Eawag:
Swiss Federal Institute of Aquatic
Science and Technology

eawag
aquatic research

Using a systematic approach to achieve Zero Waste at schools

Seminar "Approaching the topic of Waste in schools and kindergartens"

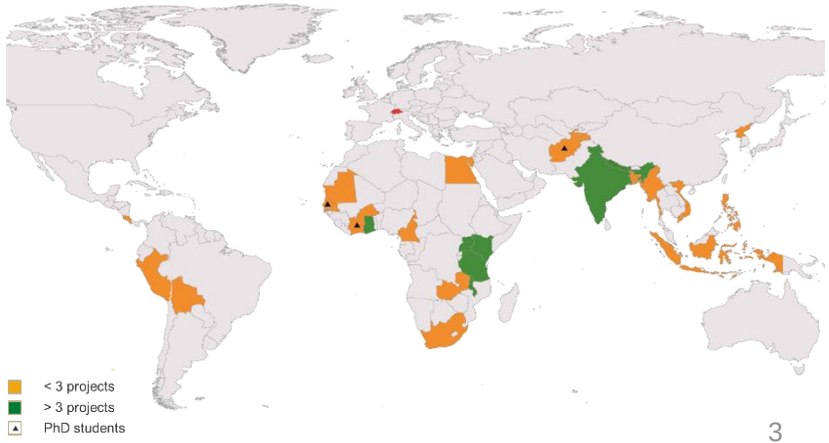
16.12.2020, Adeline Mertenat
Adeline.Mertenat@eawag.ch

Few words about Eawag/Sandec

- **Eawag:** Swiss Federal Institute of Aquatic Science and Technology
- **Sandec:** Department of Sanitation, Water and Solid Waste for Development

Few words about Eawag/Sandec

- **Eawag:** Swiss Federal Institute of Aquatic Science and Technology
- **Sandec:** Department of Sanitation, Water and Solid Waste for Development
  - ***Mandate:*** To support, inform, and impact research, education, policy, standards, and practice towards achieving the SDGs
  - ***Strategic research themes:***



Few words about Eawag/Sandec

Municipal Solid Waste Management Group

Research focused on enhancing resource recovery of organic waste, as close to the source as possible in order to alleviate problems of transport and disposal.

Research Topics:

- **Carbonization of Urban bio-waste**
- **Black Soldier Fly (BSF)**
- **Anaerobic Digestion**
- **Composting**

Indonesia

India

Tanzania

Indonesia

Few words about Eawag/Sandec

Municipal Solid Waste Management Group

Research focused on enhancing resource recovery of organic waste, as close to the source as possible in order to alleviate problems of transport and disposal.

Research Topics:

- Carbonization of Urb
- Black Soldier Fly (Bs
- Anaerobic Digestion
- Composting

→ Portfolio of waste management/reuse options exist

→ Validation in case studies needed!

