

## Dr. SABITHA SOMAN

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### Education

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**Ph.D.** Environmental Science, University of Kerala, India.

**M.Phil.** Environmental Science., University of Kerala, India

**M.Sc.** Environmental Science, University of Kerala, India

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### Professional Experience:

1. **Post-doctoral researcher** at Cochin University of Science and Technology (CUSAT), Kochi, India during May 2017 to September 2024.
2. **Ph.D. scholar** at ICAR-Central Tuber Crops Research Institute (CTCRI), Thiruvananthapuram, Kerala, India during August 2011 to April 2016 and worked on the topic '**GIS based nutrient decision support system for sustainable cassava production in Kerala, India**'.
3. **Senior Research Fellow** (SRF), Department of Science and Technology (DST), Government of India funded research project at ICAR-Central Tuber Crops Research Institute (CTCRI), Thiruvananthapuram, Kerala, India

### Areas of Expertise

1. Modeling soil nutrient requirements of crops using GIS
2. Spatial variability analysis of soil properties using GIS software.
3. Assessment of soil health, carbon stocks, greenhouse gas emissions and sustainability indicators
4. **Climate modelling studies** using geoinformatics tools and ecological niche models such as ECOCROP
5. Vulnerability mapping of hazardous environment using GIS
6. Effluent treatment using adsorption and electrodialysis techniques

### Awards and Recognitions

1. **First Rank** in M.Sc. Environmental Science, University of Kerala, India
2. **Best Research Paper Award** from Society for Horticultural Research and Development, New Delhi, India

### Membership in Scientific Professional Societies

1. Life member, Indian Society for Root Crops (ISRC), ICAR-CTCRI, Thiruvananthapuram, Kerala, India

## **Publications**

### **A. Research Papers in Journals: 11**

1. Karthik Rajeev, **Sabitha Soman**, V.R. Renjith and Priscilla George. 2019. Human vulnerability mapping of chemical accidents in major industrial units in Kerala, India for better disaster mitigation. *International Journal of Disaster Risk Reduction*, 39: 1-10.
2. Remya Remesh K.R., G. Byju, **Sabitha Soman**, S. Raju, V. Ravi. 2019. Future changes in mean temperature and total precipitation and climate suitability of yam (*Dioscorea* spp.) in major yam-growing environments in India. *Current Horticulture*, 7(1): 28-42.
3. Byju, G., **Sabitha Soman** and M. Vani. 2018. Projected climate changes and environment suitability of foot yam in major growing areas of India. *Indian Journal of Horticulture*, 75(2):341-344.
4. Renjith V.R., Meenu Vijayan and **Sabitha Soman**. 2017. Fuzzy fault tree analysis of LPG cross country pipelines - A case study. *International Journal of Current Trends in Engineering and Technology*, 3(5): 221-227.
5. **Sabitha Soman**, and G. Byju. 2017. On-farm validation of site-specific nutrient management in cassava (*Manihot esculents*) in Thiruvananthapuram district (Kerala). *Current Horticulture*, 5(1): 20-30. (*Best Research Paper Award*)
6. Byju, G. M Nedunchezhiyan, James George, S. Sunitha, R. Kamalkumaran, P. P. Singh, K. Mamatha, Surajit Mitra, Jayanta Tarafdar, Ketan Desai, V. Ravi, M. Vani, **Sabitha Soman** and K. R. Remya Remesh. 2016. Fertilizer best management practices by SSNM and customized fertilizers for elephant foot yam (*Amorphophallus paeoniifolius*) cultivation in India. *Indian Journal of Agricultural Sciences*, 86 (4): 485–93.
7. **Sabitha Soman**, G. Byju, and J. Sreekumar. 2016. Projected changes in mean temperature and total precipitation and climate suitability of cassava in major growing environments of India. *Indian Journal of Agricultural Sciences*, 86 (5): 647–53.
8. Byju, G., M. Nedunchezhiyan, A.C. Hridya, and **Sabitha Soman**. 2016. Site-specific nutrient management for cassava in southern India. *Agron. J.*, 108(2): 830-840.
9. **Sabitha Soman**, and G. Byju. 2014. Geospatial assessment and mapping of soil properties of horticultural farm. *Current Horticulture*, 2(1): 18-27.
10. **Sabitha Soman**, G. Byju, and R. Bharathan. 2013. GIS based decision support system for precision farming of cassava in India. *Acta Biologica Indica*, 2(2): 394-399.
11. **Sabitha Soman**, and G. Byju. 2013. Geospatial assessment and mapping of selected soil physical and chemical properties at farm level: A case study in an Ultisol. *J. Root Crops*, 39(2): 73-86.

### **B. Technical Bulletins : 3**

1. Raji P, Sabitha Soman, Remya Remesh K.R., Shiny R., Santhosh Mithra V.S., Sunitha S. and Byju G. 2022. Climate modeling studies of tropical tuber crops. Technical Bulletin, Series 90, ICAR-Central Tuber Crops Research Institute, Thiruvananthapuram, Kerala, India.
2. Byju G., Nedunchezhiyan M., Haripriya Anand M., Suchitra C.S., Hridya A.C. and Sabitha Soman. 2015. Handbook of site specific nutrient management of cassava

(CASSNUM). Technical Bulletin Series 62, ICAR-CTCRI, Sreekariyam, Thiruvananthapuram, Kerala, India.

