

## POST-ACTIVITY REPORT

**Type of activity:**  Workshop/Seminar/Training  Conference  Study Tour  
 Regional Exchange  Access to information (APP, media campaigns, posters, etc.)  Consultancy/Advice  Training of Trainer

**Title/Topic:** Increased awareness and techno-economic knowledge on wastewater recycling and reuse

CM02

### **Dates and place:**

STE K V Emmanuel produced this study and the material collection after few revisions in October 2022. The assignment was started earlier in 2022 in close cooperation with DoE Dhaka. To further improve the guide, feedback from experts of this authority and practitioners was received and the material was modified accordingly.

**Responsible person:** LTEs BGD and STE (Dr KV Emmanuel)

### **1) Please describe your activity briefly:**

The main aim is to support professionals of the textile sector and responsible persons at environmental regulating authorities in making environmental assessments in factories through provision of knowledge on the state-of-the-art of wastewater reuse in the textile sector in form of a structured study. This will lead to increased awareness and improved techno-economic knowledge on possibilities of wastewater recycling and reuse.

Reduction of water consumption to less than 50% of the present value is technically feasible through application and optimisation of those techniques. Different technologies, process modifications and optimisation are presented and promoted here and should be pursued further. The different options and implementation aspects are made available and technically detailed here.

### **2) If any provided service has been introduced and/or adapted, please describe briefly changes made and rationale for introduction/adaptation.**

The document is meant for providing an overview of options for recovery of clean water from treated effluent from textile industries of Bangladesh and elsewhere for further use in the processes. Since most of the industry is consuming groundwater for its operations, over-exploitation resulted and the ground water tables are dwindling alarmingly. This industry is expected to continue its tremendous growth rate in coming years, additional consumption of water can be expected, even as the present water availability is reduced fast. Recycling and reuse require treatment of effluents and recovery of part of water through RO, but discharge or proper management of the rest. This is simpler and cheaper than Zero Limit Discharge and represents a partial solution for complete environmental compliance which is an issue with this option.

## Fostering and Advancing Sustainable Business and Responsible Industrial practices in the Clothing Industry in Asia programme

The provision of his comprehensive technical material will enable professionals to reduce wastewater discharge and minimise water consumption; the regulating authorities may use the compendium for evaluation of possible technical measures to be prescribed for the sector to improve the environmental performance in the factories.

The industries will be enabled to select and evaluate the suitable measures to be applied for the benefit of water savings and cost reduction for effluent treatment.

### 3) Outreach to partners and target group (beneficiaries)

Target groups are representatives of decision making and technical personnel of regulating authorities apart from those who will select and apply the technologies in the production units. The adaptation of wastewater recycling technologies may also require the cooperation with institutes at universities in the country.

**Type of participants:**  Company owners/management  Private sector representatives  
 Public sector representatives  Workers representatives  workers  trainers/instructors  
 Others : academia, university institutes active in technology development and application

### 4) Topics discussed/worked on/covered during activity/event:

The technical compendium comprises 17 chapters on 120 pages with the following principal elements

- i. Need for optimization of water usage in the industry
- ii. Effluent treatment for ultimate water recycle and water reuse
- iii. Common tertiary treatment systems for effluent recovery
- iv. Technologies used for desalination of textile effluent
- v. Technical treatment options for effluent recovery systems
- vi. Management of saline reject
- vii. Cost implications
- viii. Bottlenecks and hurdles to be overcome
- ix. Current scenario of implementation of effluent recovery in Bangladesh, possible strategies to implement and way forward

### 5) What are results/products of the activity (presentations, handbooks, other materials, etc.)? Expected learning effect/impact (what should people be able to do differently after the activity)

- The study allows all kind of enviro-technological professionals and government representatives dealing with textile sector and/or wastewater to make realistic environmental assessment of options and how the existing practices can be modified, thus, setting goals and the scope future improvement in these fields including complete implementation.
- Other bilateral or multilateral projects for the same or even different industry sectors will benefit from this compilation with profound evaluations.