



EUROPEAN UNION - INDIA
Research and Innovation Partnership



TECO

www.tecoproject.eu

PROGRAMME



teco.challenge@gmail.com

Joint Workshop

2nd November 2017

**Information and Networking Event
EU-India Call on Water**

3rd November 2017

Project co-funded by the European Union 2014-2018

This publication has been produced with the assistance of the European Union.
The contents of this publication are the sole responsibility of the CNR and can in no way taken to reflect
the views of the European Union.





The TECO Joint Workshop 2017, co-funded by the European Union, Delegation to India, and jointly organised by the National Research Council of Italy (CNR) and the National Environmental Engineering Research Institute (NEERI-CSIR), takes place in the period of maximum activity for the TECO project, in which all efforts are devoted to achieve the expected outcomes. Among these, I would like to emphasise the strengthening of the research and innovative collaborations between EU and India in the field of the environmental sciences, the stimulation of the dialogue between public and private actors for delivering innovations for general and local contexts, the development of new partnership involving people of different background on the topics covered by the TECO project. All these issues will be significantly addressed within the two days of the TECO Joint Workshop 2017. In this regard, I am very pleased to offer you in the second day of the Workshop the valuable opportunity to attend the promotion event of the EU call for Water Cooperation, presented by the EU Delegation to India, to which I express my personal and all the TECO team sincere thanks for all the support and care.

The success in the participation to the workshop went far beyond our greatest expectations. Indeed, this is the first step to succeed in boosting the cooperation between EU and India through the involvement of different actors in the field of the environmental sustainability, ranging from scientific Institutions to private companies passing through target groups and stakeholders. I am confident that all of you will find a real possibility to share common experiences and solutions and to improve skills and expertise in order to create an innovative approach addressing the dramatically urgent issue of the decontamination of soils and water. Finally, the follow-up of this event is expected to become a fruitful chance for new valuable collaborations able to meet the opportunities and the challenges in the field of the environmental rehabilitation we have in front of us.

Be a part of it!

Massimo Zacchini, TECO Project Manager



PROGRAMME OVERVIEW

2nd November 2017 – TECO Joint Workshop

9:00-9:30 am	Registration
9:30-11:00 am	Opening
11:30 am-1:00 pm	TECO: Results so far
2:00-3:30 pm	TECO: Private Companies Network
4:00-5:30 pm	TECO: EU-India Joint Initiatives
5:30-6:00 pm	Summing up & Perspectives

3rd November 2017 – Promotion Event: EU-India Call on Water

9:00-9:30 am	Registration and welcome coffee
9:30-11:00 am	Setting the context
11:30-12:45 am	State-of-the-Art: Drinking Water
2:00-3:15 pm	State-of-the-Art: Waste Water Treatment
3:15-4:30 pm	State-of-the-Art: Monitoring and Control Systems
4:30-5:30 pm	Questions & Answers and Networking
5:30-5:45 pm	Closing Session

**2nd NOVEMBER 2017****9:00 am – 9:30 am** **REGISTRATION****9:30 am – 11:00 am** **OPENING****Introduction and greetings**

- **Massimo Zacchini**, *Institute of Agro-environmental and Forest Biology (IBAF), CNR, Italy*
- **Paras Pujari**, *National Environmental Engineering Research Institute (NEERI), CSIR, India*

Welcome Address

- **Tania Friederichs**, *Head of Research & innovation, European Union Delegation to India, India*
- **Massimo Spadoni**, *Scientific attaché Embassy of Italy in New Delhi, India*
- **Fabio Trincardi**, *Director Department of Earth System Science and Environmental Technologies (DTA), CNR, Italy*
- **Angelo Massacci**, *Director Institute of Agro-environmental and Forest Biology (IBAF), CNR, Italy*
- **Rakesh Kumar**, *Director National Environmental Engineering Research Institute (NEERI), CSIR, India*
- **Arvind Kumar**, *Department of Science & Technology (DST), Govt. of India, India*

11:00 am – 11:30 am **TEA BREAK****11:30 am – 1:00 pm** **TECO: RESULTS SO FAR****Chairpersons:** **Massimo Zacchini**, *IBAF-CNR, Italy* and **Paras Pujari**, *NEERI-CSIR, India*

