

**SPECIALIZED AREAS**

Urban Water Governance, Disaster Risk Assessment, Anthropocene and Habitat Loss, Economics of Land Use Change, Environmental Toxicology and Health Adaptation, Hydroinformatics and Environmental Planning.

**EDUCATION**

**Indian Institute of Technology (IIT) Roorkee**, Roorkee, India

PhD, July 2007

*Thesis Title:* Studies on the Removal of Arsenic - An Environmental Toxicant

**Pondicherry University**, Pondicherry, India

M.Sc. 5 Year Integrated Sciences, 1998-2003, CGPA 8.22/10.0

**St. Joseph of Cluny Girls Higher Secondary School**, Pondicherry, India

Higher Secondary, April 1998

81.3%

Matriculation, April 1996

80.1%

**AWARDS & HONORS:**

Awarded Seed Grant 2019 by Advanced Institute on Slow-Onset Climate Disasters, Integrated Research for Disaster Risk (IRDR) & co-sponsored International Council for Science (ICSU), International Social Science Council (ISSC) and the United Nations Office for Disaster Risk Reduction (UNDRR)

Visiting Young Fellow under research collaboration with Dr Shih-Chun Candice, Center for Sustainability Science, Academia Sinica and Prof. Daigee Shaw Department of Economics, Academia Sinica, Taipei, Taiwan [June-July 2018]

Awarded World Ecofeminism Promotion Award, 2017 during the World Clean Environment Congress held on October 5, 2017 by the International Foundation for Environment and Ecology and the Confederation of Indian Universities

Visiting Fellow under the UGC Special Assistance Programme DRS-II by the Department of Economics, Jamia Millia Islamia – Central University New Delhi (March 2017)

Young Environmental Scientist Award for the year 2016 by the International Foundation for Environment and Ecology and the Confederation of Indian Universities

Awarded Research grant by the South Asian Network of Economic Institutes, 16th Round Regional Research Competition of South Asia, 2015

Awarded Research grant by The Economics of Ecosystems and Biodiversity [TEEB] – Deutsche Gesellschaft für Internationale (GIZ) GmbH, Indo-German Biodiversity Programme to assess the Incentives for Sustainable Management and Ecosystem Services, 2014

Awarded with doctoral research fellowship by the Ministry of Human Resource and

Development (MHRD), New Delhi, India (2003- 2007)

Awarded by the Indian Academy of Sciences, Bangalore for the Summer Research Fellowship, 2003

Qualified Graduate Aptitude Test for Engineering (GATE), Feb. 2003

Qualified in the Test for English as Foreign Language (TOEFL), Oct. 2002

## **PROFESSIONAL EXPERIENCE**

### **A. Academic Position**

<b>Professor, Madras School of Economics</b>	May 2022 onwards
<b>Associate Professor, Madras School of Economics</b>	May 2013 till April 2022
<b>Assistant Professor, Madras School of Economics</b>	October 2007-April 2013

### **Teaching Assignments @ MSE:**

**Environmental Policy, Economics of Environment and Health, Environment-Economy Interactions in the Anthropocene, Urban Economics, Mathematical Methods** to the Post-graduate program of Environmental Economics, General Economics, Actuarial Economics, Financial Economics and Applied Quantitative Finance, Madras School of Economics.

**Quantitative Methods, Calculus and Differential Equations and Optimization** courses for the Post-graduate Diploma in Management – Finance and Research & Business Analytics.

### **Guest Professor Position [at reputed National Institutes]:**

#### **IIM KOZHIKODE**

**Environmental Governance and Sustainability** course for Executive Post-Graduate Programme, Term 5 (2019-21 batch), IIM Kozhikode

**Natural Resource and Development** course for Doctoral Fellow Programme in Management, Term 5 (2019), IIM Kozhikode

**Environmental Management** course for Post-Graduate Programme, Term 3 (2018-20 batch), IIM Kozhikode

#### **IITDM Kanchipuram**

**Ecology and Environment** course for Under-graduate students of B.Tech, Indian Institute of Information Technology, Design and Manufacturing (IIITDM, Kanchipuram), Chennai [2011-2017]

#### **NITTTR Chennai**

**Sustainable Development and Environmental Management** course for the international students from nine countries (Afghanistan, Bhutan, Egypt, Ethiopia, Fiji Island, Nigeria, Tunisia, Senegal and South Sudan) at the Center for Environmental Management, National Institute of Technical Teachers Training and Research, MHRD, Chennai [2016 & 2017]

#### **Anna Institute of Management, Chennai**

**Environmental Assessment Techniques, Research Methodology and Scientific Methods** courses for the Newly Recruited Research Assistants, Department of Evaluation and

Applied Research, Government of Tamil Nadu at the Anna Institute of Management, Chennai [2016 and 2018]

**Multidisciplinary, Interdisciplinary, Intradisciplinary, Transdisciplinary Approaches and Environmental Assessment Techniques** courses for the Group A and Group B officers of the Department of Evaluation and Applied Research, Government of Tamil Nadu Government of Tamil Nadu at the Anna Institute of Management, Chennai [2017, 2019, 2020]

#### **Anna University, Chennai**

**Coastal Resource Management** course for the Post-graduate students of M.Tech, Institute of Ocean Management, Anna University, Chennai [2008-2010]

**Environmental Planning** course for the Post-graduate students of M.Arch, School of Architecture and Planning, Anna University, Chennai [2010 onwards]

#### **B. Institutional Responsibilities @ MSE:**

**Program Coordinating Member** for the forthcoming Regional Training Programs on “Economic of Climate Change” organized for the State Government Officials across the country coordinated and funded by Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH and Ministry of Environment, Forest & Climate Change, Government of India [March-April, 2022]

**Programme Coordinator** for the Five-Day Training program on Environmental Economics for the Senior Engineers and Scientists of the Tamil Nadu Pollution Control Board held in March 9-13, August 10-14, November 2-6, November 23-27, 2015 and January 18-22, February 15-19, 2016

Faculty in-charge for the Centre of Excellence in Environmental Economics, Madras School of Economics [2007 to 2017]

Faculty in-charge for the Environmental Information System [ENVIS], Madras School of Economics [2007- 2012].

Member of the editorial team of the newsletters **GREEN THOUGHTS** and **ENVISAGE** published in the Centre of Excellence in Environmental Economics and ENVIS Centre of Environmental Economics in Madras School of Economics, respectively.

Involved in revamping the websites of the Environmental Information System (ENVIS) and Centre of Excellence in Environmental Economics website, Madras School of Economics.

#### **C. Administrative Responsibilities @ MSE:**

**Controller of Examinations**, MA Program, Madras School of Economics [2021 onwards]

**Placement Coordinator**, MA Program, Madras School of Economics [Oct 2020-June 2021]

**Academic cum Examination Committee Head**, Madras School of Economics [Academic year 2019-20]

**Academic cum Examination Committee Head**, Madras School of Economics [Academic year 2018-19]

**Admission Committee Chair**, Post-graduate all 5 Disciplines [2018-20 batch] CUTN- MSE

**Admission Committee Chair**, Post-graduate all 5 Disciplines [2017-19 batch] CUTN- MSE

**Faculty Coordinator**, M.Sc Environmental Economics (2014-16), CUTN- MSE

**Faculty Coordinator**, M.Sc Environmental Economics (2015-17), CUTN- MSE

**Faculty Coordinator**, M.Sc General Economics (2013-15), Anna University - MSE

**Girls Hostel Warden**, Madras School of Economics July 2011- June 2013

**Faculty Coordinator**, M.Sc Actuarial Economics, Applied Quantitative Finance, Environmental Economics (IGNOU batch), Madras School of Economics 2010-12

**Faculty Coordinator**, M.Sc General Economics (Anna University batch), Madras School of Economics 2008-10

#### **D. Sponsored Research Projects:**

##### **Principal Investigator:**

"Examining the Heat Stress Impact on the South Asian Vulnerable Urban Population – A system Thinking Approach" under the sponsorship of the by International Science Council of Asia and the Pacific Region, **May 2019-November 2021** [USD 15,000]

"Assessing Barriers of Trade in Service Sector of India: A Network Analysis to Reform Service for Inclusive and Sustainable Medical Tourism" under the sponsorship of the 16<sup>th</sup> Round Regional Research Competition by the South Asia Network of Economic Research Institutes, **March 2015- December 2016** [USD 10,000]

