

Swiss Water & Sanitation Consortium **eawag**  
aquatic research

## Blue Schools – Linking WaSH in Schools with other SDG 6 Targets




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Confédération suisse  
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Federal Department of Foreign Affairs FDFA  
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## Building on Experience «WINS»

### Methods in Action...








**With more time in a WASH in Schools project cycle, could we explore other SDG 6 targets with students?**

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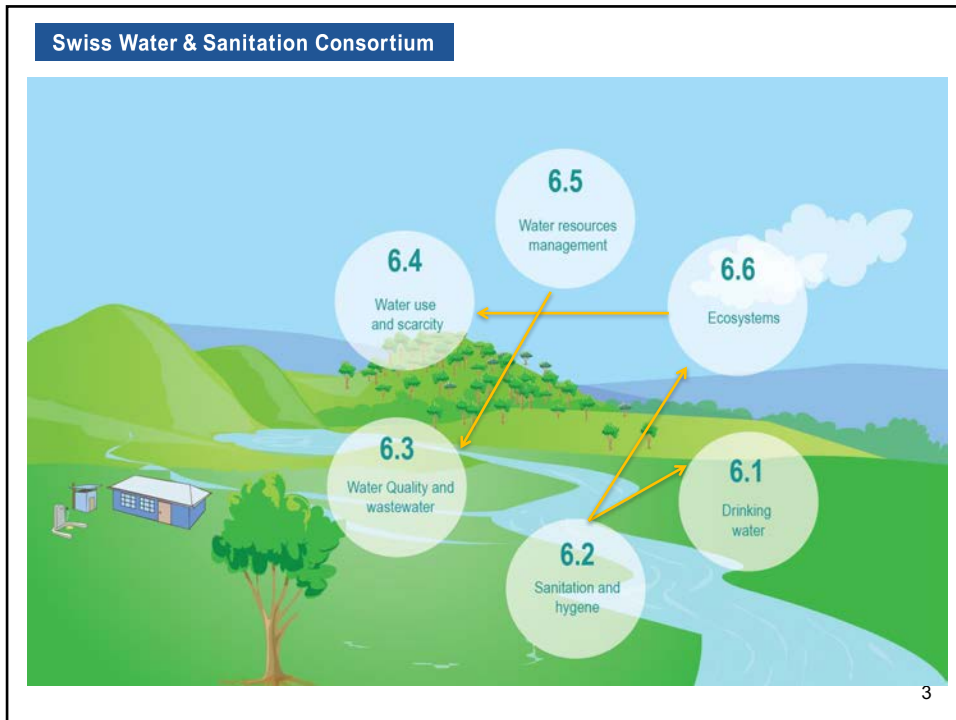





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## «Blue Schools»

- **Offer** a healthy learning environment (WASH in Schools)
- **Expose** students to environmentally-friendly technologies and learning → good land, water & waste management
- **Inspire** students to be change agents in their communities → the next generation of **Water Sector Champions**

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## WASH in Schools + Gardening

International Rainwater Harvesting Alliance, Mexico



Terre des hommes, Bangladesh



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## Prevention of Soil Erosion



Helvetas Swiss Intercooperation, Nepal




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## July 2017 Learning Workshop (Nairobi)





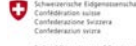
- 1. Go beyond gardening**, introduce more focus on Sustainable Land & Water Management Techniques
- 2. Explore action research** on the effects of school activities in homes & communities
- 3. Highlight** real water sector champions in countries, women & men
- 4. Engage systematically with Education Ministries:**
  - Find SDG6 entry points in existing curriculum (e.g. Water cycle)
  - Identify student clubs & organized activities
  - Model and pilot with local authorities, who present at national level

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## New Blue School Kit *(in development)*

- I. Facilitator's Guide**  
(8 Topics) 
- II. Catalogue of Technologies**
- III: Catalogue of Practical Exercises**  
 Inspiration and ideas
- IV: Concept Brief**  
(document conceptuel avec feuille de route) 


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## I. Facilitator's Guide

1. My Surrounding Environment
6.5, 6.6
2. The Water Cycle
6.5, 6.6
3. The Watershed around my School
6.5
4. My Drinking Water
6.1
5. Hygiene & Sanitation
6.2
6. Growth & Change
6.2
7. From Soil to Food
6.4
8. From Waste to Resources
6.3



