



Personal Information

Name	:	Dr Mohammad Shamim
Designation	:	Senior Scientist
Email	:	mohammad.shamim@icar.gov.in
Telephone(Office)	:	Nil
Mobile No.	:	+91 9045040407
Qualification	:	Ph.D.
Discipline	:	Agricultural Meteorology
Specialization	:	Crop Simulation Modelling (Ph.D.) and Crop Micrometeorology (M.Sc.)
Training/ advance exposure (5-6 lines only)	:	<p>International</p> <ol style="list-style-type: none"> 1. Third Training Workshop of SAARC-Australia Project on “Developing capacity in cropping systems modeling to promote food security and the sustainable use of water resources in South Asia organised by SARC Agriculture Centre, Dhaka, Bangladesh during March 10-14, 2013. 2. Pre-workshop, second training workshop and midterm review meeting of SAARC-Australia Project on ‘Developing Capacity in Cropping Systems Modelling to Promote Food Security and the Sustainable Use of Water Resources in South Asia organized by University of Perideniya, Kandy, Srilanka during May 26-June 1, 2012. 3. Short course training programme on “Crop Growth Modelling (DSSATv. 4.5) application in land resource management” organized by ICRISAT, Hyderabad during December 5-9, 2011. 4. First Training Workshop of SAARC-Australia Project on ‘Developing Capacity in Cropping Systems Modelling to Promote Food Security and the Sustainable Use of Water Resources in South Asia organised by SARC Agriculture Centre, Dhaka, Bangladesh during November 20-24, 2011. 5. Exposure training workshop of SAARC-Australia Project on “Developing capacity in cropping systems modelling to promote food security and the sustainable use of water resources in South Asia organised by SARC Agriculture Centre, Dhaka, Bangladesh during August 8-10,2011. <p>National</p>

		<ol style="list-style-type: none"> 6. Enhancing Agricultural Resilience through Index Based Flood Insurance and Post-flood Management Interventions in India” jointly organized by ICAR-Indian Institute of Water Management (IIWM), Bhubaneswar, Odisha and International Water Management Institute, New Delhi 7. Science Administration and Research Management organised by Administrative Staff College of India, Bella Vista, Hyderabad-500082 during 01-12 July 2019. 8. GIS approach in soil, water and plant health management” organized by NIPHM, Rajendranagar, Hyderabad during 14-18 May 2018. 9. Summer School on “Forecast modeling in crops organized by ICAR-IASRI, New Delhi during July 17- August 6, 2012. 10. Conservation Agriculture: Developing Resilient Systems Sponsored by CSISA Project funded by USAID and Bill Gates Foundation (BMGF) organized by ICAR-CSSRI, Karnal during September 27–04 October 2014.
Professional Information		
Major Contributions	:	<ol style="list-style-type: none"> 1. Identified climate resilient climate resilient production package for cropping system (Soybean-Chickpea) under extreme (high and deficit) rainfall situations for Vindhya Plateau Agro-climatic Region of Madhya Pradesh. 2. Alternate efficient farming Systems (08 nos.) for 08 NARP Zones viz., North Gujarat Zone (Gujarat), East And South-eastern Coastal Plain Zone (Odisha), Coastal Saline Zone (West Bengal), Central Plain Zone (Uttar Pradesh), north-western zone (Tamil Nadu), Sub Humid Southern Plain Zone (Rajasthan), Western Maharashtra Plain Zone (Maharashtra) and Central Maharashtra Plateau Zone (Maharashtra) for higher production, marketable surplus, profit and nutrition. 3. Package of practices for organic production of crops in 51 cropping systems suitable to 12 states. Packages have been shared with DAC&FW 4. Best performing 55 varieties of crops for organic farming suitable for 16 states were identified and transferred to stakeholders. 5. Raising of maize for cobs +vegetable cowpea in 1:1 ratio on broad beds (BB) and <i>sesbania</i> in furrow during <i>kharif</i> and mustard in furrow and 3 rows of lentil on broad beds in <i>rabi</i>, while 3 rows of green gram on beds in summer produced highest REY of 25.59 t ha⁻¹ and was remarkably better over other systems 6. Adaptation index (AI) developed based on degree of adaptation of a particular adaptive measure to grow an important enterprise of the Integrated Farming Systems under changing climate and higher AI identified for 25 centres of On Farm Research (OFR) and representing a particular NARP zone of the country.