"Economic Valuation of Ecosystem Services: A Case Study of Ousteri Wetland, Puducherry", project funded by Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH, Indo-German Biodiversity Programme Office: **September 2014 – July 2015** [INR. 20 lakhs]

"Economy-wide impacts of pollution in India – Meta-Analysis", project funded by Ministry of Environment and Forests, Government of India, **October 2010 – October 2013** [INR. 10 lakhs]

##### **Co-investigator:**

"Social Cost Benefit Analysis of Bithnok Lignite Mine Project", project funded by the Neyveli Lignite Corporation Ltd (A Government of India "Navratna" Enterprises, April -June 2013 [INR. 8 Lakhs]

"Trade and Environment: India's Exports of Textile and Textile Products and Environmental Requirements", project funded by the Ministry of Environment and Forests, Government of India: **July 2008 - June 2010** [INR. 10 Lakhs]

"Wood Balance Study for Tamil Nadu", project funded by State Forest Research Institute, Tamil Nadu: **June 2008 – June 2009** [INR. 6 Lakhs]

"Economics of Municipal Solid Waste Management in Tamil Nadu: A State Level Case Study", project funded by Central Pollution Control Board: **October 2007- March 2009** [INR. 15 Lakhs]

#### **RESEARCH OUTPUT**

##### **A. Journal Publications:**

Rakshit, S. & **Irfan, Z. B.** (2021). Hazard and Vulnerability in Urban Flood Risk Mapping: A case study of Chennai city, India. *International Journal of Science, Engineering and Management*, 8(12), 45-52

Ram, S. A, and **Irfan, Z. B.** (2021). Assessment of the Applications of Economic Instruments for Improving Water Use Efficiency in Domestic Sector. *International Journal of Science, Engineering and Management*, 8(12), 57-63

**Irfan, Z. B.** & A.S. Faisal (2021). A Cross-National Analysis of the Factors impacting the Coastal Ecological Footprint. *Water Productivity*, 1(3), 40-52

Ram, S. A, and **Irfan, Z. B.** (2021). Application of system thinking causal loop modelling in understanding water crisis in India: A case for sustainable integrated water resources management across sectors. *HydroResearch*, 4, pp.1-10

Prabha, A. S., Ram, A., & **Irfan, Z. B.** (2020). Exploring the relative water scarcity across the Indian million-plus urban agglomerations: An application of the Water Poverty Index. *HydroResearch*, 3, 134-145.

**Irfan, Z. B.**, Ling, V., & Shan, J. (2020). Ecological health assessment of the Ousteri wetland in India through synthesizing remote sensing and inventory data. *Lakes & Reservoirs: Research & Management*, 25(1), 84-92.

Rakshit, S. & **Irfan, Z. B.** (2019). Assessment of Flood Risk due to Urbanization in South and Southeast Asian Countries: A Panel Data Approach. *Disaster Advances*, 12(11), 34-41.

Kumar, A., & **Irfan, Z.** (2019). Are the New Indian States Ecologically Secured, Economically Efficient and Socially Equitable? (Assessment Using the Sustainable Livelihood Security Index Framework). *Asian Journal of Language, Literature and Culture Studies*, 2(3), 1-9.

Ram, S.A. and **Irfan, Z.B.**, (2019). A State Level Analysis of the Social Infrastructure: Public Private Partnership in Education and Health. *Asian Journal of Education and Social Studies*, 3(2), pp.1-28.

Patel, U., Rakshit, S., Ram, S. A. and **Irfan, Z. B.** (2019). Urban Sustainability Index: Measuring Performance of 15 Metropolitan Cities of India. *South Asian Journal of Social Studies and Economics*, 3(4), pp.1-11.

Priya, P. and **Irfan, Z. B.** (2019). Circular Economy: Inclusion Framework of Aluminium Scrap in the Indian Material Flow Process. *Journal of Materials Science Research and Reviews*, 3(3), pp.1-7.

Jain, D., Rakshit, S., Ram, S.A. and **Irfan, Z. B.** (2018). The Characteristics of Residential Energy Consumption Modelling – Empirical Evidence of Indian Scenario. *Journal of Renewable Energy and Resources*, 3(3), pp.1-26

Ram, S.A. and **Irfan, Z. B.** (2018). Application of Economic Instruments for Control of Water Pollution – A Case Study of Industrial Water Pollution. *Journal of Water Resource Engineering and Pollution Studies*, 3(3), pp.24-36

Rakshit, S. and **Irfan, Z. B.** (2018). Surface Mining and Sustainable Livelihood: Examining the Status of Mining Sites in Dhanbad. *Journal of Remote Sensing, Environmental Science & Geotechnical Engineering*, 3(3), pp.1-25

Kumar, A. and **Irfan, Z.B.** (2018). Assessment of the Sustainable Livelihood Security of the Ecologically Vulnerable Indian State–Uttarakhand. *Asian Journal of Geological Research*, 1(3), pp.1-8.

**Irfan, Z.B.**, Jo, A.A. and Mondal, M. (2016). Ecosystem Hotspot Identification and Examination of the Land Use Change in Agricultural Ecosystem Using Geological Information: Evidence from India, *American Journal of Engineering Research*, 5(7), pp. 176-184.

**Irfan, Z.B.** and Mondal, M. (2016). Environmental Assessment on the Operative Mode of Tanneries and Brickfields In India Using Water Footprint Tool, *American Journal of Engineering Research*, 5(7), pp.169-175.

**Irfan, Z.B.**, Sharan, A. and Mondal, M. (2016). Circulation Economics: Dynamic Material Flow Analysis Of Metal Trade In India, *American Journal of Engineering Research*, 5(7), pp.185-192.

**Irfan, Z.B.**, Jo, A.A. and Mondal, M. (2016). Status Check of the Mining Hub of India: Examining the Land-Use Pattern Observed in the Forest–Agricultural Ecosystem of Dhanbad. *American Journal of Engineering Research*, 5(7), pp.193-201.

**Irfan, Z.B.**, Jo, A.A. and Mondal, M. (2016). Urbanisation as a land use change driver of forest ecosystem: Land use pattern change analyzed for Indore city. *American Journal of Engineering Research*, 5(7), pp.202-209.

**Irfan, Z.B.** and Mondal, M. (2016). Water Footprint Analysis in Dairy Industry in India. *International Journal of Environmental Science and Development*, 7(8), pp.591-594

**Irfan, Z.B.** and Nehra, A. (2016). Analysing the aid effectiveness on the living standard: A check-up on Southeast Asian countries. *Journal of Urban Management*, 5(1), pp.23-31.

**Irfan, Z.B.** Khan, M.T. and Radhakrishnan, K. (2015). Determinants of Fuel Choice

among Indian Households: An Empirical Investigation. *Pollution Research*, 34 (2), pp. 297-305

Gupta, B., Malik, P. and **Irfan, Z.B.** (2013). Recovery of uranium, thorium and zirconium from allanite by extraction chromatography using impregnated chromosorb. *Water Resources and Industry*, 4, pp. 21-31

**Irfan, Z.B.** (2012). Arsenic Contamination in Water: A Conceptual Framework of Policy Options with particular reference to Bengal Delta Basin. *International Journal of Hydrology Science and Technology*, 2(4), pp. 391-401

Gupta, B. and **Irfan, Z.B.** (2012). Equilibrium and Kinetic Studies for the Adsorption of Arsenic from aqueous medium using Cyanex 301-Impregnated Natural and Synthetic Fibrous Supports. *Interdisciplinary Environmental Review*, 13 (2/3), pp. 202-219

**Irfan, Z.B.**, Gupta, B. and Tandon, S. N. (2012). Removal of Arsenic from Anthropogenic Aqueous Media: An Analytical Review with particular reference to Solvent Extraction Technique. *Interdisciplinary Environmental Review*, 13 (2/3), pp. 127-138

**Irfan, Z.B.** and Uvaneswari, P. (2012). Determination of the Cost-Effective Adsorbents to Remove Toxic Metal Pollutants from Industrial Waste Water. *International Journal of Social Science and Interdisciplinary Research*, 1(4), pp: 19-25

**Irfan, Z.B.** and Sankar, V. (2012). Assessment of Health Impacts on Residents Living on the Banks of the Buckingham Canal, Chennai. *International Journal of Social Sciences and Interdisciplinary Research*, 1(3), pp: 16-27

**Irfan, Z.B.** and Mirpuri, D. (2012). Valuing the Environmental Status of an Architectural Heritage: A Case Study of Kapaleeshwar Temple, India. *International Journal of Social Sciences and Interdisciplinary Research*, 1(3), pp: 37-45

**Irfan, Z.B.** (2010). Environmental Pollution and Public Health: The Socio-Economic Analysis of the Global Drivers of Change. *IEEE Xplore*, pp: 19-24

**Irfan, Z.B.** (2011). Safer building practices to deal with earthquakes: Challenges and Lessons learned from the South Asian countries. *Indian Journal of Science and Technology*, Vol. 4, Issue 3, pp. 219-225.

