

# LIVING LAB WATER MEKONG DELTA

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# WHY LEARNING BY DOING?

**Society is facing major challenges among others in the field of climate change, health, safety and our environment.**

**New structures are needed to address the major societal questions. Structures in which governments, companies, knowledge institutions and local people work together with co-responsibility on the development of innovative concepts, processes, services and products.**

**A form for this collaborative ‘learning by doing’ process is offered by the living lab concept.**

# LIVING LAB?

**Open innovation system for creation, prototyping, validating, and testing of new technologies, services, products and systems in real-life contexts.**

**Based on public-private-people partnerships (4Ps or quadruple helix) of companies, NGO's, knowledge institutes, and users, all collaborating.**

**Often linked to a location, region.**

# LIVING LAB WATER MEKONG DELTA

## SOME TOPICS

- Water security (access to clean water)
- Flood protection (building with nature, flood adaptation, storm water management, coastal zone-and river basin management, climate resilience)
- Water pollution (water treatment, sanitation, retrieval of nutrients, biogas)
- Assessment the water quality and flow regime changes under climate change and human activity impacts in the Mekong Delta development of eco-tourism
- City groundwater usage: quality and quantity
- Impacts of intensive aquaculture cultivation
- Plastic litter removal from surface water and up-cycling

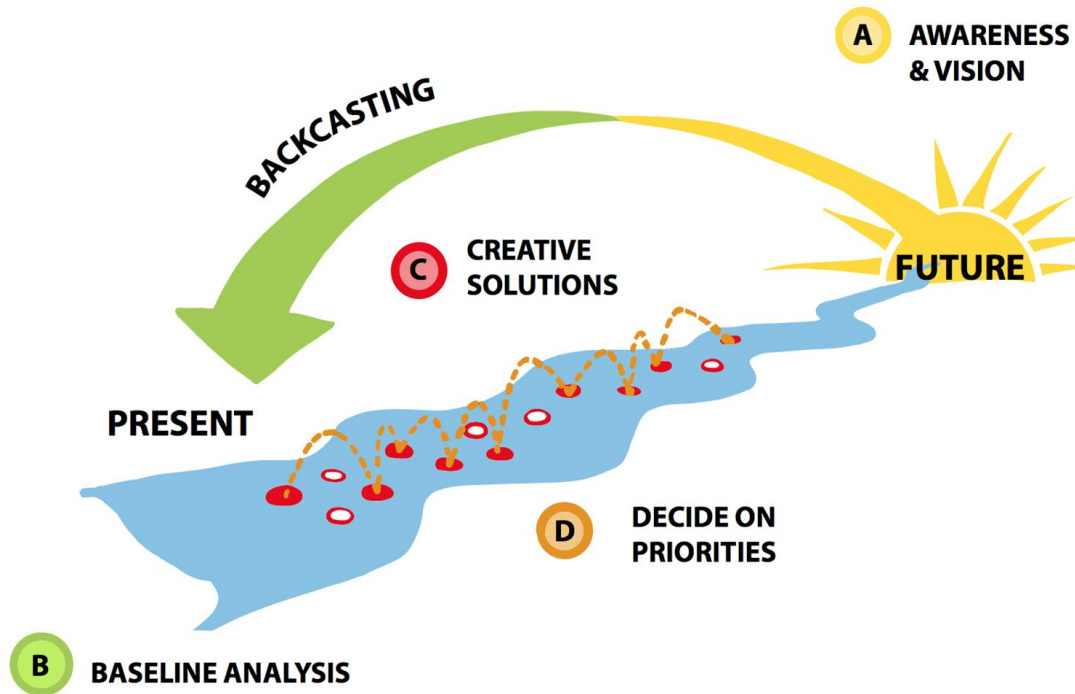
# WHAT IS THE LLW MD LOOKING FOR?

The Living Lab Water Mekong Delta is looking for companies and NGO's that would like to join by:

- Offering internship positions to students
- Facilitating students and researchers by sharing knowledge, facilities, etc.
- Joining and collaborating in applied research
- Financially or otherwise support the Living Lab Water



# ABCD ROADMAP FOR CO-CREATION



The ABCD roadmap guides the participants of the Living Lab Water to the desired outcome: the solution to a specific water problem should be in line with the principles of the circular economy.

**PLACE:** anywhere in the multiple R strategy

**ROLE:** knowledge facilitator, via (re)designing, testing and monitoring



# **USING LESS WATER: Hydroponics and combined cultivation**





# LIVING WITH WATER: climate adaptation & flood proofing





# EFFECTS OF CLIMATE CHANGE on ecosystems services: farmers An Giang province







# BUILDING WITH NATURE: flood protection





# Can Tho University : Current waste management

An observation and overview of how the waste is currently being managed within the Can Tho University Campus.

During the analysis of the Can Tho University Campus area, regarding the current waste management, the following can be concluded:

- 1) Many containers are placed in unfitting locations,
- 2) Containers are mostly placed in groups of more than two containers,
- 3) Many containers are overfull, resulting in littering of waste.
- 4) Waste is not separated (plastic, organic, paper and rest waste),
- 5) Waste is being set on fire,
- 6) At some important locations there are no containers at all, such as parking areas.
- 7) A lot of the waste is littered around the campus site, resulting in pollution of the environment.