- **Massimo Zacchini**, *TECO Project Manager, IBAF-CNR, Italy*
- **Paras Pujari**, *TECO Project Officer, NEERI-CSIR, India*
- **Laura Passatore**, *Institute of Agro-environmental and Forest Biology (IBAF), CNR, Italy*
Three years of TECO Project: activities and outputs to now
- **Elango Lakshmanan**, *Dept. of Geology, Anna University, India*
PAH and chromium contamination in groundwater and remedial measures
- **Gordana Medunic**, *Dept. of Geology, University of Zagreb, Croatia*
Mediterranean coastal locality polluted with coal and ash enriched in S and Se: bacteria assisted remediation of soil
- **Pablo Souza Alonso**, *Dept. of Plant Biology and Soil Science, University of Vigo, Spain*
AURORA - Applied Urban Orchard Assessment
- **Robert Popek**, *Inst. of Dendrology, Polish Academy of Sciences and Warsaw University of Life Sciences, Poland*
Phytoremediation as a way to clean up the environment

1:00 am – 2:00 pm **LUNCH BREAK****2:00 pm – 3:30 pm** **TECO: PRIVATE COMPANIES NETWORK****Chairpersons:** **Roberto Pilloton**, *IC-CNR, Italy* and **Pradeep Kumar**, *Symbio Greentech Pvt.Ltd., India*

- **Mahajan Ratnakar**, *Maccaferri, India*
Ecofriendly Solutions with Advanced Materials for Landfill containment and Stabilization
- **Konrad Siegfried**, *Autarcon GmbH, Germany*
Solar driven water treatment without chemicals



- **Masood Mallick**, *ERM, India*
Soil and Groundwater Remediation: the Indian Experience
- **George Kiriakidis**, *IESL/FORTH and Dept. of Physics, University of Crete, Greece*
Disinfection of Waters/Wastewaters by Solar Photocatalysis
- **Pradeep Kumar**, *Symbio Greentech Pvt.Ltd., EKTA Incubation Centre, India*
Integrated Green Engineering to Clean Water
- **Daniel Lipschits**, *Biosfera Foundation, The Netherlands*
TUPIX: Enabling Water-Ecosystem Optimisation through Contract-based Monitoring and Management
- **Varun Sridharan**, *Greenenvironment Innovation & Marketing India (P) Ltd, India*
Real time monitoring of water quality using IoT (Internet of Things) - Our experience and findings

3:30 pm – 4:00 pm **TEA BREAK****4:00 pm – 5:30 pm** **TECO: EU-INDIA JOINT INITIATIVES****Chairpersons:** **Patrizio Arrigo**, *ISMAR-CNR, Italy* and **Elango Lakshmanan**, *Dept. of Geology, Anna University, India*

- **Gyan Singh Shekhawat**, *Dept. of Botany, Jai Narain Vyas University, India*
Metabolic adaptation to Cd induced oxidative stress in hydroponic cultures of *Brassica juncea* and role of Hemeoxygenase 1 (HO 1): A Phyto-remediation strategy
- **Antonio Lo Porto**, *Water Research Institute (IRSA), CNR, Italy*
Water4Crops: Integrating bio-treated wastewater reuse and valorization with enhanced water use efficiency to support the Green Economy in Europe and India
- **Sankalp Lahari**, *Dept. of Civil Engineering, Indian Institute of Technology Delhi and AquaSense Pvt.Ltd., India*
Real Time Monitoring of Water Resources Systems, particularly Ground Water and Ground Water Modelling at a Regional Scale
- **Muthiah Perumal**, *Dept. of Hydrology, Indian Institute of Technology Roorkee, India*
Innovative framework for river discharge estimation in the Indian Context
- **Fulvia Chiampo**, *Dept. of Applied Science and Technology, Politecnico di Torino, Italy*
Geophysical methods to monitor soil bioremediation
- **Chandan Ghosh**, *National Institute of Disaster Management, Ministry of Home Affairs, Govt. of India, India*
Geosynthetics & Bio-Engineering for Disaster Preparedness
- **Silvia Paparella**, *RemTech Expo, Italy*
RemTech Expo: European Community of contaminated sites remediation and territory requalification
- **Dinesh Mohan**, *School of Environmental Sciences, Jawaharlal Nehru University, India*
Engineered biochars for aqueous organic and inorganic contaminants remediation

5:30 pm – 6:00 pm **SUMMING UP & PERSPECTIVES**



3rd NOVEMBER 2017

9:30 am – 10:00 am **SETTING THE CONTEXT**

Opening Event

- **Tania Friederichs**, *Head of Research & innovation, European Union Delegation to India*