**Irfan, Z.B.** (2011). Status and causes for the change in the concentration of natural marine wealth – Coral Reefs. *Indian Journal of Science and Technology*, Vol. 4, Issue 3, pp. 351-358.

Gupta, B. and **Irfan, Z.B.** (2008). Separation and Removal of Arsenic from Metallurgical Solutions using Bis(2,4,4-trimethylpentyl)dithiophosphinic acid as Extractant. *Separation & Purification Technology*, 63(1), pp. 77-85.

Gupta, B. **Irfan, Z.B.** and Rajput, G. (2008) Equilibrium and Kinetic Studies for the Adsorption of Mn(II) and Co(II) from aqueous media using Agar-Agar as Sorbent, *Chemical Engineering Communications*, 195 (10), pp. 1200-1212

Gupta, B. Mudhar, N., **Irfan, Z.B.** and Singh, I (2007). Extraction and Recovery of Ga(III) from Waste Material using Cyanex 923. *Hydrometallurgy* 87(1-2), pp. 18-26.

Gupta, B. and **Ismayil, Z.B.** (2006). Stabilization of Solvent-Impregnated Resins (SIRs) by coating with Water-soluble Polymer and Chemical Cross-linking and its Application in Mercury Removal. *Journal of Composite Interfaces*, 13(4-6), pp. 487-506.

## **B. Book Chapters:**

**Irfan, Z. B.** & Rakshit, S. (2020). Hazard and Vulnerability in Urban Flood Risk Mapping: A case study of Chennai city, India. In: *Megacities - Intelligence, Sustainable and Resilience Built Environment, Intech Open* (ISBN 978-1-78985-150-2)

**Irfan, Z. B.** (2020). Cause and Consequences of Kerala Floods and Its Impact on Biodiversity. In: *Natural Hazards - Impacts, Adjustments & Resilience, Intech Open*, ISBN 978-1-83962-306-6.

**Irfan, Z. B.** and Kumar, K.K., (2018). “Global Environmental Requirements—Textile Industry”, Chapter 4 in A Study of India’s Textile Exports and Environmental Regulations, Kumar, KS Kavi, ed. Springer, Singapore. (pp. 61-72).

**Irfan, Z. B.** and Das, S., (2018). “Global and Indian Supply Chain of Textiles“, Chapter 2 in A Study of India’s Textile Exports and Environmental Regulations, Kumar, KS Kavi, ed. Springer, Singapore. (pp. 15-44)

Kumar, K.K., **Irfan, Z. B.** and Das, S., 2018. “Non-tariff Barriers in Textiles: Incidence and Perceptions”, Chapter 5 A Study of India’s Textile Exports and Environmental Regulations, Kumar, KS Kavi, ed. Springer, Singapore. (pp. 73-92)

**Irfan, Z. B.** (2015): ‘Sustainable Water Reuse and Outlooks’, in Urban Water Reuse Handbook Edited by Eslamian, S, Francis and Taylor, CRC Group Volume 2, Chapter 85

**Irfan, Z. B.** (2015): ‘Urban Water Reuse Risk’, in Urban Water Reuse Handbook (UWRH) edited by Eslamian, S, Francis and Taylor, CRC Group Volume 1, Chapter 40

**Irfan, Z. B.** (2015): ‘Improving Tiger Conservation in India’ Chapter 11 in ‘Environment and Development - Essays in Honour of Dr. U. Sankar’ Edited by Shanmugam, K.R. and K.S. Kavi Kumar, Sage Publications

### **C. MSE Working Papers:**

Ram, S. A. & **Irfan, Z. B.** (2020): Understanding the Water Crisis in India: Application of Causal Loop Modelling to Examine the Environment-Economy Interlinkage across Sectors, MSE Working Paper No: 201, Madras School of Economics, Chennai

Srikanth, C. & **Irfan, Z. B.** (2020): The Role of Feminist Political Ecology (FPE) Framework in Studying How Gender and Natural Resources are Interlinked: The Case of Women in the Aftermath of Bangladesh’s Arsenic Contamination, MSE Working Paper No: 189, Madras School of Economics, Chennai

Ghosh, A. & **Irfan, Z. B.** (2020): Are Human Rights and Economic Well-Being Substitutes? The Evidence from the Migration Patterns in Bangladesh and Myanmar, MSE Working Paper No: 188, Madras School of Economics, Chennai

Baswapoor, S. and **Irfan, Z. B.** (2018), Current Status of Coral Reefs in India: Importance, Rising Threats and Policies for its Conservation and Management, MSE Working Paper No: 175, Madras School of Economics, Chennai

Ashokkumar, S. and **Irfan, Z. B.** (2018): Current Status of Mangroves in India: Benefits, Rising Threats Policy and Suggestions for the Way Forward, MSE Working Paper No: 174, Madras School of Economics, Chennai

**Irfan, Z. B.**, Jain, D., Rakshit, S. and Ram, S. A. (2017): Catalyst Role of Indian Railways in Empowering Economy: Freight or Passenger Segment is on the Fast Track of Expansion or Exploitation? MSE Working Paper No: 170, Madras School of Economics, Chennai

**Irfan, Z. B.**, Gupta, S., Rakshit, S. and Ram, S. A. (2017): Modelling the Characteristics of Residential Energy Consumption: Empirical Evidence of Indian Scenario, MSE Working Paper No: 169, Madras School of Economics, Chennai

**Irfan, Z.B.**, Jayakumar, S. and Rakshit, S. (2017): Land Use Change of the Ousteri Wetland using the Land Use Dynamic Degree Model, MSE Working Paper No: 156, Madras School of Economics, Chennai

**Irfan, Z.B.**, Jayakumar, S. and Rakshit, S. (2017): Evaluation Index System (EIS) for the Ecological-Economic- Social Performances of Ousteri Wetland across Puducherry and Tamil Nadu, MSE Working Paper No: 155, Madras School of Economics, Chennai

**Irfan, Z. B.** and Jacob, J.M. (2016): Game Theoretical Approach to regulate the Public-owned River water utilities: A Case study of Cauvery River, MSE Working Paper No. 142, Madras School of Economics, Chennai

Mondal, M., **Irfan, Z. B.** and Ramaswamy, S. (2016): Does Carbon Tax makes Sense?

Assessing Global Scenario and Addressing Indian Perspective, MSE Working Paper No. 141, Madras School of Economics, Chennai

Sreedhar, L. and **Irfan, Z. B.** (2016): Economic Incentives for the Conservation of Bharathapuzha River: Focus on Sand Mining, MSE Working Paper No. 140, Madras School of Economics, Chennai

**Irfan, Z. B.**, Nehra, A. and Mondal, M. (2015): Analyzing the Aid Effectiveness on the Living Standard: A Check-Up on South East Asian Countries, MSE Working Paper No. 128, Madras School of Economics, Chennai

**Irfan, Z. B.**, Nehra, A. and Mondal, M. (2015): The Culmination of the MDG's: A New Arena of the Sustainable Development Goals, MSE Working Paper No. 127, Madras School of Economics, Chennai

**Irfan, Z. B.** and Mondal, M. (2015): Analyzing the Water Footprint of Indian Dairy Industry, MSE Working Paper No. 123, Madras School of Economics, Chennai

**Irfan, Z. B.** and Gupta, B. (2015): To Consume or to Conserve: Examining Water Conservation Model for Wheat Cultivation in India, MSE Working Paper No. 101, Madras School of Economics, Chennai

**Irfan, Z. B.** and Gill, A. M. (2014): Analyzing the Pathway to improve Tiger Conservation in India, MSE Working Paper No. 90, Madras School of Economics, Chennai