		<ol style="list-style-type: none"> 7. Growing of crops in sequence of Pigeon pea+ Bengal gram-W + MTD (ZT)-cowpea (F) was found as climate resilient cropping systems under bio-intensification. 8. Quantified the effects of different irrigation regimes on rice-wheat cropping system in the Upper-Gangetic Plains of India using APSIM. 9. Conceptualized and documented Bankable Projects on Integrated Farming Systems for upscaling to landscapes level. 10. Designed and documented Integrated Farming Systems for Agricultural Diversification, Enhanced Income and Employment 25 states and UTs.
Current area of research	:	<ol style="list-style-type: none"> 1. Crop Simulation Modelling 2. Crop Micrometeorology 3. Climate Change Study 4. Climate resilient agriculture production systems
Major Publications	:	<ol style="list-style-type: none"> 1. Mohammad Shamim, A. M. Shekh, V.J. Patel, J.F. Dodia, D.M. Korat and A.M. Mehta (2009). Effect of weather parameters on population dynamics of green leaf hopper and white backed plant hopper in paddy grown in middle Gujarat region. <i>Journal of Agrometeorology</i>, Volume 11, Number 2, 172-174. (NASS Rating: 6.47) 2. Mohammad Shamim, Raj Singh, V.U.M.Rao and Diwan Singh (2009). Microclimatic profiles in soybean-pearl millet intercropping systems. <i>Journal of agrometeorology</i>, 10(2):151-157. (NASS Rating: 6.47) 3. Mohammad Shamim, Shekh A.M., Pandey V., Patel H.R. and Lunagaria M.M. (2010). Sensitivity of CERES-Rice model to different environmental parameters on the productivity of aromatic rice in middle Gujarat. <i>Journal of Agrometeorology</i>, 12 (2): 213-216. (NASS Rating: 6.47) 4. Mohammad Shamim, A. M Shekh, Vyas Pandey, H R Patel, M M Lunagaria (2012). Simulating the phenology, growth and yield of aromatic rice cultivars using CERES-Rice model under different environments. <i>Journal of Agrometeorology</i>, 14: 1. 31-34. (NASS Rating: 6.47) 5. Singh Devendra, Mohammad Shamim, Pandey Rakesh, Kumar Vipin (2012). Growth and yield of wheat genotypes in relation to environmental constraints under timely sown irrigated condition. <i>Indian Journal of Plant Physiology</i>, 17: 2. 113-120. (NASS Rating: 5.18) 6. Mohammad Shamim, Devendra Singh, B. Gangwar, K.K. Singh and Vipin Kumar (2013). Agrometeorological indices in relation to phenology, biomass accumulation and yield of rice genotypes under Western Plain zone of Uttar Pradesh. <i>Journal of Agrometeorology</i>, Special Issue Vol II, 2013. 50-57. (NASS Rating: 6.40). (NASS Rating: 6.47) 7. Vinay Prasad Mandal, Sham Shutrana, P C Pandey, S Patairiya, M Shamim, Sandeep Sharma, V Tomar, Pavan Kumar (2014): Appraisal of suitability for urban planning and expansion analysis using Quick Bird satellite data. ARPN

