

SC5-12-2018: EU-India water co-operation

Specific Challenge: In recent years, India and Europe have collaborated extensively to enhance and enrich each other's technological and scientific knowledge and management capacities to cope with increasing stress on water resources. Increasing heterogeneity in the uneven distribution of water resources triggered by climate change, extreme water-related events (floods and droughts) and increasing demand due to population growth and economic development add additional stress to water, environment and food security and to the national economy. Many of these water challenges are common to India and some of the EU Member States. Therefore there is a need for a concerted effort of India and EU to address these issues. This will also help in achieving the Sustainable Development Goals' (SDGs) agenda on water.

Scope: This action should develop new and/or adapt the most suitable existing innovative and affordable solutions for Indian conditions, both in urban and rural areas, addressing one or more of the following broad challenges:

- drinking water purification with a focus on emerging pollutants;
- waste water treatment, with scope for resource/energy recovery, reuse, recycle and rainwater harvesting, including bioremediation technologies;
- real time monitoring and control systems in distribution and treatment systems.

Actions should therefore take into account India's water challenges both with regard to quantity and quality. In doing so, allocation of water should be facilitated and the supply should become more competitive or lead to an optimisation of costs; it should also lead to better water management and quality by finding solutions to the treatment of widely varying pollution loads including those from emerging pollutants. The impact of extreme climate and hydrological conditions (monsoon floods) also need to be taken into consideration.

Actions addressing wastewater treatment should focus on sustainable use/reuse of water in rapidly expanding urban areas, as well as smaller cities lacking any type of suitable wastewater treatment. Actions may also address the development of appropriate decentralised water treatment and wastewater treatment and recycling systems, including the improvement of sewage collection and urban drainage systems. Water and energy efficient and cost-effective processes, optimising use and maximising energy and materials recovery from wastewater treatment, reliable monitoring schemes to ensure safe water use and reuse, and simple and affordable operation and maintenance methods also need to be considered.

Actions focusing on drinking water purification should address multiple contaminants or focus on the identification and removal of specific classes of pollutants (e.g. pesticides, fertilisers, geogenic contaminants, etc.).

In actions on wastewater treatment and drinking water purification, the design, development and deployment of sensors and decision support systems for real time monitoring and control of water quantity and quality, should be considered.

In all cases, the involvement of relevant stakeholders, including industry partners, local authorities, water users, research centres and social communities, and consideration of possible gender differences in the use and need of water, is essential in order to enable a strong demonstration component involving transfer of European knowledge, expertise and technology to facilitate future in-house replication. Understanding and assessing the impacts of the developed innovative solutions to the society, in particular for the vulnerable societal groups, should be duly considered. Moreover, in addressing water allocation, the governance of water management and the efficiency of water use, especially for irrigation which is the largest water consumer, should be considered. Actions may also choose to address a combination of the above challenges at river basin scale and should capitalise on knowledge acquired in the projects supported by the joint coordinated EU-India call on water under FP7. Activities are expected to focus on Technology Readiness Levels (TRL) 3 to 6.

In line with the strategy for EU international cooperation in research and innovation (COM(2012) 497), international cooperation is encouraged, in particular with the EU's strategic partners – which India is, as confirmed at the EU-India Summit on 30 March 2016. Actions should include Indian partners in a balanced way. This call should also contribute to the objective stated in the Memorandum of Understanding on water cooperation between India and the EU adopted on 7 October 2016¹ aiming at strengthening the technological, scientific and management capabilities of India and the EU in the field of water.

Proposals should pay attention to the special call conditions for this topic. Both the Indian Department of Science and Technology (DST) and the Department of Biotechnology (DBT) within Indian Ministry of Science and Technology, are committed to co-fund the Indian entities and thus Indian participants will not be eligible for EU funding. This call text will also be available on the websites of DST and DBT respectively and it will refer to the agreed Co-Funding Mechanism (CFM)² between the EC and DST and DBT. Proposals are to be developed jointly with the Indian entities. For funding purposes, the Indian entities must Horizon 2020 - Work Programme 2018-2020 Climate action, environment, resource efficiency and raw materials submit the proposal to DST and/or DBT. Evaluation will be done jointly according to the conditions specified in the CFM and respecting the EC peer review rules.

The Commission considers that proposals requesting an overall contribution (including both EU and India funding) of between EUR 3 million and EUR 5 million would allow this specific challenge to be addressed appropriately. Nonetheless, this does not preclude submission and selection of proposals requesting other amounts. The funding support for the Indian entities will be according to the DST and/or DBT funding guidelines.

¹ https://ec.europa.eu/commission/commissioners/2014-2019/vella/announcements/memorandum-understanding-between-republic-india-and-european-union-water-cooperation_en

² http://ec.europa.eu/research/participants/data/ref/h2020/other/hi/h2020_localsupp_india_en.pdf

Expected Impact: The project results are expected to contribute to:

- improved and efficient wastewater treatment systems, combined with recovery and reuse of energy, substances and treated water;
- improved novel drinking water purification technologies for safe drinking water with easy access at affordable cost both in rural and urban regions;
- improved smart and comprehensive solutions for both quality and quantity monitoring and management of water resources;
- strengthening the Sustainable Development Goals' (SDGs) agenda on water;
- boosting initiatives like the Ganga Rejuvenation Initiative³ , fostering the emergence of quick-win business, affordable, innovative solutions based on integrated Indian and EU best practices;
- creating a level playing field for European and Indian industries and SMEs working in this area, paving the way for a potential joint venture for manufacturing of water treatment technologies and systems.

Type of Action: Research and Innovation action

Opening date(s), deadline(s), indicative budget(s)

Opening on	7 November 2017 00:00 (Brussels local time) 3:30 am (Indian Time)
Deadline for proposal submission	27 February 2018 17:00 (Brussels local time) 9:30 pm (Indian Time)

³ <http://nmcg.nic.in/>