**Irfan, Z. B.** (2012): Arsenic Contamination in Water: A Conceptual Framework of Policy Options, MSE Working Paper No. 64, Madras School of Economics, Chennai

#### **D. Technical Reports:**

Rakshit, S. and **Irfan, Z. B.** (2017), 'Economics of E-waste', *Bibliographical Survey Series No. 9*, Centre of Excellence in Environmental Economics, Madras School of Economics

Rakshit, S. and **Irfan, Z. B.** (2017), 'Green Finance', *Bibliographical Survey Series No. 8*, Centre of Excellence in Environmental Economics, Madras School of Economics

**Irfan, Z. B.** (2017), 'Economics of Water Pollution', *Bibliographical Survey Series No. 5*, Centre of Excellence in Environmental Economics, Madras School of Economics

**Irfan, Z. B.** (2017), 'Trade and Environment', *Bibliographical Survey Series No. 2*, Centre of Excellence in Environmental Economics, Madras School of Economics

**Irfan, Z. B.** (2017), 'Economics of Forest Management', *Bibliographical Survey Series No. 1*, Centre of Excellence in Environmental Economics, Madras School of Economics

**Irfan, Z. B.** (2017), 'Economics of Biotechnology', *Dissemination Paper No. 35*, Centre of Excellence in Environmental Economics, Madras School of Economics

**Irfan, Z. B.** (2017), 'Greenhouse Gas Accounting', *Dissemination Paper No. 34*, Centre of Excellence in Environmental Economics, Madras School of Economics

**Irfan, Z. B.** (2017), 'Economics of Sustainable Cities', *Dissemination Paper No. 33*, Centre of Excellence in Environmental Economics, Madras School of Economics

**Irfan, Z. B.** (2014), 'Urbanization and Environment', *Dissemination Paper No. 31*, Centre of Excellence in Environmental Economics, Madras School of Economics

**Irfan, Z. B.** (2012), 'Solid Waste Management', *Dissemination Paper No. 19*, Centre of Excellence in Environmental Economics, Madras School of Economics

**Irfan, Z. B.** (2011), 'Arsenic Contamination in Water: Mitigation and Policy Options', *Green Thoughts: CoE Newsletter*, 3(1) pp: 5-10

**Irfan, Z. B.** (2010), 'Plastics and Environment', *Dissemination Paper No. 12*, Centre of Excellence in Environmental Economics, Madras School of Economics

**Irfan, Z. B.** (2010), 'Bhopal Gas Tragedy: The Disaster Exported to India', in *ENVISAGE – Newsletter*, Vol 7, No. 2, pp: 2-8

**Irfan, Z. B.** (2010), 'Liability and Environmental Damage: The Indian Experience', in *ENVISAGE – Newsletter*, Vol 7, No. 2, pp: 9-10

- Irfan, Z. B. (2009), ‘Sustainable Building Rating System’, in *ENVISAGE – Newsletter*, Vol 6, No. 2, pp: 9-14
- Irfan, Z. B. (2009), ‘Plastic Fantastic’, in *ENVISAGE – Newsletter*, Vol 6, No. 1, pp: 2-8
- Irfan, Z. B. (2009), ‘Paper or Plastic’, in *ENVISAGE – Newsletter*, Vol 6, No. 1, pp: 9
- Irfan, Z. B. (2009), ‘Environmental Health’, *Dissemination Paper No. 7*, Centre of Excellence in Environmental Economics, Madras School of Economics
- Irfan, Z. B. (2008), ‘Proper sanitation offers health and wealth’, in *ENVISAGE Newsletter*, Vol.5, No. 1, pp: 2-3
- Irfan, Z. B. (2008), ‘Water Supply and Sanitation in Tamil Nadu’, in *ENVISAGE Newsletter*, Vol.5, No. 1, pp: 13-15
- Irfan, Z. B. (2007), ‘Namakkal: Dustbin Free City’, in *ENVISAGE – Newsletter*, Vol.4, No. 3, pp:78

### **E. Conference Presentations:**

“Determinants of Household Water Saving Technology Adoption: Understanding Household Perceptions and Environmental Attitude for Demand Side Management Policies” at the *Eleventh Indian Society for Ecological Economics Biennial Conference* organized by Indian Institute of Information Technology, Delhi (IIITD), December 15-17, 2021 (*virtual mode*)

“Investigating the Effect of Renewable Energy Adoption: An Environmental Economic Perspective” at the *19<sup>th</sup> World Wind Energy Conference on "Powering the World with Wind and Sun"* held at The Energy Research Institute, New Delhi, 24-26 November 2021 (*virtual mode*)

“Adaptive Analysis of 3E Factors (Economy, Energy, and Environment) for Renewable Energy Generation in the South and Southeast Asian Region’ at the *14<sup>th</sup> Doctoral Thesis Conference*, IBS Hyderabad, May 6-7, 2021 (*virtual mode*)

“Application of System Thinking Causal Loop Modelling: A Case for Sustainable Integrated Water Resources Management across Developing Countries” presented at the *Water Security and Climate Change Conference* organized by Vietnam Academy for Water Resources, Hanoi, March 2021 (*virtual mode*)

‘Factor Influencing Adoption of Smart Water Metering and Domestic Water Consumption’ presented at the *Water Security and Climate Change Conference*, organized by Vietnam Academy for Water Resources, Hanoi, March 2021 (*virtual mode*)

“Hazard and Vulnerability in Urban Flood Risk Mapping: A case study of Chennai city, India”, presented at the *Eighth Faculty Seminar Retreat*, Madras School of Economics, December 4-5, 2020

“Determinants of renewable energy adaptation in the SSEA (South and Southeast Asian) region”, presented at the *Eighth Faculty Seminar Retreat*, Madras School of Economics, December 4-5, 2020

“Application of System Thinking Causal Loop Modelling in Understanding Water Crisis in India: A Case for Sustainable Integrated Water Resources Management across Sectors”, presented at the *Eighth Faculty Seminar Retreat*, Madras School of Economics, December 4-5, 2020

“Exploring the Relative Water Scarcity across the Indian Million-plus Urban Agglomerations: An Application of the Water Poverty Index”, presented at the *Eighth Faculty Seminar Retreat*, Madras School of Economics, December 4-5, 2020

“Urban Flood Risk Mapping: A case study of Chennai city, India”, presented at the *International Conference on Water Resources (ICWR)*, Central University of Karnataka, October 2020

“Application of System Thinking Causal Loop Modelling in Understanding Water Crisis in India: A Case for Sustainable Integrated Water Resources Management across Sectors”, presented at the *International Conference on Water Resources* organized by Department of Geography, Central University of Karnataka, October 2020 (*virtual mode*)

“Determinants of renewable energy adaptation in the SSEA (South and Southeast Asian)

region: An Environmental Economic Perspective”, presented at the *Second International Conference on Sustainable Urban Development, Resource conservation, and Food Security* organized by BIT, Mangalore, August 06-12, 2020. [Received best paper award] (*virtual mode*)

“Hazard and Vulnerability in Urban Flood Risk Mapping: A case study of Chennai city, India”, presented at *Second International Carbon Neutral Conference SURF 2020 (Sustainable Urban Development, Resource Conservation and Food Security)*, BIT Mangalore, August 6-12, 2020 (*virtual mode*)

“Assessment of applications of economic instruments for improving water use efficiency in domestic sector”, presented at the *International Conference on Sustainable Urban Development, Resource Conservation and Food Security* organized by BIT, Mangalore, August 6-12, 2020 (*virtual mode*)

“India’s preparedness to address urban flood through institutional mechanism in comparison to Asian countries” presented at the *International Conference on Climate Change and Disasters: Challenges, Opportunities and Responses, Tenth Biennial Conference of the Indian Society for Ecological Economics (INSEE)*, Centre for Economic and Social Studies Hyderabad, November 6-8, 2019

“Application of System Dynamics Principle in Understanding Water Management Challenges across Sectors”, was presented at the *Water Future Conference: Towards a Sustainable Management of Water Resources* organized by Future Earth, Sustainable Water Future Programme, hosted by the Divecha Centre for Climate Change, Indian Institute of Science, Bangalore, September 24-27, 2019

“A Sectoral Review of the Effectiveness of Economic Instruments to improve water use efficiency”, was presented at the *Water Future Conference: Towards a Sustainable Management of Water Resources* organized by Future Earth, Sustainable Water Future Programme, hosted by the Divecha Centre for Climate Change, Indian Institute of Science, Bangalore, September 24-27, 2019

‘Application of System Thinking Causal Loop Modelling: A Case for Sustainable Integrated Water Resources Management across Developing Countries’ was presented at the ‘*Water Security and Climate Change Conference*’ organized and hosted by Universidad Autonoma de San Luis Potasi, Mexico, October 28-30, 2019

"Examining the Impacts and Effectiveness of Economic Instruments as a Water Scarcity Mitigation Tool" Presented at *National Symposium on Contemporary Issues in Environmental Economics* held at Department of Economics, Loyola College, February 14, 2019.