	<p>Journal of Engineering and Applied Sciences. VOL. 9, NO. 12. 2716-2723(SJR: 0.224).</p> <ol style="list-style-type: none"> 8. N. Subash, M. Shamim, V.K. Singh, B. Gangwar, B. Singh, D. S. Gaydon, C.H. Roth, P.L. Poulton and A.K. Sikka (2015). Applicability of APSIM to capture the effectiveness of irrigation management decisions in rice-based cropping sequence in the upper-Gangetic Plains of India. <i>Paddy and Water Environment</i>, 13:325-335. (NAAS:7.26). 9. Chaudhary, V. P. Singh, K.K. Pratibha, Ranjan Bhattacharyya, Shamim, M., Srinivas, I. and Patel, Anurag (2017). Energy conservation and greenhouse gas mitigation under different production systems in rice cultivation. <i>Energy - Elsevier</i> 130: 307–317. (NAAS Rating: 12.8) 10. Gaydon D.S., B. Singh, E. Wang, P. L. Poulton, B. Ahmad, F. Ahmed, S. Akhter, I. Ali, R. Amarasingha, A. K. Chaki, C. Chen, B. U. Choudhury, R. Darai, A. Das, Z Hochman, H Horan, E.Y. Hosang, K. P. Vijaya, M. R. Khan, A. M. Laing, L.Liu, M.A.P.W.K Malaiachichi., K. P. Mohapatra, M. A Muttaleb, B. Power, A.M. Radanielson, G.S. Rai, M.H Rashid.,W.M.U.K. Rathanayake, M. M. R. Sarker, D. R. Sena, M Shamim, N. Subash, A., Suriadi, L.D.B. Suriyagoda, G. Wang, R. K. Yadav, and C. H. Roth (2017). Evaluation of the APSIM model in cropping systems of Asia. <i>Field Crops Research</i>. 204: 52-75. (NAAS Rating: 10.31). 11. Jana, C., N. M. Alam, Mandal D., Shamim M. and Kaushal Rajesh (2017). Spatio-temporal rainfall trends in the twentieth century for Bundelkhand region, India. <i>Journal of Water and Climate Change</i>. 441- 455. doi: 10.2166/wcc.2017.120. (NAAS Rating: 7.25). 12. Mohammad Shamim, B. Ganwar, N.K. Jat, Vipin Kumar, Sunil Kumar, N.M Alam and Vinay Prasad Mandal (2018). Morpho-physiological characterization of aromatic rice (<i>Oryza sativa</i>) genotypes for grain yield under timely sown irrigated condition of upper IGPs. <i>Journal of Agrometeorology</i>, 20 <i>Special issue -"NASA 2014" part-II</i>):129-134. (NAAS Rating: 6.47). 13. N. K. Jat, R. S. Yadav, Sudhir Kumar, M. Shamim, N. Ravisankar, Subhash Babu and A.S. Panwar (2018). Influence of different nutrient management practices on productivity, nutrient dynamics and profitability in basmati rice-wheat cropping systems under Western Indo Gangetic Plains of India, <i>Indian Journal of Agricultural Sciences</i>, 89 (5):793-9. (NAAS Rating: 6.25). 14. N. K. Jat, Sudhir Kumar, M. Shamim Subhash Babu, N. Ravisankar and A.S. Panwar (2018). Evaluation of Maize (<i>Zea mays</i>) Cultivars under Organic Production System in Northwestern Indo-Gangetic plains of India, <i>Indian Journal of Agricultural Sciences</i>, 89 (5): 828–33. 15. N.K. Jat, R.S. Yadav, Sudhir Kumar, N. Ravisankar and M. Shamim (2018). Evaluation of nutrient management practices
--	---

	<p>under different cropping systems in northwestern Indo-Gangetic plains of India” <i>Annals of Plant and Soil Research</i> 20(4): 409-415.</p> <p>16. Panwar, A.S., M. Shamim and N. Ravisankar (2019). Influence of inter-annual rainfall variation on nutrient recycling and sustainability of integrated farming systems in different agro-ecosystems, <i>Indian Journal of Fertilizers</i>, 14 (2): 16-24.</p> <p>17. A. S Panwar, Ravisankar, N., Singh, R., Purusty, A.K., Shamim, M., Tripathi, D., Mohan, B. (2019). AICRP on IFS Salient Achievements and Future Directions. <i>Indian journal of fertilisers</i>, 15 (4) pp. 14-29.</p> <p>18. A. S. Panwar, N. Ravisankar, Raghuveer Singh, A. K. Prusty, M. Shamim, D. Tripathi and Brij Mohan (2019). AICRP on Integrated Farming Systems: Salient achievements and Future directions. <i>Indian Journal of Fertilizers</i>, 15(4):338-353.