOI: <https://doi.org/10.1007/s42729-021-00451-x>. (Impact Factor:4.22; NAAS Rating: 10.22)
2. **Somasundaram Jayaraman**, Sinha N.K., Mohanty M., Hati K. M. Chaudhary R. S. Shukla A. K., Shirale A.O., Neenu S., Naorem A.K., I. Rashmi, Biswas A. K., Patra A.K., Srinivasarao Ch and Ram C. Dalal 2020. Conservation Tillage, Residue Management and Crop Rotation Effects on Soil Major and Micro Nutrients in Semi-Arid Vertisols of India. *Journal of Soil Science and Plant nutrition* <https://doi.org/10.1007/s42729-020-00380-1>(Impact Factor:4.22; NAAS Rating: 10.22)
3. **Somasundaram Jayaraman.**, Sinha, N.K., Dalal, R.C., Rattan Lal, Mohanty, M., A. K. Naorem, K. M. Hati, R. S. Chaudhary, A. K. Biswas, A. K. Patra & S. K. Chaudhari (2020) No-Till Farming and Conservation Agriculture in South Asia – Issues, Challenges, Prospects and Benefits, *Critical Reviews in Plant Sciences*, 39:3, 236-279. DOI: 10.1080/07352689.2020.1782069. (Impact Factor:6.9; NAAS Rating: 12.9)
4. **Somasundaram Jayaraman.**, Rattan Lal, N.K.Sinha, Ram Dalal,, Chitralkha, A. R.S.Chaudhary and A.K.Patra (2018). Cracks and Pot-holes in Vertisols: Characteristics, Occurrence and Management. *Advances in Agronomy Vol. 149; 93-159*, DOI: **10.1016/bs.agron.2018.01.001**. (Impact Factor:6.9; NAAS Rating: 12.9)
5. **Somasundaram Jayaraman**, Chaudhary, R S, Awanish Kumar, Biswas A.K., Sinha N.K., Mohanty M, Hati K. M., Jha P, Sankar, M, Patra, A.K, Dalal, R.C. and Chaudhari, S.K. (2018). Effect of contrasting tillage and cropping systems on soil aggregation, aggregate-associated carbon and carbon pools

under in Rainfed Vertisols *European Journal of Soil Science*: DOI: 10.1111/ejss.12692. (Impact Factor:4.20; NAAS Rating: 10.20)

Google Scholar link

https://scholar.google.com/citations?user=JTyu_fEAAAJ&hl=en

ResearchGate link

<https://www.researchgate.net/profile/Somasundaram-Javaraman>

ORCID

ORCID: <https://orcid.org/0000-0003-3486-4109>

Awards/Fellowships/Recognitions

Sl.No	Name of the Award	Awarding organization	Year
1	Dr JSP Yadav Memorial Award for Excellence in Soil Science	Indian Society of Soil Science, New Delhi	2021
2	Leadership Award	Soil Conservation Society of India (SCSI), India	2019
3	Scientist Award – for Commendable contribution to Soil Science	Dr. B. Vasantharaj David Foundation, Tamil Nadu, India	2019
4	Australian Award Ambassador	Australian High Commission to India, Australian Government	2018
5	Endeavour Research Fellowship (ERF), Australia	Dept. of Education, Australian Government Fellowship for post-doctoral research work	2015
6	Evaluator	21 st National Children Science Congress 2013 during 27-29 th Dec, 2013 held at DST, MPCOST, Bhopal, Madhya Pradesh, India	2013
7	Two Merit Certificates	In 5 ½ months training programme on ‘Soil Conservation and Agroforestry’ held at ICAR-Indian Institute of Soil and Water Conservation (Formerly CSWCRTI), Dehradun, India	2002
8	Gold medal for Best Thesis Gold Medal for Best Research	Conferred by TNAU, Coimbatore, Tamil Nadu, India	2001

Research Projects:

Total Project handled as PI and Co-PI : 21

i) ICAR-IISWC, Research Centre, Kota, Rajasthan (Nov 2001-Dec 2008)