"The Household response to persistent natural disasters: Evidence from Resilience developing city Chennai" Presented at *National Symposium on Contemporary Issues in Environmental Economics* held at Department of Economics, Loyola College, February 14, 2019.

"Assessing the Alternative Demand Side Regulatory Measures for Improving Water Use Efficiency in Urban Residential Sector" presented at *International Conference on Sustainable Management of Water Resources in India* held at Department of Economics, Annamalai University, February 22 and 23, 2019.

‘Examining the heat stress impact on the south Asian vulnerable urban population – a system thinking approach’, presented at the *Seventh Faculty Seminar Retreat*, Madras School of Economics, February 1, 2019.

“Economic Valuation of Land Use Land Cover (LULC) impact on Ecosystem Capital: Assessing the urban dynamics of Chennai city” presented in the *4<sup>th</sup> International Research Symposium Investing in Biodiversity and Ecosystem Services (ISIBES -2018)* organised by Rajarata University of Sri Lanka, October 17-18, 2018.

“Techno-Economic Assessment of the Forthcoming Sustainable Bio-economy: The need to clear the clouds of conflict, consensus and confusion”, presented in the *MSE Silver Jubilee conference on Technology and Development* organized by Madras School of Economics in partnership with Forum for Global Knowledge Sharing, Madras School of Economics, August 11, 2018

"Techno-Economic Fix: Evaluating the Ecological, Economic and Social Characteristics of Ousteri Wetland Ecosystem" presented in the *3<sup>rd</sup> UNDP Global Biodiversity Finance Initiative Conference* organized by UNDP and its Ecosystems and Biodiversity Programme,

European Union and the Governments of Germany, Norway Switzerland and Flanders held at Welcom ITC Hotels, Mamallapuram, Chennai, India, March 6-8, 2018.

"Evaluating the Social-Economic-Ecological System for Sustainable Development: An Interpretive Analysis of Chennai Region" presented in the *International Conference on the Development and Challenges in Post Independent India* organized by the DRBCCC Hindu College, Pattabiram, Chennai, March 3 and 4, 2017.

"Evaluation Index System (EIS) for the Ecological Economic Social Performances of Ousteri Wetland across Puducherry and Tamil Nadu" presented in the *fourth Indian Biodiversity Congress* organized by Centre for Innovation in Science and Social Action (CISSA), Pondicherry University, March 10-12, 2017.

"Examining the Land Use Change of the Ousteri Wetland using the Land Use Dynamic Degree Model" presented in the *fourth Indian Biodiversity Congress* organized by Centre for Innovation in Science and Social Action (CISSA), Pondicherry University, March 10-12, 2017.

"The Characteristics of Residential Energy Consumption Modeling –empirical Examination of Indian Scenario" presented in the *fourth Indian Biodiversity Congress* organized by Centre for Innovation in Science and Social Action (CISSA), Pondicherry University, March 10-12, 2017.

"Is India Really Sustaining or Degrading to a Furnace Island? Analyzing the Energy Consumption Pattern of Indian Households" presented in the *Third International Conference on Environment and Ecology* organized by the International Foundation for Environment and Ecology in collaboration with the Confederation of Indian Universities at the St. Xavier's College, Ranchi, Jharkhand, March 27-29, 2017.

"Sustainable Performance Index of Ousteri Wetland: Evaluating the Ecological, Economic and Social Characteristics" presented in the *Third International Conference on Environment and Ecology* organized by the International Foundation for Environment and Ecology in collaboration with the Confederation of Indian Universities at the St. Xavier's College, Ranchi, Jharkhand, March 27-29, 2017.

"Land Use Change of the Ousteri Wetland: Ecological Economic Evidence Using Geological Data" presented in the *Third International Conference on Environment and Ecology* organized by the International Foundation for Environment and Ecology in collaboration with the Confederation of Indian Universities at the St. Xavier's College, Ranchi, Jharkhand, March 27-29, 2017.

"Ecological Status of Ousteri Wetland: A Complete Checkup of Biodiversity Concentration" presented in the *Third International Conference on Environment and Ecology* organized by the International Foundation for Environment and Ecology in collaboration with the Confederation of Indian Universities at the St. Xavier's College, Ranchi, Jharkhand, March 27-29, 2017.

"Hydrological and Geological Status of Ousteri wetland: To consume or to Conserve" presented in the *Third International Conference on Environment and Ecology* organized by the International Foundation for Environment and Ecology in collaboration with the Confederation of Indian Universities at the St. Xavier's College, Ranchi, Jharkhand, March 27-29, 2017.

"Economic Valuation of Ecosystem Services for Sustainable Environmental Management: A Case Study of Wetland Ecosystem Valuation" presented in the *Two-day conference on Papers in Public Economics and Policy* organized by the National Institute of Public Finance and Policy, New Delhi, March 23-24, 2017.

"Economic Valuation of Ecosystem Services for Sustainable Environmental Management: A Case study of Wetland Ecosystem" presented in the *Sixth MSE Faculty Seminar Series*, January 17-18, 2018

"Degrading or Sustaining: Assessing Whether the Indian Firms Do Follow Sustainable Reporting Framework." presented at the *Seventh Congress of the East Asian Association of Environmental*

and Resource Economics (EAAERE) held at Nanyang Technological University, Singapore, September 5-7, 2017

“Sustainable Performance Index of Ousteri Wetland: Evaluating The Ecological, Economic and Social Characteristics.” presented at the *Seventh Congress of the East Asian Association of Environmental and Resource Economics (EAAERE)* held at Nanyang Technological University, Singapore, September 5-7, 2017

“Impact of Wetland Conservation on the Livelihoods: A Case Study – Oussudu Wetland in Puducherry region” presented in the *2016 World Water Week: Water for Sustainable Growth, Stockholm International Water Institute, Sweden, August 28-September 2, 2017*

“Economic Valuation of Ecosystem Services for Sustainable Environmental Management: A Case Study of Wetland Ecosystem Valuation” presented in the *Two-day conference on Papers in Public Economics and Policy* organized by the National Institute of Public Finance and Policy, New Delhi, November 23-24, 2017.

‘Water Footprint Analysis in Dairy Industry in India’ was presented in the *3<sup>rd</sup> International Conference on Sustainable Environment and Agriculture (ICSEA 2015)* organized at Columbia University, New York, October 11-12, 2015

“Incentive Mechanism: Implementation and Policy Level Comparison of Canal Irrigation in the Dragon and the Snake Land”, paper presented at the *Fifth MSE Faculty Seminar Series*, March 21, 2015

“Incentive Mechanism: Implementation and Policy Level Comparison of Canal Irrigation in the India and China” at the *International Seminar on the Climate Change and Food Security – the Global and Indian Contexts* organized jointly by the Centre for Ecological Economics and Natural Resources, Institute for Social and Economic Change, India and the Faculty of Science, University of Sydney, Australia at the Institute of Social and Economic Change, Bangalore, February 18, 2015

“Green Accounting of the Indian Metal Mining Sector” at the two - day International Seminar on *Natural Resource and National Accounts in South Asia* organized at the Institute of Social and Economic Change, Bangalore, February 5, 2015

“Techno-Economic Assessment of Electronic Waste: Material Flow Analysis and Management Scenario” at a technical session focussing on Agro Biodiversity and Waste Management, at the *International Conference on “Agro Biodiversity and 20 Years of WTO”* organized by the Department of Environmental Law and Legal Order, The Tamil Nadu Dr. Ambedkar Law University, Chennai, January 29, 2015.