3. Byju G. and Sabitha Soman. 2015. Soil resource inventory of ICAR-CTCRI farm using geospatial technologies. Technical Bulletin Series 63, ICAR-CTCRI, Sreekariyam, Thiruvananthapuram, Kerala, India.

#### **C. Technical Leaflets : 4**

1. Byju G. and Sabitha Soman. 2015. Site specific nutrient management. Crop: Cassava, State: Kerala. Published by ICAR-Central Tuber Crops Research Institute, Sreekariyam, Thiruvananthapuram, Kerala, India.
2. Byju G. and Sabitha Soman. 2015. Site specific nutrient management. Crop: Cassava, State: Tamil Nadu. Published by ICAR-Central Tuber Crops Research Institute, Sreekariyam, Thiruvananthapuram, Kerala, India.
3. Byju G. and Sabitha Soman. 2015. Site specific nutrient management. Crop: Cassava, State: Andhra Pradesh. Published by ICAR-Central Tuber Crops Research Institute, Sreekariyam, Thiruvananthapuram, Kerala, India.
4. Byju G. and Sabitha Soman. 2015. Site specific nutrient management. Crop: Cassava, State: Maharashtra. Published by ICAR-Central Tuber Crops Research Institute, Sreekariyam, Thiruvananthapuram, Kerala, India.

#### **D. Research Papers Presented in Seminar, Symposia, Conference etc. : 11**

1. Sabitha Soman., G. Byju, and R. Bharathan. 2012. GIS based decision support system for precision farming of cassava in India. Second National Symposium on Innovative approaches and modern technologies for crop productivity, food safety and environmental sustainability held at Hotel Mangala Towers, Thrissur, Kerala, India during 19-20 November 2012.
2. Sabitha Soman., and G. Byju. 2013. Impact of 2030 climate on suitability of cassava in major growing environments of India. International Conference on tropical roots and tubers for sustainable livelihood under changing agro-climate (ICTRT 2013) held at Hotel Mascot, Thiruvananthapuram, Kerala, India during 09-12 July 2013.
3. Sabitha Soman., and G. Byju. 2013. Assessment and mapping of spatial variation of selected soil physical and chemical characteristics of CTCRI farm. International Conference on tropical roots and tubers for sustainable livelihood under changing agro-climate (ICTRT 2013) held at Hotel Mascot, Thiruvananthapuram, Kerala, India during 09-12 July 2013.
4. Sabitha Soman., and G. Byju. 2013. Adaptation of cassava to 2030 climate of India. International Conference on Ecosystem conservation and sustainable development (ECOCASD 2013) organized by Department of aquatic biology and fisheries, Kariyavattom, Thiruvananthapuram, Kerala, India.
5. Byju G., M. Haripriya Anand, C.S. Suchitra, A.C. Hridya and Sabitha Soman. 2011. Site specific nutrient management for cassava in India. p. 26. *In*: Lefroy et al. (eds.). Program and Abstracts of 9<sup>th</sup> Regional Cassava Workshop: Sustainable cassava production in

Asia for multiple uses and for multiple markets, 27 November - 03 December 2011, Nanning, Guangxi, China.

6. Byju G., C.S. Suchitra, A.C. Hridya, M. Haripriya Anand and Sabitha Soman. 2012. Nutrient decision support system for site specific nutrient management of cassava in India. Global Cassava Partnership, Second Scientific Conference, 'Cassava: overcoming challenges of global Ccimatechange, June 18-22, 2012, Kampala, Uganda.
7. Byju G., A.C. Hridya, C.S. Suchitra and Sabitha Soman. Precision nutrient management of cassava at field scale by a modeling approach. 2012. Third National Conference on Agroinformatics and Precision Agriculture 2012, 1-3 August 2012, Hyderabad, India. Organised by Indian Society of Agricultural Information Technology and Indian Institute of Information Technology, Hyderabad, India.
8. Byju G., Sabitha Soman, K.R. RemyaRemesh and M. Vani. 2013. Impact of 2030 climate on suitability of yams in sub-Saharan Africa and Asia. In Book of Abstracts. Yams 2013: First global conference on yam, 3-6 October 2013, Accra, Ghana, IITA, Nigeria. pp. 109.
9. Byju G., Hridya A.C., Suchitra C.S. and Sabitha Soman. 2014. Geoinformatics for precision nutrient management of crops at field scale. 27th National Convention of Agricultural Engineers, 22 – 23 February 2014, Thiruvananthapuram, Kerala.
10. Byju, G., V. Ravi, James George, Sabitha Soman, and K.R. RemyaRemesh. 2016. Geoinformatics for climate suitability studies of plants. National Seminar on Plant Science Technology for sustainable World. February 25-26. MG University, Kottayam, Kerala, India.
11. Sabitha Soman, Priscilla Grace George, V.R. Renjith and Jiji Varghese. 2019. Population vulnerability assessment of chlorine release hazard from a chlor alkali industry using geographical information system (GIS). National Conference on Recent Advancement in Industrial Safety Engineering (RAISE 2019). March 28-29. Toc H Institute of Science & Technology, Kochi, Kerala, India.