</p> <p>19. A. S. Panwar. M. Shamim, Subhash Babu, N. Ravisankar, Ashisa Kumar Prusty, N. M. Alam, D. K. Singh, J. S. Bindhu, Jashanjot Kaur, L. N. Dashora, M. D. Latheef Pasha, Soumitra Chatterjee, M. T. Sanjay and L. J. Desai (2019). Enhancement in Productivity, Nutrients Use Efficiency, and Economics of Rice-Wheat Cropping Systems in India through Farmer’s Participatory Approach, <i>Sustainability</i>, 11 (122): 1-26.</p> <p>20. Vinay Prasad Mandal, N. Ravisankar, B. Gangwar, N. Subash, M. Shamim, Brijmohan N, Sujay Dutta, K R Manjunath and J S Parihar (2019). Methodology for Early Estimation of Sugarcane Area of Uttar Pradesh using Remote Sensing and Ground truth Tools. <i>Journal of Agrometeorology</i>, 21 (Special issue-NASA-2014, Part –III), 97-103.</p> <p>21. Jashanjot Kaur, A. K. Prusty, N. Ravisankar, A. S. Panwar, M. Shamim , S. S. Walia , S. Chatterjee , M. L. Pasha , Subhash Babu , M. L. Jat , Santiago López Ridaura , Jeroen C. J.Groot , Roos AdelhartToorop , Luis Barba Escoto , Kohima Noopur & Poonam Kashyap (2021). Farm typology for planning targeted farming systems interventions for smallholders in Indo Gangetic Plains of India. Scientific reports. 11:20978. https://doi.org/10.1038/s41598-021-00372-w</p> <p>22. N.K. Jat, M. Shamim and Sudhir Kumar 2021. Physiological evaluation of growth and yield variation of mustard (<i>Brassica juncea</i>) varieties under organic products in North-Western Indo-Gangetic Plains. <i>Annals of Plant and Soil Research</i>. 23 (4):509-514.</p> <p>23. Sunila Kumari, Poonam Kashyap, N. Ravisankar, A.K. Prusty and M. Shamim (2021). Scaling up of farmer producer organisations (fpos) for promotion of organic fruits and vegetable farming in Haryana. <i>Prog. Agric.</i> 21 (2): 243-248.</p> <p>24. AS Panwar, AK Prusty, M. Shamim, N. Ravisankar, MA Ansari and Raghuveer Singh (2021). Nutrient recycling in Integrated Farming Systems for Climate Resilience and sustainable income. <i>Indian Journal of Fertilizers</i>, 17(11):1126-1137.</p>
--	--

25. AS Panwar, N. Ravisankar, Raghuveer Singh, AK Prusty, **M. Shamim**, MA Ansari and Kohima Noopur (2021). Potential of integrated farming system modules for diverse ecosystems of India. *Indian Journal of Agronomy*, 66 (5th IAC Spl. Issue): S15-S32.
26. Poonam Kashyap, Ashisa K. Prusty, Azad S. Panwar, Venkatesh Paramesh, Ravisankar Natesan, **M. Shamim**, Nisha Verma, Phool Chand Jat and Mahendra Pal Singh. 2022. Achieving Food and Livelihood Security and Enhancing Profitability through an Integrated Farming System Approach: A Case Study from Western Plains of Uttar Pradesh, India. *Sustainability* 2022, 14, 6653. <https://doi.org/10.3390/su14116653>.
27. Ashisa K. Prusty 1, Ravisankar Natesan 1, Azad S. Panwar, Mangi L. Jat, Jagdish P. Tatarwal, Santiago López-Ridaura, Roos Adelhart Toorop, Jelle van den Akker, Jashanjot Kaur, Prakash C. Ghasal, Jeroen C. J. Groot, Luis Barba-Escoto, Poonam Kashyap, Meraj A. Ansari, and **Mohammad Shamim**. 2022. Redesigning of Farming Systems Using a Multi-Criterion Assessment Tool for Sustainable Intensification and Nutritional Security in Northwestern India. *Sustainability* 2022, 14, 3892. <https://doi.org/10.3390/su14073892>.