“Poisoning the future: Arsenic contamination of drinking water wells and children’s educational achievement in rural West Bengal’ at a technical session focussing on Agro Biodiversity and Life Sciences, at the *International Conference on “Agro Biodiversity and 20 Years of WTO”* organized by the Department of Environmental Law and Legal Order, The Tamil Nadu Dr. Ambedkar Law University, Chennai, January 28, 2015.

“Agricultural productivity Growth and Public Infrastructure: An Evaluation of past three decades of India” at a technical session focussing on Agro Biodiversity and Life Sciences, at the *International Conference on “Agro Biodiversity and 20 Years of WTO”* organized by the Department of Environmental Law and Legal Order, The Tamil Nadu Dr. Ambedkar Law University, Chennai, January 28, 2015.

“Impact of fertilizer consumption: An Indian Scenario” at a technical session focussing on Agro Biodiversity and Life Sciences, at the *International Conference on “Agro Biodiversity and 20 Years of WTO”* organized by the Department of Environmental Law and Legal Order, The Tamil Nadu Dr. Ambedkar Law University, Chennai, January 28, 2015.

“Implementation and Policy level suggestions for Irrigation in India” at a technical session focussing on Agro Biodiversity and Life Sciences, at the *International Conference on “Agro Biodiversity and 20 Years of WTO”* organized by the Department of Environmental Law and Legal Order, The Tamil Nadu Dr. Ambedkar Law University, Chennai, January 28, 2015.

“Public and Private Medical Infrastructure Provision Across India: An Econometric

Analysis” at the *National Symposium on Health-The Next Right* organized by the Loyola Economics Association for Development (LEAD), Chennai, on January 23, 2015

“Arsenic contamination of drinking water wells and children’s educational achievement of Muslims in rural West Bengal” at a session focusing on the health status of Muslims in India at the ICSSR Sponsored *National Conference on Socio-Economic and Political Status of Muslims in India: Challenges and Development* organized at the School of Social Sciences and Humanities, B.S. Abdur Rahman University, Chennai on January 22, 2015.

“Implementation and policy level comparison of canal irrigation at the Dragon and Snake Land”, *Workshop on “Comparing Water Governance in China & India: Challenges & Policy Options”* October 24-25, 2014, Institute of Water Policy, Lee Kuan Yew School of Public Policy, Singapore.

“Indian Delta’s Anguish: Game theoretical approach to the Conflict across Kaveri River Water Sharing” paper presented at the *International Conference on Water, Climate and Renewable Energy (ICWCRE’14)* on May 29, 2014 at Eastland Hotel, London

“Financial Development and CO<sub>2</sub> Emissions in India: A Time Series Analysis” paper presented at the *International Conference on Water, Climate and Renewable Energy (ICWCRE’14)* on May 29, 2014 at Eastland Hotel, London

‘Green Accounting of the Indian Metal Mining Sector’ presented at the *Fourth MSE Faculty Seminar Series* held at Central University of Tamil Nadu, Thiruvavur, February 2014

‘Health Impacts of Air and Water Pollution in India: A Systematic Review’, presented at the *Fourth MSE Faculty Seminar Series* held at Central University of Tamil Nadu, Thiruvavur, February 2014

‘Analyzing the Pathways to Improve Tiger Conservation in India’ paper presented at the *Third MSE Faculty Seminar Series* held at Madras School of Economics, January 2013

‘Poisoning the future: Examining the Adverse Effect of Arsenic on Children’s Educational Achievement with an insight on the Quantitative Removal Techniques of Arsenic’ paper presented at *The Science and Economics of the Environment Issues: the Twain Shall Meet* seminar at Madras School of Economics organized in collaboration with Lancaster University Management School, November 19-20, 2012.

‘Poisoning the Future: Arsenic Contamination of Drinking Water Wells and Children’s Educational Achievement in Rural West Bengal’, paper presented in the *Second MSE Faculty Seminar Retreat*, 24-25 March, 2012.

‘Arsenic Contamination in Water: A Conceptual Framework of Policy Options with particular reference to Bengal Delta Basin’, was delivered in the *First MSE Faculty Seminar Retreat*, 20-21 August, 2011.

“Environmental Pollution and Public Health: The Socio-Economic Analysis of the Global Drivers of Change” *International Conference on “Recent Advances in Space Technology services and Climate Change-2010* held from November 13-15, 2010 in Sathyabama University organized by Sathyabama University in association with Indian Space Research Organisation (ISRO), Department of Space, Government of India, Bangalore & IEEE.

“Status and causes for the change in the concentration of natural marine wealth – Coral Reefs” *International Conference on Global Environment and its Sustainability: Implications and Strategies* held on November 7, 2010 in Vivekananda College, Chennai organized by Indian Society for Education and Environment in association with Vivekananda College, Chennai & Presidency College, Chennai

“Safer building practices to deal with earthquakes: Challenges and Lessons learned from the South Asian countries” *International Conference on Global Environment and its Sustainability: Implications and Strategies* held on November 7, 2010 in Vivekananda College, Chennai organized by Indian Society for Education and Environment in association with Vivekananda College, Chennai & Presidency College, Chennai

‘A Report on the arsenic pollution caused at the industrial sites of Tamil Nadu, India’ 7<sup>th</sup> *International Science Conference on the Human Dimensions of Global Environmental Change*, “Social Challenges

of Global Change" (IHDP Open Meeting 2009), 26-30 April, 2009, Bonn, Germany

'Removal of As(III) from Aqueous Water Stream using Cyanex 301-Impregnated Natural and Synthetic fibers', *International Groundwater Conference, IGC-2007*, Feb 2007, Coimbatore, Tamil Nadu, India

'Removal of As(III) from the Aqueous Stream using Cyanex 301 Impregnated Silica Gel by Batch and Column Operation Mode', *National Conference on Eco-, Sono-, and Nanochemistry*, Dec 2006, Chennai, Tamil Nadu, India

'Removal of As(III) from the natural water media using flat-sheet supported liquid membrane containing Cyanex 301 as carrier', *National Conference on Eco-, Sono-, and Nanochemistry*, Dec 2006, Chennai, Tamil Nadu, India

'Removal & Recovery of As(III) from the Aqueous Stream using Extractant Impregnated Natural and Man-Made Fibers', *First International Collaborative Conference with AATCC & INDA (AFINT 2006)*, Aug 2006, Coimbatore, Tamil Nadu, India

'Removal and Recovery of As(III) from Natural Water using Impregnated Supports', *International Conference on Environmental Geosciences (ICEG 2006)*, Feb 2006, Anna University, Chennai, Tamil Nadu, India

'Removal and Recovery of Co(II) and Mn(II) from Industrial Effluent using Agar-Agar as Sorbent', *International Interdisciplinary Conference on Sustainable Technologies and Environmental Protection (ICSTEP 2006)*, Jan 2006, Coimbatore, Tamil Nadu, India

'Extraction Chromatographic Separation of Lanthanides, Uranium, Thorium and Zirconium using Cyanex 923 impregnated on Chromosorb 102-Their Recovery from Allanite', *PREP-2005: 18th International Symposium, Exhibit & Workshops on Preparative/Process Chromatography, Ion Exchange, Adsorption/Desorption Processes & Related Separation Techniques*, May 2005, Philadelphia, Pennsylvania, USA

'Liquid-Liquid Extraction Studies on Arsenic using Organophosphorus Extractant', *National Seminar on Modern Trends in Nanotechnology and Supramolecular Assemblies*, Apr 2005, Ahmedabad, Gujarat, India

'Stabilization of Solvent Impregnated Resins (SIRs) by coating with Water-soluble Polymer and Chemical Cross-linking and its Application in Mercury Removal', *International Conference on Advances in Polymer Blends, Composites, IPNS and Gels: Macro to Nano scales (ICBC 2005)*, Mar 2005, Kottayam, Kerala, India

'Extraction and Recovery of Zirconium using Cyanex 923', *DAE-BRNS Theme Meeting on Emerging Trends in Separation Science and Technology (SESTEC 2004)*, July 2004, Bhabha Atomic Research Centre (BARC), Bombay, Maharashtra, India

## **F. Invited Talks / Special Lectures:**

"Financial Analysis of Public Projects – Principles" regular lecture delivered in the *Training Course on Public Finance organised for the Tamil Nadu Government Group B officers* held at the Centre for Public Finance, Madras School of Economics [Oct 2021 onwards for 10 different batches]