Sl.No	Title of the Project	PI and Co-PI of the Project	Duration
1.	Comparative study of compatibility of <i>Cenchrus ciliaris</i> with <i>Acacia tortilis</i> and <i>Acacia senegal</i> under silvipastoral system in Chambal ravine and their impact on hydrological behaviour of the watershed Budget: Rs 4.815 lakh,	A.K.Parandiyal, Shakir Ali, Ashok Kumar and J. Somasundaram (Co-Principal Investigator)	2001-2003
2.	Effect of soil amendments on surface cracks in black soils of south-eastern Rajasthan. Budget Rs 19.13 lakh,	J. Somasundaram, S.N. Prasad and Ashok kumar (Principal Investigator)	2006-Dec 2008.
3.	Cost effective conservation measures for management of medium and deep ravinous lands. Budget Rs 46.81 lakh	B.K.Sethy, A.K.Parandiyal, Shakir Ali, Ashok Kumar and J.Somasundaram (Co-Principal Investigator)	2004-Dec 2008
4.	Productive utilization of ravines through introduction of horticulture and improved planting material, Budget: Rs 19.10 lakh	A.K. Parandiyal, J. Somasundaram, B.K.Sethy and H.R. Meena (Co- Principal Investigator)	2005-Dec 2008
5.	Evaluation of different under utilized fruit species with varying interspace managements in Chambal ravines Budget: Rs 66.90	H R Meena, A K Parandiyal, J Somasundaram and Ashok kumar (Co- Principal Investigator)	2006-Dec 2008

(ii). ICAR-IISS, Bhopal, Madhya Pradesh (Dec 2008- July 2023)

Sl. No	Title of the project	PI and CoPIs of the project	Duration	Budget (In lakhs)	Project code
1.	Evaluating Conservation	Drs. J.	March 2010	21.14	NRMAIISSSIL20

	tillage on various cropping sequences/rotations for stabilizing crops productivity under erratic Climatic Conditions in Black Soils of Central India.	Somasundaram, R. S. Chaudhary, Ajay, S. Neenu	to June 2016		1000400107
2.	Impact of crop covers on soil and nutrient losses through runoff in Vertisol.	Drs R. K.Singh, J. Somasundaram, I. Rashmi, R.S. Chaudhary	June 2010 to May 2014	8.71	NRMAIISSSIL20 1000900110
3.	Changing climatic factors' influence on the nutrient acquisition, utilization and recovery by soybean and wheat/gram germplasm lines/ genotypes on black soils of central India	Drs Neenu S., K. Ramesh S. Ramana, J. Somasundaram, I. Rashmi	June 2010 to June 2013	7.85	NRMAIISSSIL20 1001000111
4.	Participatory assessment of qualitative parameters for categorizing different degrees of soil quality to enhance the soil health and productivity.	Drs. R. S. Chaudhary, J. Somasundaram, Brij Lal Lakaria, S.R. Mohanty, A.B. Singh	March 2010 Sept. 2013	5.73	NRMAIISSSOL2 01000500119
5.	Non point sources of phosphorus loading to upper lake, Bhopal.	Drs. M.V. Coumar, M. L. Dotaniya, Vasudev Meena J. Somasundaram, J.K. Saha, S. Kundu	April 2011 March 2014	5.92	NRMAIISSSIL20 1100300123
6.	Characterizing rooting behaviours, soil water patterns and nutrient uptake of soybean – chickpea under different tillage and water regimes in	Drs N. K. Sinha, M. Mohanty, Ritesh Saha, I. Rashmi, K.M. Hati, J. Somasundaram	June 2011 to December, 2014	33.67	NRMAIISSCOP2 01101000125