28. Venkatesh Paramesh, Parveen Kumar, **Mohammad Shamim**, Natesan Ravisankar, Vadivel Arunachalam, Arun Jyoti Nath, Trivesh Mayekar, Raghuveer Singh, Ashisa K. Prusty, Racharla Solomon Rajkumar, Azad Singh Panwar, Viswanatha K. Reddy, Malay Pramanik, Anup Das, Kallakeri Kannappa Manohara, Subhash Babu and Poonam Kashyap. 2022. Integrated Farming Systems as an Adaptation Strategy to Climate Change: Case Studies from Diverse Agro-Climatic Zones of India. *Sustainability* 2022, 14, 11629. <https://doi.org/10.3390/su141811629>.
29. Azad S Panwar, Meraj A Ansari, Natesan Ravisankar, Subhash Babu, Ashisa K Prusty, Prakash C Ghasal, Jairam Choudhary, **Mohammad Shamim**, Raghuveer Singh, KJ Raghavendra, Debashis Dutta, Amrit L Meena, Gautam V Chauhan, Majhrool H Ansari, Raghavendra Singh, CS Aulakh, DK Singh, PB Sharma. 2022. Effect of organic farming on the restoration of soil quality, ecosystem services, and productivity in rice–wheat agro-ecosystems. *Front. Environ. Sci.*, 10 October 2022, Sec. Land Use Dynamics, Volume 10 - 2022 | <https://doi.org/10.3389/fenvs.2022.972394>.
30. **M. Shamim**, A S Panwar, N. Ravisankar, P.C. Jat, A. K. Prusty, M. P. Singh, Poonam Kashyap, Nisha Verma, Shiv Datt, M A Ansari and Sunil Kumar. 2022. On-farm Agro-meteorological evaluation of late sown wheat (*Triticum aestivum*) under irrigated agro-ecosystem of Upper Indo-

		<p>Gangetic Plains. Indian Journal of Agricultural Sciences 92 (6): 732–6.</p> <p>31. N.K. Jat, M. Shamim and Sudhir Kumar, N. Ravisankar, R S Yadav, Subhash Babu and A S Panwar. 2021. Agrometeorological evaluation of mustard (<i>Brassica juncea</i>) under organic production in Northwestern Indo-Gangetic Plains. Indian Journal of Agricultural Sciences 92 (3): 339–43.</p> <p>32. M. Shamim, A S Panwar, N. Ravisankar, P.C. Jat, A. K. Prusty, M. P. Singh, Poonam Kashyap, Nisha Verma, Shiv Datt, M A Ansari and Sunil Kumar. 2022. On-farm Agro-meteorological evaluation of late sown wheat (<i>Triticum aestivum</i>) under irrigated agro-ecosystem of Upper Indo-Gangetic Plains. <i>Indian Journal of Agricultural Sciences</i> 92 (6): 732–6.</p> <p>33. Natesan Ravisankar, Meraj A Ansari, Mohammad Shamim, Ashisa K Prusty, Raghuveer Singh, Azad S Panwar, Debashis Dutta, Suryanarayana Bhaskar, Jayasree S Bindhu, Mothkur T Sanjay, Jashanjot Kaur, Cini Varghese, Sukanta Dash, Arpan Bhowmik, Santanu K Bal. (2022). Sustainable livelihood security of small farmers improved through a resilient farming system in the semiarid region of India. <i>Land Degrad Dev.</i> 2022; 33:2830–2842.</p> <p>34. Magar P.N., Mohammad Shamim, N Ravisankar and AS Chincholkar (2023). Field efficacy of HaNPV for the management of pod borer, <i>Helicoverpa armigera</i> (Hubner) in chickpea, <i>The Pharma Innovation Journal</i>; 12(5): 3199-320.</p> <p>35. Ravisankar, N., D.K. Singh, D.K. Parmar, A.B. Singh, C.K. Thankamani, Meraj Alam Ansari, PC Jat, Poonam Kashyap, M. Shamim, A.K. Prusty, Raghuveer Singh, Raghavendra, KJ, Jayanta Layak, S. Malik, Lalit Kumar, Chandra Bhanu and Sunil kumar. 