"Basics of Environmental Economics" for the *Training Programme on "Environmental Law and Regulation"* on February 26, 2020 at the Anna Institute of Management, organized for the Tamil Nadu government officials by the Government of Tamil Nadu

"Anthropocene and Habitat Loss: Cost Benefit Analysis of Destruction, Fragmentation and Degradation" on January 13, 2018 at the *UGC sponsored Refresher Course Environmental Science and Geological Sciences* organized by the Human Resource Development Centre (HRDC), Pondicherry University - Central University, Puducherry, January 2-22, 2018

"Environmental Justice and Provision of Natural Resource: Techno-Economic Assessment" on January 21, 2018 at the *UGC sponsored Refresher Course on Environmental Sciences* organized by the Human Resource Development Centre (HRDC), Pondicherry University - Central University, Puducherry, January 2-22, 2018

“An Ecological-Economic Approach to the Valuation of Ecosystem Services: A Case Study of the Natural and Anthropogenic Stress Ousteri Wetland” presented at the *National Seminar on “Environmental Concerns and Sustainable Industrial Growth: Prospects and Challenges”* organized by the Department of Economics, Jamia Millia Islamia – Central University New Delhi under the UGC Special Assistance Programme DRS-II held on March 24, 2017

“Valuing Ecosystem Services using Geo-Socio-Economic Lens” presented at the *One Week Workshop on “Environment-Economy Linkages: Contemporary Issues and Challenges”* organized by the Department of Economics, Jamia Millia Islamia – Central University New Delhi under the UGC Special Assistance Programme DRS-II held on March 20-23, 2017

“Economic Valuation of Ecosystem Services – Case Study of a trans-boundary Wetland, Ousteri across Puducherry and Tamil Nadu” for the *Workshop on “Revisiting Tamil Nadu State Action Plan Climate Change Strategies – Water Resources Sector”* sponsored by the Tamil Nadu State Land Use Research Board, State Planning Commission and organized by Department of Environment, Government of Tamil Nadu at Anna University on March 15, 2017.

“Trans-disciplinary Research Perspective of Social-Economic-Ecological System for Sustainable Development: An Empirical and Interpretive Analysis” on February 11, 2017 at the *UGC sponsored Refresher Course in Research Methodology* organized by the Human Resource Development Centre (HRDC), Pondicherry University - Central University, Puducherry between February 1-21, 2017

“Environmental Resource and Economics – Interdisciplinary Perspective to attain Sustainable Future” on December 3, 2016 at the *UGC sponsored Refresher Course on Environmental Sciences* organized by the Human Resource Development Centre (HRDC), Pondicherry University - Central University, Puducherry between December 1-21, 2016

“Agro Biodiversity and Traditional Knowledge”, at the *International Conference on “Agro Biodiversity and 20 Years of WTO”* organized by the Department of Environmental Law and Legal Order, The Tamil Nadu Dr. Ambedkar Law University, Chennai on January 29, 2015.

“Present and Future of Muslims in India” in the ICSSR Sponsored *National Conference on Socio-Economic and Political Status of Muslims in India: Challenges and Development* organized at the School of Social Sciences and Humanities, B.S. Abdur Rahman University, Chennai on January 22, 2015.

“On the sustainability of global development” was delivered at the UGC Refresher Course “*Economics Batch – XI V: Global Economic Scenario and the Indian Economy*” organized in the Department of Economics, University of Madras, Chennai, September 21, 2013

“Economic Valuation of Ecosystem Services and Biodiversity Conservation: A multidisciplinary approach” was delivered at the UGC Refresher Course “*Economics Batch – XI V: Global Economic Scenario and the Indian Economy*” organized in the Department of Economics, University of Madras, Chennai, September 21, 2013

“Sustainable Buildings – A Pathway Towards Green Cities” paper presented at the One-day training program on *Making Green Cities: A way for Sustainable Urban Development* at Department of Planning, School of Architecture and Planning, Anna University on March 22, 2013.

“Arsenic Contamination: An Insight on the Qualitative and Quantitative Pathways of Decontaminating the Natural Toxin” in the Ministry of Earth Sciences sponsored *National Seminar on Environmental Science and Engineering* at Easwari Engineering College, Chennai on January 10-11, 2013

“Sustainable Environment” was delivered and chaired the technical session on “Sustainable Environment”, *National Seminar on Issues and Challenges of Sustainable Development in India* held on January 30 and 31, 2012 organized by Department of Economics, Quaid-E-Millath Government College for Women in collaboration with Association of Economists of Tamil Nadu

“Studies on the Removal and Recovery of Toxic Pollutants” was delivered on September 28, 2010 at the *UGC Refresher Course* organized in the Department of Analytical Chemistry, University of Madras, Chennai.

“Environment and Economics” was delivered on July 15, 2010 at the World Environment

Day 2010 celebration themed “*Biodiversity – Ecosystem Management and the Green Economy*” organized by the Department of Architecture Sathyabama University in Association with the Institute of Town Planners, India – Tamil Nadu Regional Chapter (ITPI-TNRC) & Institute of Indian Architects - Tamil Nadu Chapter (IIA-TNC), July 15 and 16, 2010

“Environmental Resource Economics – Theory, Practice and Policy” was delivered at the UGC Refresher Course organized in the Department of Economics, University of Madras, Chennai, November 21, 2009

“Accounting for Water Quality – Case Study of Arsenic Pollution” on October 3, 2008 in the *Training Programme on Environmental Statistics with special reference to water accounting for Indian Statistical Service Officers*, September 29- October 3, 2008, sponsored by Central Statistical Organization, Government of India

“Pre- and Post- Tsunami Coastal Planning and Land-Use Policy Issues in India” was delivered at the UGC Refresher Course on “*Contemporary Economic Policy Issues in India*” at Madras School of Economics, December 4, 2007

“Partnership of Media and Community Based Disaster Management in Asia” was delivered at the *Workshop on Media and Disaster Management* organized by The Media Information and Communication Centre of India (MICCI) in collaboration with the Friedrich Ebert Stiftung, (FES) and the local partner Indian Online Media Forum (IOMF) on December 14 and 15, 2007

## **G. Research Article Under Review**

Benny, P., Prakash, D. & **Irfan, Z. B.** (2021). Vaccine Hesitancy and other attitudes towards COVID 19 Vaccination – Analysis using Fuzzy Cognitive Mapping. *Dialogues in Health*, (Accepted)

Rakshit, S. & **Irfan, Z. B.** (2021). Expanding beyond Threshold: Assessing the Urban Dynamics of the Land Use Pattern change of Chennai city. *Environmental Challenges* (Accepted)

Saja, A., Andlib, Z. **Irfan, Z.B.**, Shaw, D., Lung, S.C.C. and Panthi, G. (2021). “Socioeconomic Impacts of Heat Stress and the Coping Strategies Employed in Women-headed Households in selected South Asian countries: Application of System Thinking Approach”. *Journal of Integrative Environmental Sciences* (Accepted)

Ram, S. A, & **Irfan, Z. B.** (2021). Factors Influencing Adoption of Smart Metering and Domestic Water Consumption Preliminary Insights from a Household Survey in Chennai City. *Water Security* (Under Review)

Rakshit, S. & **Irfan, Z. B.** (2021). “Urban Flood Risk Mapping: A case study of Chennai city, India” *Journal of Urban Management* (Under Review)

Ahuja, N. & **Irfan, Z. B.** (2021). “Water Security and Gender Disparity – Indian Scenario”. *Water Productivity Journal* (Under Review)

Ram, S. A, & **Irfan, Z. B.** (2021). “Determinants of Household Water Efficient Technology Adoption and its Implication for Demand Side Management Policies”. *Water Research* (Submitted)

Salva, K. K. & **Irfan, Z. B.** (2021). “Impact of energy consumption and economic growth on Environment: An analysis of selected Asian countries”. *Energy Policy* (Submitted)

Anjanalakshmi, G. & **Irfan, Z. B.** (2021). “Urban Biodiversity and Human Well-Being: An Assessment of Indian Cities Resilient Characteristics”. *Urban Governance* (Submitted)

Salva, K. K. & **Irfan, Z. B.** (2021). “Does renewable energy provide energy security and Economic Growth in resilient with environment?”. *Energy Reports* (Submitted)

