

# Activity 2: Problem statement and project requirements

## Group W3

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## ACTIVITY 2:

### 1. Problem Statement:

Tanh Linh Town in Binh Thuan Province is currently facing a critical water shortage that is impacting over 12,500 households and is projected to affect over 20,500 in the near future. The root cause of the water shortage is extreme weather and a sudden increase in temperature. Hence, groundwater levels and depleted natural rivers and streams, also known as untreated water, began to decrease, leading to water plants lacking sufficient raw water to meet the growing demand.

### 2. Project Requirements:

- **Primary Goal:**

In the short term, the government should rebuild a reliable, clean water resource to meet growing demand as a basic need for daily life in the Tanh Linh community.

In the long term, aside from meeting water demand, we should also create and maintain sustainability in water conservation.

- **Needs:**

- Actively finding alternative sources of raw water, such as rainwater, building reservoirs, or desalination.

- Refocus and modernize the infrastructure of water; recommend extending the water pipeline.
- Conduct research on water consumer behaviour and create suitable conservation strategy (for example, public education on water saving).
- Develop a long-term water management strategy taking into account future population growth and climate change.
- **Constraints:**
  - Budget limitations
  - Technological feasibility
  - Environmental impact
  - Social acceptance

### 3. What does a design idea mean to you and your team?

For our team, a design idea is not just a technical solution but a vision of how we can improve the lives of the community by providing clean and sustainable water. It involves creating a comprehensive plan that addresses immediate needs in the short term while ensuring sustainability and scalability in the long term. This design idea must reflect a balance between economic, technical, and social factors, with the ultimate goal of enhancing the quality of life and protecting the environment.

### 4. Guiding principles:

- **Affordability:** cost of solution should not exceed budget and should also be accessible to all households
- **Sustainability:** maximizing the application of environmentally friendly practices in the whole process.
- **Scalability:** this should be combined with sustainability, a solution can adapt to future population growth and changing water demands.
- **Community Integration:** community should be involved in the design process to make sure all issues are addressed and minimize the risk of insufficient system.

Reference:

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