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### Keyhole Garden From Plant to Food

KITCHEN GARDEN  
WATER CONSERVING AGRICULTURE

**Description of Technology**  
The Keyhole Garden model of homestead vegetable cultivation enhances the resilience of families living in areas with climate-related hazards, such as flooding and drought. Keyhole gardens have been shown to increase vegetable production in all seasons, thereby improving household food autonomy and dietary diversity. (WOCAT)

**Where Can it Work?**  
Broadly Applicable in most parts of the world

**How does it Work?**  
A keyhole garden is typically a 2m wide circular raised garden with a keyhole-shaped indentation on one side. The indentation allows gardeners to add uncooked vegetable scraps, greywater, and manure into a composting basket that sits in the center of the bed. In this way, composting materials can be added to the basket throughout the growing season to provide nutrients for the plants. The upper layer of soil is hilled up against the center basket so the soil slopes gently down from the center to the sides. Most keyhole gardens rise about one meter above the ground and have walls made of stone. The stone wall not only gives the garden its form, but helps trap moisture within the bed. Keyhole gardens originated in Lesotho and are well adapted to dry arid lands and deserts. In Africa they are positioned close to the kitchen and used to raise leafy greens such as lettuce, kale, and spinach; herbs; and root crops such as onions, garlic, carrots, and beets. Keyhole gardens are ideal for intensive planting, a technique in which plants are placed close together to maximize production. Plants with wide reaching root systems such as tomatoes and zucchini may not perform well in a keyhole garden.

**How much does it cost?**  
The Cost is variable based on availability of plants, a supply of compost, and materials necessary to define the perimeter form of the garden. (See WOCAT manual for more detailed cost breakdown)

**Implementation Manual**  
See Blue School Technology Database

**BENEFITS**

- Facilitate year round vegetable production
- Increases quality and diversity of vegetables
- Can provide protection against flood water intrusion

**DRAWBACKS**

- Raised Garden requires additional soil to build up height of plinth

(Example: Catalogue des technologies)

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**Terrestrial Chamber**

**Decomposition Chamber**

**Aquatic Chamber**

### Terra-Decomposition-Aqua Column From Plant to Food

MODEL MAKING  
LEVEL: SIMPLE

**(Exemple: Catalogue des exercices pratiques)**

**Exercice**  
An Aqua-column is a self-sustaining ecosystem on a small scale, made of plastic soda bottles. This eco-column has 3 chambers: the terrestrial chamber, the decomposition chamber, and the aquatic chamber. The terrestrial layer represents the land habitat including plants and insects (if desired). The bottle caps are perforated to allow fluid to move from one chamber to another. The decomposition chamber represents a leaf litter habitat, much like a compost pile. The aquatic chamber is a mini freshwater habitat for aquatic plants and even small fish. All three of these chambers make a "mini-ecosystem" within a classroom setting. A student can see the interactions between the chambers as the student waters the plants that grow in the terrestrial chamber and observe how the water travels through the decomposition layer all the way to the aquatic habitat below.

**Teaching Objective**  
To encourage children to learn about the organic processes taking place in their environment

**Materials Needed**  
3 PET bottles, scissors, soils and organic materials from local environment and water and aquatic materials for aquatic chamber

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## Other Technology / Exercise examples

**Bucket or Bottle Drip Irrigation**  
Even when rainfall is low or erratic, the bucket drip irrigation system enables farmers to nourish and grow the crops they need

**Crumpled Paper Watershed Model**  
To design & understand topography –spray the model and watch the water run down slopes and soak in in low areas


**Zai or Planting Pits**  
Zai pits are a traditional method for rehabilitating dry lands and restoring soil fertility

Watershed


**Infiltration Trenches**  
An infiltration or percolation trench is a method for managing rain runoff, preventing flooding and reducing downstream erosion

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It doesn't have to be a «Blue School»...



**Blue** because **Water** is common to all aspects: Watershed, Waste & WASH

Kit eventually available:  
[www.waterconsortium.ch](http://www.waterconsortium.ch)



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Blue School 2.0 Workshop - July 2017 Nairobi



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