Chandhini, A. & **Irfan, Z. B.** (2021). “The Response of Grazing Land Footprint to Natural and Anthropogenic Disturbances - A Panel Analysis”. *Water Productivity Journal* (Submitted)

Vishnupriya, M. N., **Irfan, Z. B.**, Saja, A., Andlib, Z. and Panthi, G. (2021). “Assessing the Socio-economic Resilience of Urban Households to Heatwaves in SPIN countries” *Urban Climate* (Under Preparation)

## **H. Doctoral Research Supervision**

**Mr. S. Ashwin Ram** [CUTN registered research scholar] pursuing PhD research work with my guidance since October 2017. Receiving MSE Doctoral Fellowship. *Thesis Title:* Water Governance in India: An Assessment of Domestic Water Saving Technology Adoption and Consumption Efficacy

**Ms Satarupa Rakshit** [CUTN registered research scholar] pursuing PhD research work with my guidance since October 2017. Receiving MSE Doctoral Fellowship. *Thesis Title:* Flood Risk Assessment of Dynamic Urban System

**Ms Salva K K** [CUTN registered research scholar] pursuing PhD research work with my guidance since October 2018. Receiving UGC-JRF Fellowship. *Thesis Title:* In Pursuit of Sustainable Green Economy: Avenue to Address Renewable Energy Expansion at the Cost of Biodiversity

**Ms. Ashmy Tom** [MSE registered research scholar] pursuing PhD research work with my guidance since July 2021. Receiving MSE Doctoral Fellowship. Currently coursework in progress

## **I. Post-Graduate Dissertations Supervised**

<b>S. No.</b>	<b>NAME OF STUDENT</b>
<b>M.A Environmental Economics (2021)</b>	
1.	Ms G. Anjanalakshmi
2.	Ms Elsa Maria Joseph
3.	Ms Samridhi
4.	Ms Shilpa Sen
5.	Ms A Chandhini
6.	Ms Vishnu Priya M. N.
7.	Ms Ashwariya Sah
<b>M.A General Economics (2021)</b>	
8.	Mr Nitesh Ahuja
9.	Ms Priya Benny
<b>M.A Environmental Economics (2020)</b>	
10.	Ms. Deepshikha Jha
11.	Ms. Amra Shirin Faisal
12.	Mr. Yogeshwar K.G.
<b>M.A General Economics (2020)</b>	
13.	Ms. Rashmika Sharma
14.	Ms. Vidisha Kalra
<b>Post-graduate Diploma in Management - Research and Business Analytics (2020)</b>	

15.	Ms. Poongothai S
16.	Mr. Pratheek Arun K
17.	Mr. Niyanthan M
<b>M.A Environmental Economics (2019)</b>	
18.	Ms. Srihitha Baswapoor
19.	Ms. Aparna Sivaraman Prabha
20.	Ms. Samyuktha Ashokkumar
21.	Ms. Hema Priyadharshni S
<b>M.A Environmental Economics (2018)</b>	
22.	Ms Lalitha K
23.	Ms Debapriya Das
24.	Mr Ankan Ghosh
25.	Ms Shreya A
<b>M.A General Economics (2018)</b>	
26.	Mr. Aditya Kumar
<b>M. Sc Actuarial Economics (2017)</b>	
27.	Mr Ranjan Chauhan
<b>M. Sc Environmental Economics (2017)</b>	
28.	Ms Gouri M
29.	Ms. Padma Priya
<b>M. Sc General Economics (2016)</b>	
30.	Ms. Sowmya Shaklya
31.	Mr. Sahil Talwar
32.	Ms. Shiwani Chaddha
33.	Mr. Anshuman Kumar Mehta
34.	Ms. Dipti Sourot
<b>M. Sc Environmental Economics (2016)</b>	
35.	Ms. Devi R. Nair
36.	Ms. Lakshmi Sreedhar

37.	Ms. Anuja Mitra
38.	Ms. Shivani Gupta
39.	Ms. Divya Jain
<b>M. Sc Environmental Economics (2015)</b>	
40.	Ms. Anu Anna Jo
41.	Ms. Satarupa Rakshit
42.	Ms. Mohana Mondal
43.	Ms. Arpita Nehra
44.	Ms. Mallika Sharma
45.	Ms. Megha Jacob
46.	Mr. S. Anand
<b>M. Sc General Economics (2015)</b>	
47.	Ms. Rishman Jot Kaur Chahal
48.	Mr. Utkarsh Patel
49.	Mr. Ashwin Ram. S.
<b>M. Sc Financial Economics (2015)</b>	
50.	Mr. RKSM. Sennaya Swamy Naickar
<b>M. Sc Environmental Economics (2014)</b>	
51.	Mr. Abhijit Saran
52.	Mr. Thomas Alex
53.	Ms. Jagriti Kumari
54.	Mr. Shivam Malhotra
<b>M. Sc Environmental Economics (2013)</b>	
55.	Ms. Sneha Mishra
56.	Mr. Karthick R
<b>M. Sc Environmental Economics (2012)</b>	
57.	Ms. Jeeva Mary Jacob
58.	Ms. Amanat K. Gill

59.	Mr. Md. Tajuddin Khan
<b>M. Sc Applied Quantitative Finance (2012)</b>	
60.	Mr. Dhananjay Jaiswal
<b>M. Sc General Economics (2012)</b>	
61.	Ms. Sowmya. M
62.	Ms. Shobita Suresh
63.	Mr. Abdur Rasheed. M
64.	Mr. Yaadhav Dheepan. C
65.	Mr. Siva Chidambaranathan. M
<b>M. Sc General Economics (2011)</b>	
66.	Ms. V.P.Jyosthnaa
67.	Mr. S. Dheeraj
68.	Mr. Durairaj R
69.	Mr. Arun Jacob Mathews
<b>M. Sc General Economics (2010)</b>	
70.	Ms. Uttara Prakash
71.	Mr. Vijendran
72.	Ms. Vaishnavi
73.	Ms. Divya
<b>M. Sc General Economics (2009)</b>	
74.	Ms. Dhriti Mirpuri
75.	Mr. Vijayasarithi M
76.	Ms. Uvaneswari. P
77.	Mr. Ramesh K
78.	Ms. Vibha. D.S.
<b>M. Sc General Economics (2008)</b>	
79.	Mr. Karthi J
80.	Mr. Chandrasekar.D
81.	Mr. Prabhakaran T.R

## **MEMBERSHIPS**

Member, Regional Committee for the Asia and the Pacific (RCAP), Regional Office for the Asia and the Pacific (ROAP), International Science Council (ISC)

Life Member, International Society of Development and Sustainability

Life Member, International Water Resource Economics Consortium

Member, East Asian Association of Environmental and Resource Economics

Scientific Member, Monsoon Asia Integrated Research for Sustainability Study (MAIRS-Future Earth)

Member, Environmental Sustainability Knowledge – Action Network (KAN) for Future Earth), a ISC supported international scientific activity for sustainability science

Life Member, International Association of Hydrogeologists

Life Member, International Association of Hydrological Science

Member, Association of Indian Hydrologists

Life Member, Indian Water Resources Society

Member, Integrated Research on Disaster Risk (IRDR), International Centre of Excellence in Taipei (ICoE- Taipei)

Member, Association of Geoscientists for International Development

Member, International Global Atmospheric Chemistry

Member, South Asian Network of Economic Institutes

Member, Asia-Pacific Chemical, Biological and Environmental Engineering Society

Member, 2030 Water Resources Group, World Bank

## **INVITED REFEREE (AD HOC REVIEWER & PANELIST)**

Examiner for PhD thesis of Kannur University, University of Calicut, NIT Trichy, IIT Roorkee, IIT Indore, IIT Guwahati, Pondicherry University, G P Pant University of Agriculture and Technology, Uttarakhand, Asian Institute of Technology, Thailand, Institute of Water Policy, National University of Singapore.

Viva-voce examiner for PhD thesis for University of Madras, IIT Roorkee, IIT Guwahati, Jamia Millia Islamia, NIT Calicut.

### **Reviewer (Journal Manuscripts):**

Applied Energy	Resources, Conservation & Recycling
Cities	Sustainable Cities and Society
Clean Technologies and Environmental Policy	Energy Policy
Energies	Energy, Ecology and Environment
Water Research	Water Policy
Environment, Development and Sustainability	Urban Forestry & Urban Greening

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