Indonesia

India

Tanzania

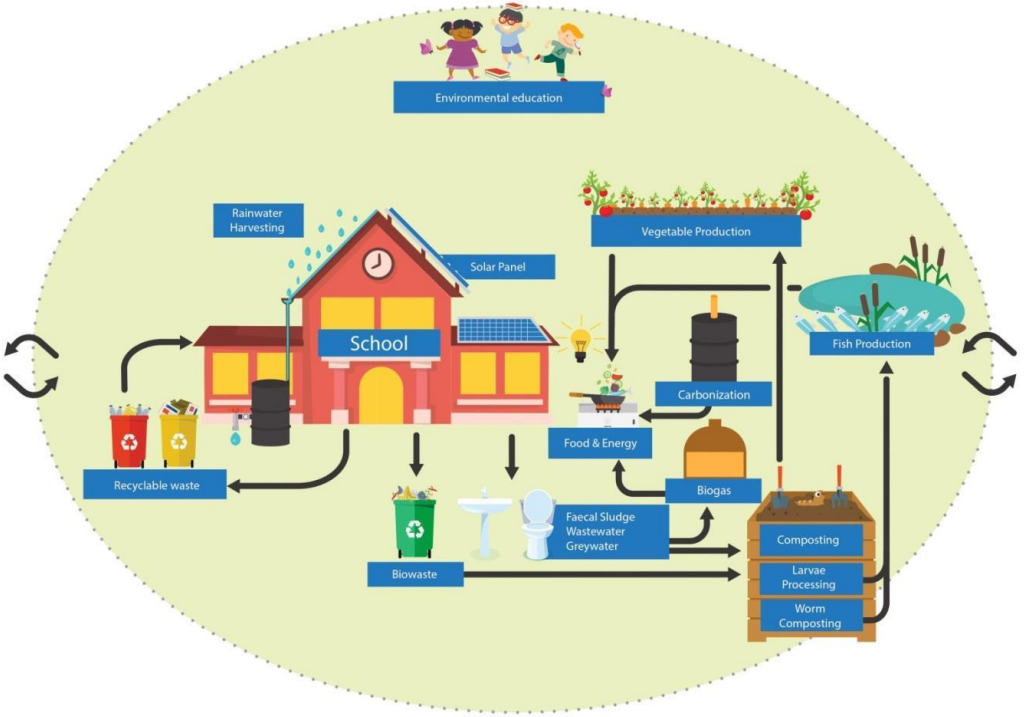
Indonesia

Zero Waste at schools (ZW@S) Project

4R principle in Schools

- Reduce, Reuse, Recycle, Recover

✓ Sustainable and efficient practices at school
✓ Awareness through education
✓ Concept of «learning by doing»



STEPS for implementing Zero Waste approach

National level

Case study level: Planning & Implementation

Overview Study	Baseline Assessment	Development of an Action Plan	Implementation of the Action Plan
- Literature review - Interviews	- Observations - Interviews - Measurements	- Interpretation of results - Development of ideas - Discussions	- Put into practice the action plan - Operation and adaptation

Key Questions

Waste management assessment

Where is the waste produced?
Amounts and composition of waste?
Where does it go?

Behaviour change

Perceptions and practices on waste management

WASH assessment

How is the WASH situation?

Water, Hygiene, Sanitation

Community assessment

Behaviour in surrounding community?
Impact of waste management at school on the community?