From these points can be concluded that the current status of waste management within the campus is not optimal. Which is why it is required to optimize its current waste management, by distributing the waste collection containers correctly, making sure the waste is collected overtime, separating the waste for the purpose of recycling, and cleaning up the littered waste. These measures could overall contribute to the sustainable development of the Can Tho University and ultimately the whole of Can Tho.

## Legend

- Stationary bins
- Moveable bins
- Highly polluted area
- Scorch marks



A small courtyard, with four empty bins next to a large amount of waste. This shows the lack of awareness towards the collection of waste.



Campus housing with bins overflowing. Every single bin is full and there is a need for more places to collect trash.



An area where many trash bins are closely together but most are empty. Relocation should be considered to stop other bins from overflowing.



Trash is being burnt in the evening. This causes damage to the environment and people's health. If it would be collected more often maybe the need to burn would not be there.



A long street with locations to sit and relax but no place to put trash. If one or two trash bins could be placed here it could make a tremendous difference. With also making sure the littered waste is collected and processed.



Trash bins are provided. However, they are either not distributed properly. Or set up properly. Resulting in inefficient use of the waste collection units.



These several waste containers are "locked up" behind a fence, not being used for the purpose of waste collection. Which is a shame because these could be used in locations, needing of waste collection bins.



A very large amount of waste close to several trash bins. This shows a lack of awareness towards waste collection.

Date of observation:  
6 March 2017

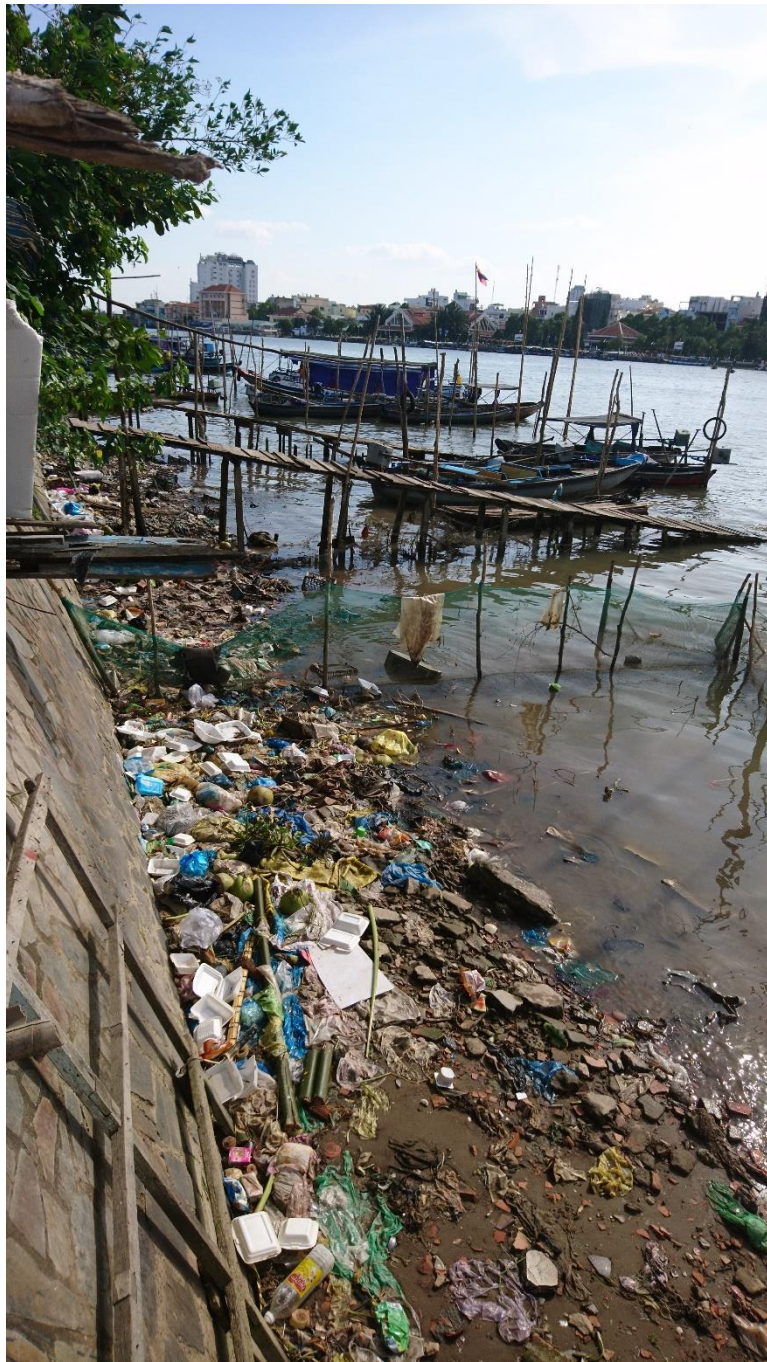
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# PREVENT WATER POLLUTION

## circular approach for plastic litter



Volumes have increased over the last decade, but only few types of plastic are accepted for recycling.

<https://www.youtube.com/watch?v=hD7Hvvrv47w>