	Vertisols.				
7.	Enhancement of Soil Health and Livelihood of Tribals in Central India	RH Wanjari, R Elanchezhian, Prabhat Tripathi, RK Singh, KC Shinogi, Vassanda Coumar, Vasudev Meena, AL Kamble, Utkarsh Tiwari, J Somasundaram , Abhay Shirale, Asit Mandal, Hiranmoy Das, AB Singh, Asha Sahu, SK Behera, AK Vishwakarma, Monoranjan Mohanty, Seema Bhardwaj, Madhumonti Saha, Sanjay Srivastava, K Bharati, Priya Gurav Pandurang, BP Meena, AK Tripathi, Abhijit Sarkar, NK Sinha, JK Thakur, S.K. Badodiya, I/c KVK Barwani (MP), B.S. Rajput, I/c KVK Rajnandgaon (Chhattisgarh) and VK Verma, I/c KVK Betul (MP)	October 2018 to March 2021 extended up to March 2026	61.45+1 9.93=81 .38	NRMAISSSIL20 1900300203

8.	Climate change impact on water productivity of major crops in central India	N.K. Sinha, M. Mohanty, J. Somasundaram , Pramod Jha, Alka Rani, Seema Bhardwaj, Hiranmoy Das, K.M. Hati, R.S. Chaudhary	2019 to 2023	18.00	NRMAIISSSOL2 01900900212
9.	Impacts of conservation agriculture on runoff and soil loss under different cropping system in Vertisols	Prabhat Tripathi, R.K. Singh, R.S. Chaudhary, Seema Bhardwaj, J. Somasundaram , M. Mohanty, K.M. Hati	2019 to 2024	16.00	NRMAIISSSOL2 01901000213
10.	Impact of climate change on soil physical process in maize based cropping systems in vertisols of central India	Jitendra Kumar, NK Sinha, M Mohanty, J. Somasundaram , Alka Rani, KM Hati and RS Chaudhary	July 2020 to June 2024	16.20	NRMAIISSSOL2 02001000224
Sl. No	Title of the Project	PI and Co-PI of the Project	Duration	Rs in Lakh	Project Code
11.	Integrated assessment of soil and crops for enhancing productivity and C-sequestration potential of Vertisols of central India under changing climate scenarios (NICRA) (External funded)	M. Mohanty, Pramod Jha, Sangeeta Lenka, J. Somasundaram , N.K. Sinha, R.S. Chaudhary, Muneshwar Singh, Seema Bhardwaj (April 2021 to March 2026)	Feb 2017 to March 2020	Rs >50	NRMAIISSSIL20 1500400156
12.	Development, adaptation and refinement of location specific CA practices for enhancing productivity and	A.K. Biswas, R.S. Chaudhary, K.M. Hati, J. Somasundaram	April 2015 to March 2020	Rs > 50	NRMAIISSCOL2 01500600174

	profitability of rainfed eco-systems (Consortium Research Platform on Conservation Agriculture (External funded)	A.K. Vishwakarma, R.K. Singh, Pramod Jha			
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National/International Externally Competitive Grants

Sl. No	Title of the Project	PI and Co-PI of the Project	Duration	Rs in Lakh	Project Code
1	Evaluating Conservation Agriculture for Stabilizing Crop Productivity and Carbon Sequestration by Resilient Cropping Systems/Sequences under aberrant Climatic Conditions in Black Soils of Central India (NICRA) (External funded- Competitive Grant Component)	Drs. J. Somasundaram , R. S. Chaudhary, M. V. Coumar, K. M. Hati, A. Subba Rao, Pramod Jha, K. Ramesh, Ajay	September 2011-14	Rs 75.00	NRMAIISSSIL20 1101100126
	Consultancy Projects				
1	Evaluating the impact of Geoxol.com on soil health and crop productivity funded by M/s Privi Life Science, Mumbai	J Somasundaram , NK Sinha, M Mohanty, RS Chaudhary, KM Hati, AO Shirale, AK Patra	Oct 2020 to Dec 2022	Rs 34.12	NRMAIISSSCL2 02000300215
2	Impact evaluation	S.N.Prasad, R.K.Singh,	2005	-	--

	study of NWDPR watershed Deoli Kalan, Distt. Kota (Rajasthan)	Ashok Kumar, B.K.Sethy, A.K.Parandiyal J Somasundaram and Vikram Chauhan (Co- Principal Investigator)			
3	To Implement Farmer's Participatory Action Research Programme (FPARP) funded by MoWR.	Co-Principal Investigator	2007-2008	-	--

Other important responsibility: Nil