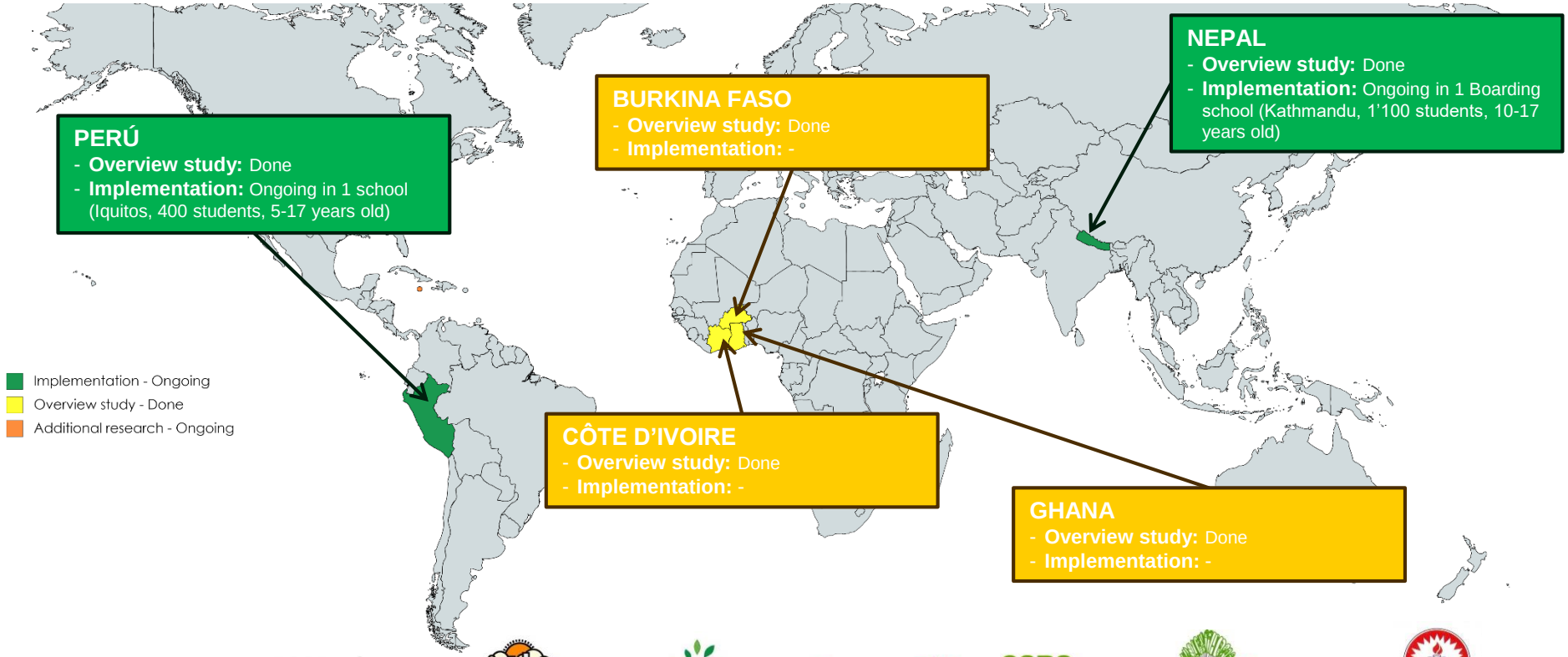
Recycling market

Is there a recycling market?
Which materials and at which price?

Curricula analysis

Are WASH/waste topics included in the school curricula?
How to integrate them?

2020 Achievements



Partners:

500B solutions

CIUDAD SALUDABLE

Clean up Nepal

WaterAid

CSRS Centre Suisse de Recherches Scientifiques en Côte d'Ivoire

ZW@S, Peru – Cristo Redentor School

PERÚ
- **Overview study:** Done
- **Implementation:** Ongoing in 1 school (Iquitos, 400 students, 5-17 years old)

Implementation - Ongoing
Overview study - Done
Additional research - Ongoing

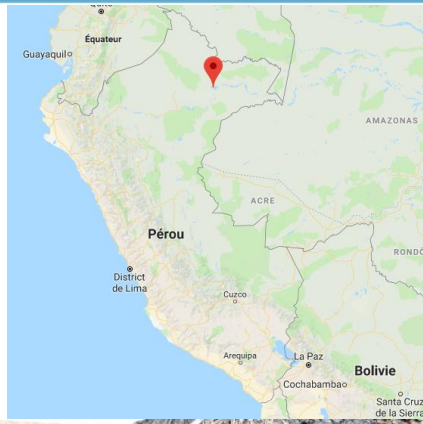
Partners:

CIUDAD SALUDABLE

ZW@S, Peru – Cristo Redentor School

Iquitos

- 6th city of Peru
- Located in the Amazonian basin (jungle)
- Population: 470’000 inhab. (75’000 in Bélen)