Welcome Address

- **Tomasz Kozłowski**, *Ambassador of the European Union to India*
- **Sadhana Relia**, *Ministry of Science & Technology, Govt. of India*

10:00 am – 10:30 am **PRESENTATION ON THE WATER CALL FOCUS AREA**

- **Rajendra Prasad Patury**, *Indian Co-Chair on Water Cooperation*

10:30 am – 11:15 am **GUIDELINES FOR PARTICIPATION – TECHNICAL ASPECTS**

11:15 am – 11:45 am **TEA BREAK**

11:45 am – 1:00 pm **THEMATIC SESSION 1**

Drinking water purification with a focus on emerging pollutants

Chairperson: A.B. Gupta

- **A.B. Gupta**, *Malaviya National Institute of Technology, India*
Surface and groundwater Quality Issues in India – Way forward
- **Venkatraghavan**, *Hindustan Unilever Limited, India*
Opportunities and Challenges in Drinking Water
- **Ashok Gosh**, *Mahavir Cancer Institute & Research Centre, India*
Multiple and emerging contaminants in drinking water: understanding the dynamic relationships
- **Lalit Moha Sharma**, *SM Sehgal Foundation, India*
Rain water harvesting: Innovation practiced: Creating fresh water source within saline aquifer
- **Konrad Siegfried**, *Autarcon GmbH, Germany & Asis Mazumdar*, *Jadavpur University, India*
Sustainable Integrated Energy Efficient Water Supply
- **Reema Biswas Mondal**, *National Environmental Engineering Research Institute (NEERI), CSIR, India*
In situ bio rejuvenation and remediation of eutrophic ponds/lakes through engineered ecosystem management
- **Pradeep Kumar**, *Indian Institute of Technology Roorkee, India*
Fate of emerging pollutants during conventional water treatment and modifications required to attenuate

1:00 pm – 2:00 pm **NETWORKING LUNCH**

2:00 pm – 3:15 pm **THEMATIC SESSION 2**

Waste water treatment with scope for resource/energy recovery, reuse, recycle and rainwater harvesting, as well as bioremediation technologies

Chairperson: A.K. Nema



- **A.K. Nema**, *Indian Institute of Technology Delhi, India*
Emerging issues in waste water management
- **C. Anuj Kanwal**, *Ministry of Water Resources, Govt. of India, India*
Upcoming Challenges in Water resources in India
- **H. Chanayaka**, *IISc, India & Gangrekar*, *Indian Institute of Technology Kharagpur, India & Srikanth Mutnuri*, *BITS, India*
Small scale sustainability systems for treatment and resource recovery from Gray water
- **Absar Kazmi**, *Indian Institute of Technology Roorkee, India & Markus Starkl*, *University of Life Sciences (BOKU), Austria*
Sustainable waste water, sludge treatment and reuse
- **George Kiriakidis**, *Foundation for Research and Technology-Hellas (FORTH), Greece*
Disinfection of water/waste waters by solar photocatalysis
- **Ludo Diels**, *VITO, Belgium & Anshuman*, *The Energy and resources Institute (TERI), India*
Treatment of highly contaminated drains in energy and nutrient recovery
- **Aviraj Datta**, *ICRISAT Development Centre, India*
In situ waste water treatment and performance evaluation
- **Gordana Medunic**, *University of Zagreb, Croatia*
Coal related aquatic pollution of Adriatic Karst Environment with selenium

3:15 pm – 4:00 pm **THEMATIC SESSION 3**

Real time monitoring and control systems in distribution and treatment systems

Chairperson: M.S. Mohan Kumar

- **M.S. Mohan Kumar**, *Indian Institute of Science, India*
Smart water systems
- **Varun Sridharan**, *Greenenvironment Innovation & Marketing India (P) Ltd, India*
Real time monitoring and control system in water distribution and treatment system
- **Patrizio Arrigo**, *ISMAR-CNR, Italy*
Development of multi sensing system for contamination of emerging concern in water
- **Daniel Lipschits**, *Biosfera Foundation, The Netherlands*
TUPIX: IoT&Blockchain OperatingSystem for real Time Ecosystem Monitoring and Control
- **Pawan Labhasetwar**, *National Environmental Engineering Research Institute (NEERI), CSIR, India*
Improved asset management and water treatment considering variation in water quality in India

11:15 am – 11:45 am **TEA BREAK**

4:00 pm – 5:30 pm **QUESTIONS & ANSWERS AND NETWORKING**

5:30 pm – 5:45 pm **CLOSING SESSION**