2023. Nutrient Management in Organic Farming through Cropping and Farming Systems Approach in India, <i>Indian Journal of fertilizers</i>, 19:1166-1174</p> <p>36. Sunil Kumar, N. Ravisankar, Nisha Verma, Nirmal, Jairam Chaudhary, Raghuveer Singh Peyush Punia, Chandra Bhanu, Meraj Alam Ansari, A.K. Prusty, M. Shamim and K.J. Raghavendra. 2023. Agri-food system transformation through integrated farming systems approach, <i>Indian Journal of Agronomy</i> 68: S98-S109.</p> <p>37. Abhishek Painkra, M. Shamim, H. V. Puranik, N. Ravisankar, Prakash Ghasal, Poonam Kashyap, A.K. Prusty, and Debashish Dutta. (2024). Microclimatic study under wheat, mustard and chickpea crops in Western plain zone of Uttar Pradesh. <i>Journal of Agrometeorology</i>, 26 (1): 25-31.</p>
Awards and Fellowships (ICAR/Recognition society awards)	:	<p>1. ICAR-IIFSR Team award for extension/outreach programme for Farmer First Programme awarded to Dr. A.K.Prusty, Dr. M. Shamim, Dr. Raghuveer Sing, Dr. Raghavendra KJ, on 34th Foundation day on 01st April 2023.</p>

	<ol style="list-style-type: none"> 2. ICAR-IIFSR-34th Foundation Day Award for Best Research Paper for the research paper (Ravisankar, N., Ansari, M.A.*, Shamim, M., Prusty, A.K., Singh, R., Panwar, A.S., Dutta, D., Bhaskar, S., Bindhu, J.S., Sanjay, M.T., Kaur, J., Varghese, C., Dash, S., Bhowmik, A., Bal., S.K. 2022. Sustainable livelihood security of small farmers improved through resilient farming systems in the Semarid region of India, <i>Land degradation and development</i> 33: 2830-2842 3. 4. IPI-FAI Award for Promoting Balanced and Integrated Fertiliser Use with Emphasis on Potassium conferred by Fertilizer Association of India on 1st December 2021 with cash amount of Rs. 2,00,000/-, Gold Medal and Citation. 5. Team Award for Best Centre of All India Coordinated Research Project on Integrated Farming Systems (AICRP on IFS) under On-station: ICAR-Institute category during biennium of 2018-20. 6. <u>Dhiru Morarji Memorial Award</u> for best article in agricultural sciences 2017-18 by the Fertilizer Association of India, New Delhi for as FIRST PRIZE for research article "Influence of Inter-annual Rainfall Variation on Nutrient Recycling and Sustainable Integrated Farming Systems in Different Agroecosystems". 7. <u>Distinguished Scientist Award</u> conferred by the Agro Environmental Development Society (AEDS), MajhraGhat, Rampur UP, India on 28 September 2019. 8. <u>Best Paper Award</u> for 'Effect of weather parameters on population dynamics of green leaf hopper (<i>Nephotettix virescens</i> Distant) and white backed plant hopper (<i>Sogetella furcifera</i> Horv) in paddy growing middle Gujarat region' published in <i>Journal of Agrometeorology</i>, 10 (2), 172-174. 9. <u>Certificate of Excellence</u> conferred by Project Team Leader SAARC-Australia Project & Principal Research Scientist, CSIRO, Australia. 10. <u>CSIR-UGC Sr. Res. Fellowship</u> from University Grants Commission (UGC), New Delhi in EARTH, ATMOSPHERIC, OCEAN & PLANETARY SCIENCES for pursuing Ph.D (Agricultural Meteorology) during January, 2006 - June, 2009. 11. <u>Junior Research Fellowship</u> from Indian Council of Agricultural Research (ICAR), New Delhi, in Physical Science for pursuing M.Sc. (Agril. Meteorology) during August 2002-August,2004.
--	---