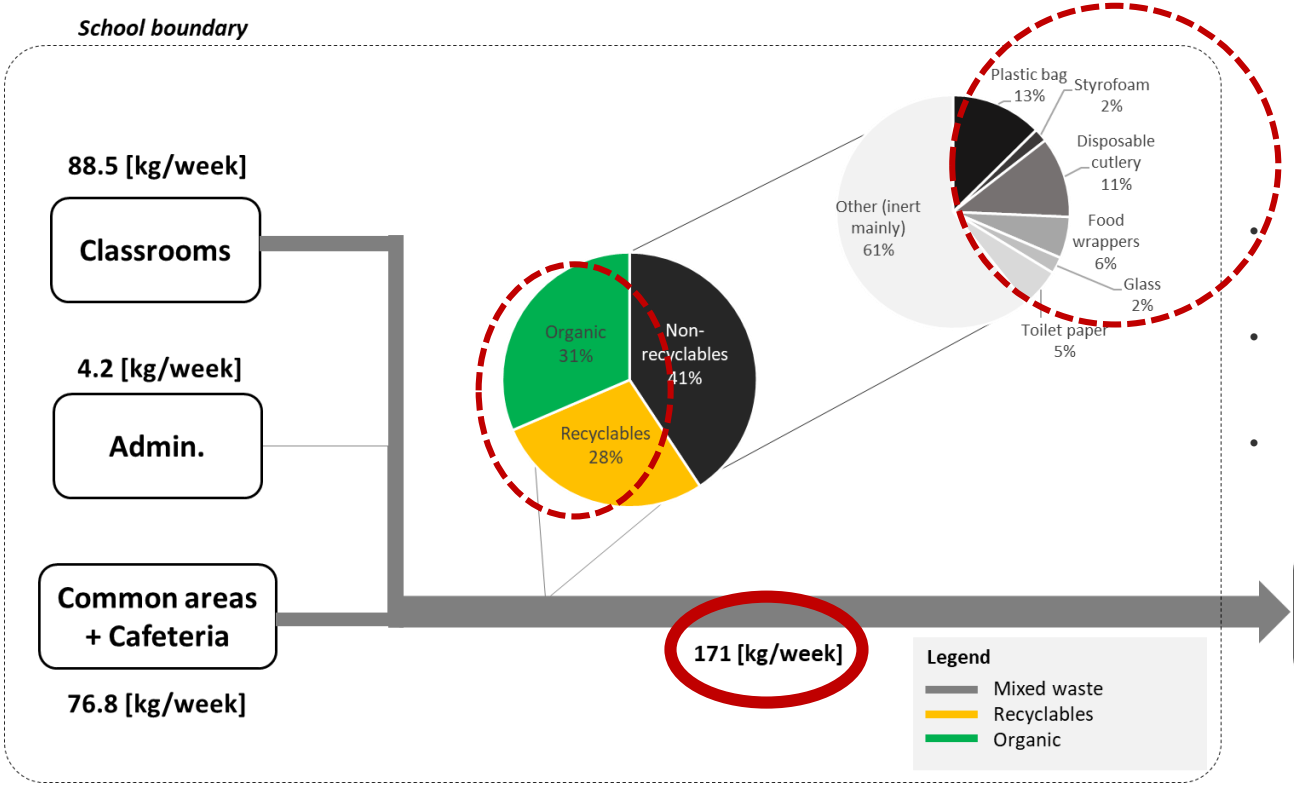
ZW@S, Peru – Cristo Redentor School

Background information

- 320 students + ~40 teachers
- 3 levels: kinder / primary / secondary
- Semi-private catholic/ecological school

ZW@S, Peru – Cristo Redentor School

Baseline Assessment



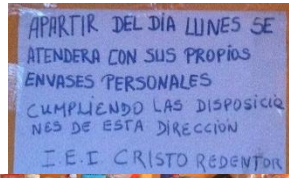
- ~171 kg/week mixed waste produced
- Potential for waste recycling if waste segregated
- High potential for waste reduction!

ZW@S, Peru – Cristo Redentor School

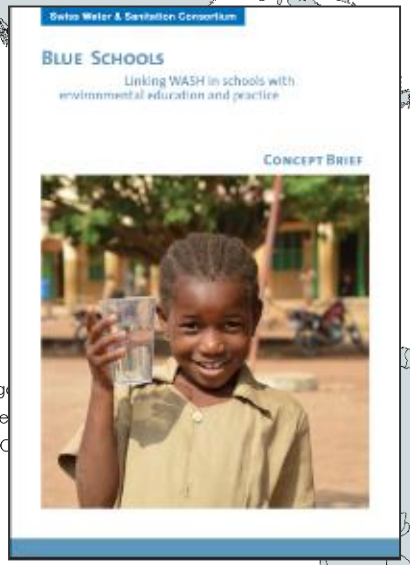
Development and implementation of the Action Plan

- 3bin waste segregation system
    - Recycling stations
    - Class interventions
- Waste reduction campaign
    - Cafeteria
- Workshop on Composting

1st time for Ciudad Saludable to steer Action Plan based on Waste assessment!



