DUTCH WASH ALLIANCE

# Environmental Sustainability

In the storage, management and use of water

How can you store large amounts of clean water that would otherwise be lost via runoff? And how can you access that water when it is needed? The answers to these questions differ for each area or watershed. The Dutch WASH Alliance therefore works to find the most sustainable, suitable and context-specific solutions. The goal is to provide people with enough clean water, in a way that benefits both them and their natural environment. The '3R' approach plays a vital role in realising this goal.

## What does '3R' stand for?

3R stands for the three elements required to store, manage and utilise water:

1. Recharging water involves the application of techniques for restoring groundwater levels. This form of water storage prevents natural water sources from drying up as a result of climate change or excessive use of ground and surface water.
2. Retaining water involves storing water, for example in water tanks, to ensure that the water does not flow away to the river or sea when it rains, but is captured in the area and made available when needed.
3. Re-using waterinvolves using and re-using water for multiple purposes. At the household level this can entail reusing stored kitchen waste water, for instance for watering plants.

## How can you best implement the '3R' approach?

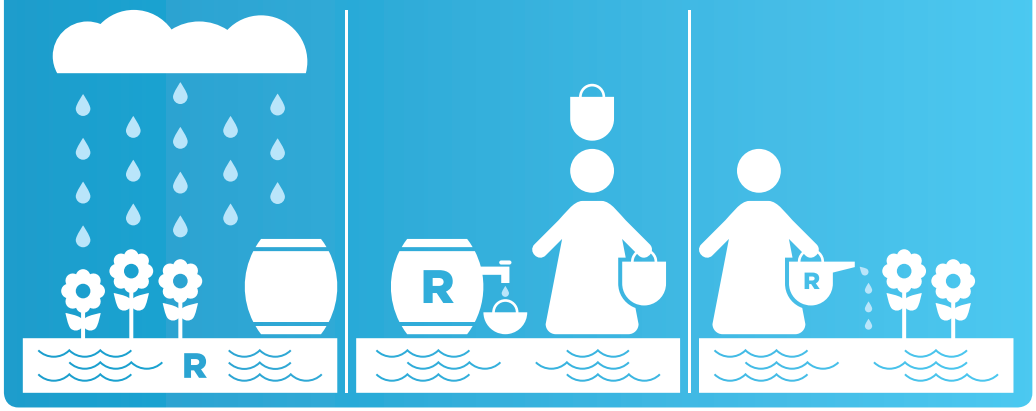
First, by analysing the following elements:

- what water sources are available in the area or watershed;
- when and how can you use these sources;
- how much clean water is needed and how much of a shortfall must be made up;
- whether the availability of clean water varies according to season;
- whether climate change will affect the availability of clean water over time;
- which storage options the landscape offers;
- how many people need water and who they are;
- what the purpose of their water need is (agriculture, livestock or household tasks, for example);
- whether water use could be optimalised and who controls the water sources;
- which other sources and services the natural environment offers its residents.

## The Dutch WASH Alliance

...is active in the fields of Water, Sanitation and Hygiene (WASH), especially in developing countries and always in partnership with local parties: from local community and governments to businesses and civil society organisations. The solutions vary from context-specific awareness creation programmes and training courses to the construction of water systems or sanitary facilities. The work is always focused on achieving sustainable results. In order to realise these goals, the organisation follows the 'FIETS' strategy. 'FIETS' is not only the Dutch word for 'bicycle' (itself a very sustainable way to move!), it also stands for Financial, Institutional, Environmental, Technical and Social sustainability of WASH interventions.

Recharging, retaining and re-using renewable water sources



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## Why should we use the '3R' approach?

- Because it allows us to use the area itself to store water without having to apply expensive and environmentally unfriendly technical solutions.
- Because it increases the availability of water in the area.
- Because the water can be used and re-used for different purposes, including drinking water.
- Because it makes the surroundings greener.
- Because it helps people deal with the consequences of climate change and increasing pressure on water resources.

## West Uganda once more has sufficient water

Problems with water in the middle of a wetland? It may seem like an unlikely scenario, but the western Ugandan town of Rwambu was once faced with that problem. In the past, rivers and springs had provided enough clean water for everyone. But then the population began to grow, and with it grew their need for farming land. The result was a shortage of clean water. The Dutch WASH Alliance worked together with local organisations, governments and communities to find a solution.

More and more natural water sources began to dry up in the higher elevations in the area, and it became more difficult to draw water from ground and surface water sources. So the residents were forced to go down the hills to use the water from the wetland in the valley. The growing number of valley residents also used this water, which was increasingly becoming polluted by waste flows from the villages. On top of these factors, people began to drain the wetlands to use it for agricultural land. So there was not only less clean water, the area had less water in general.

## Reducing the burden on the wetlands

What is the best way to deal with the pollution? How can you ensure that everyone has enough drinking water? And how can you prevent farmers from draining more of the wetland? The wetland purifies the water, acts as a natural reservoir and is considered a valuable ecosystem thanks to the resources and services it provides. Local communities, for example, benefit from the wood, reeds and fish harvested from the wetland area. They therefore argued for a better protection of the wetland, but were unable to organise it at the time. The Dutch WASH Alliance and a local NGO developed an integrated solution. For this, they consulted with a wetland management group created to deal with the problem and composed of representatives from the local community. The solution consisted of planting a row of trees, 15 meters from the current wetland boundary. The local community now considers this line of trees to be the natural barrier demarcating the area that is off-limits to agriculture. The farmers who lost their land in the process were compensated with alternative sources of income, such as starting up coffee farming in the highlands.

## Letting the ground water level recover

Successful coffee farming and agriculture in located areas required restoringthe ground water tables. To achieve this goal, the local community built stone walls around the hills to stop the rainwater from running off the hills. Trees planted at the top of the hills contributed to more infiltration and hence more recharge of the groundwater. Besides, techniques were used to infiltrate water directly into the soil. This helped to refill ground water tables, and in the long term dry springs will eventually begin to provide water again. The local NGO and the wetland management group also installed ecologically sound sanitary facilities. Now people do not have to come down from the highlands in search of water, and these measures will help restore the wetland in the valley.