Burkina Faso, Ghana, Côte d'Ivoire



Implementation - Ong
Overview study - Done
Additional research - C

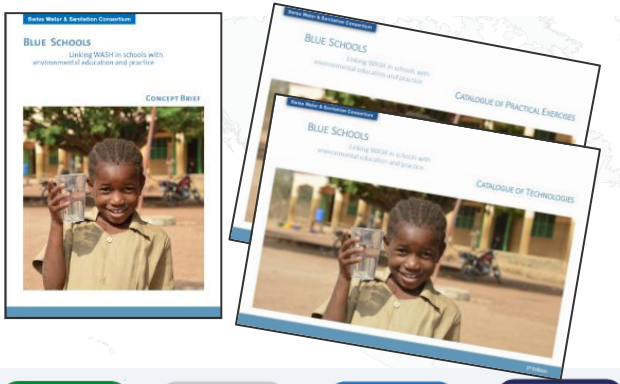
BURKINA FASO
- **Overview study:** Done
- **Implementation:** -

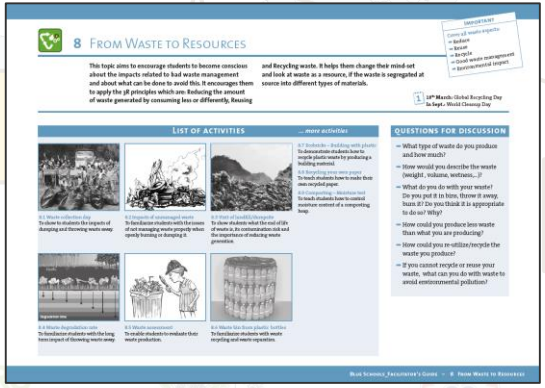
CÔTE D'IVOIRE
- **Overview study:** Done
- **Implementation:** -

GHANA
- **Overview study:** Done
- **Implementation:** -

Partners: WaterAid, CSRS Centre Suisse de Recherches Scientifiques en Côte d'Ivoire

Blue Schools Kit





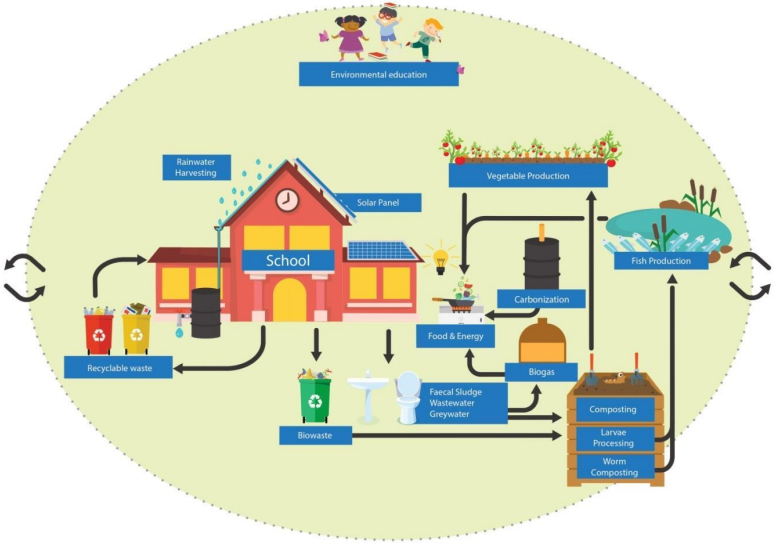
Partners: WaterAid

Material can be downloaded here: https://waterconsortium.ch/blueschool/

Waste Management in Schools

Take-home messages

- Waste management : challenging worldwide !
- Behavior and perception change needed !
- Good assessment of the school waste management needed
    - If done with students, school staff and involving parents: better
- Plan Actions to be taken accordingly
- Consider waste management as a cross-cutting issue



→ KEY: Shift of paradigm – Waste as Resource

Thanks for your attention!

Adeline Mertenat
Adeline.Mertenat@eawag.ch

https://www.eawag.ch/en/department/sandec/projects/mswm/zero-waste-schools-and-communities/ (Guidelines for Zero waste approach: to be released end 2021)

https://ypg.iswa.org/working-groups/education/ (List of resources for teachers to be released April 2021)