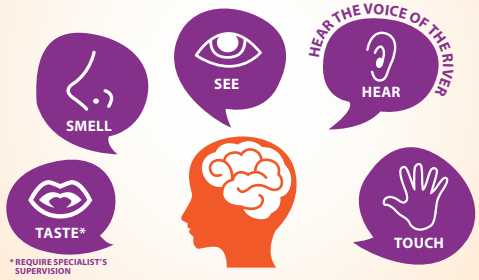
HOW TO TEST THE RIVER WATER'S QUALITY?

PHYSICAL MONITORING



USE YOUR SENSES

CHEMICAL MONITORING

FOR EDUCATION PURPOSES ONLY

pH
pH is a measurement of the activity of hydrogen ions in a water sample.

DISSOLVED OXYGEN
is found in microscopic bubbles of oxygen that are mixed in the water and occur between water molecules. An important indicator of a water body's ability to support aquatic life.

TEMPERATURE
Most aquatic organisms have adapted to survive within a specific water temperature range (cannot tolerate extreme heat / cold)

PHOSPHATE & NITRATE
Main organic compounds that are river polutants.

TURBIDITY
Turbidity is a measure of the cloudiness of water (*the amount of light that can penetrate the water).*

DO NOT DRINK THE RIVER WATER EVEN IF THE WATER QUALITY SHOWS IT IS VERY CLEAN
There is a chance of the water containing unknown bacteria or other polutants.

USE WATER QUALITY TESTING KIT

BIO-MONITORING

Biological monitoring provides remarkable insight into the functional quality of the environment studied. It can reveal important changes in the composition of biological communities caused by human activities. It asks the question: "Is this aquatic community showing evidence of harm?" The approach relies on the great diversity of enthic macroinvertebrate life in rivers and streams to determine how suitable a waterbody is for the support of aquatic life.

It is a relatively inexpensive and reliable method of acquiring an indication of the water quality and uses simple and inexpensive tools. By identifying 'sensitive' aquatic insects, we can use them as 'bio-indicators' of different levels of water quality. These organisms can provide a relative view of the overall quality of a stream at any given moment.

WHAT DO WE LOOK FOR?

Short-term indicators

INVERTEBRATES
Invertebrates are animals with no backbones (include insects, crustaceans, annelids (worms) and molluscs). Water quality is important to aquatic insects because they breed and live in water (some until they become adults, like dragonflies and mayflies) as they are very sensitive and cannot tolerate poor water quality.

However, some invertebrates are very tolerant and can be found in very polluted water.

There are even some invertebrates that cannot be used as indicators because they are found everywhere and are not really affected by water quality; they are called 'non-indicator' animals.

Long-term indicators

VERTEBRATES
Vertebrates are animals with backbones. In rivers, fish are the most abundant vertebrates. Since they spend their whole lives in the water, they are good indicators of what the water quality has been like over a longer period of time. If there are few fish, it probably means that the water quality has not been good for a long time.

However, there are some that are more tolerant of polluted water than others. In fact, some can tolerate and thrive in very polluted water like Tilapia, whereas others require pristine water to survive.

USE A NET / SIFTING TRAY

DO YOU KNOW YOUR RIVER ADDRESS?

Your river basin is one part of your ecological address. A river basin is all of the land that rain water flows across or under on its way to a river. Everyone lives within a river basin, although away from a river. The land that we live on eventually drains to a river, estuary or lake, where our actions on that land affect the water quality and quantity far downstream into the ocean.

DO YOU KNOW WHERE IS YOUR RIVER BASIN?

STEP 1: Locate your house in the map given. Find the drain located within your housing area.

STEP 2: Can you identify the nearest river? **List down the name.**

STEP 3: Does the river leads into a 2nd river? **List down the name.**

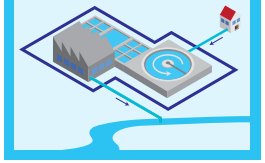
STEP 4: Follow the river flow until it reaches the sea. **List down any connecting rivers on the way.**

DO YOU KNOW WHERE YOUR DRINKING / TAP WATER COMES FROM?

Find the nearest water treatment plant. **List down the location / name.**

FIND OUT WHERE YOUR WASTEWATER GOES TO

Find the nearest wastewater treatment plant. **List down the location / name.**



PROJECT PARTNERS:

DID MALAYSIA

Global Environment Centre

OPEN CLASSROOM AS A ONE STOP CENTRE (OSC) FOR RIVER EDUCATION PROGRAMME

OPEN CLASSROOM is an outdoor educational facility that has been developed under ROLPOP programme as one of the initiative for general public and local communities target groups. It is located near to the river ecosystem which functions as an outdoor educational facility to educate and enhance awareness on the importance of the sustainable river management (protection, conservation and rehabilitation).

LOCATION:
The OPEN CLASSROOM Taman Warisan is located at source of Klang River, that is from the Klang Gate Dam near to Taman Melawati.

IMPACTS ON COMMUNITY & NATURE

- An improved sense of connectivity between the communities with river especially Klang River within the project site.
- An increase in awareness, exchange of knowledge and community-initiated action through Civic Science Approach especially hands-on monitoring in reducing local communities impact either directly/indirectly to Klang River.
- Public to be the "eyes and eyes" by taking ownership on the river to monitor and to play their roles towards protecting the river or drain near their neighbourhood. The establishment of the ROL POP Open Classroom as the One Stop Centre (OSC) for river education programme at proposed sites.
- River Education and experience ground for the youth and the citizens that have not seen a clean river, wetland and the riverine biodiversity.

national transformation programme

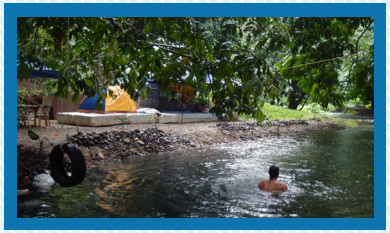
Greater Kuala Lumpur / Klang Valley

River of Life

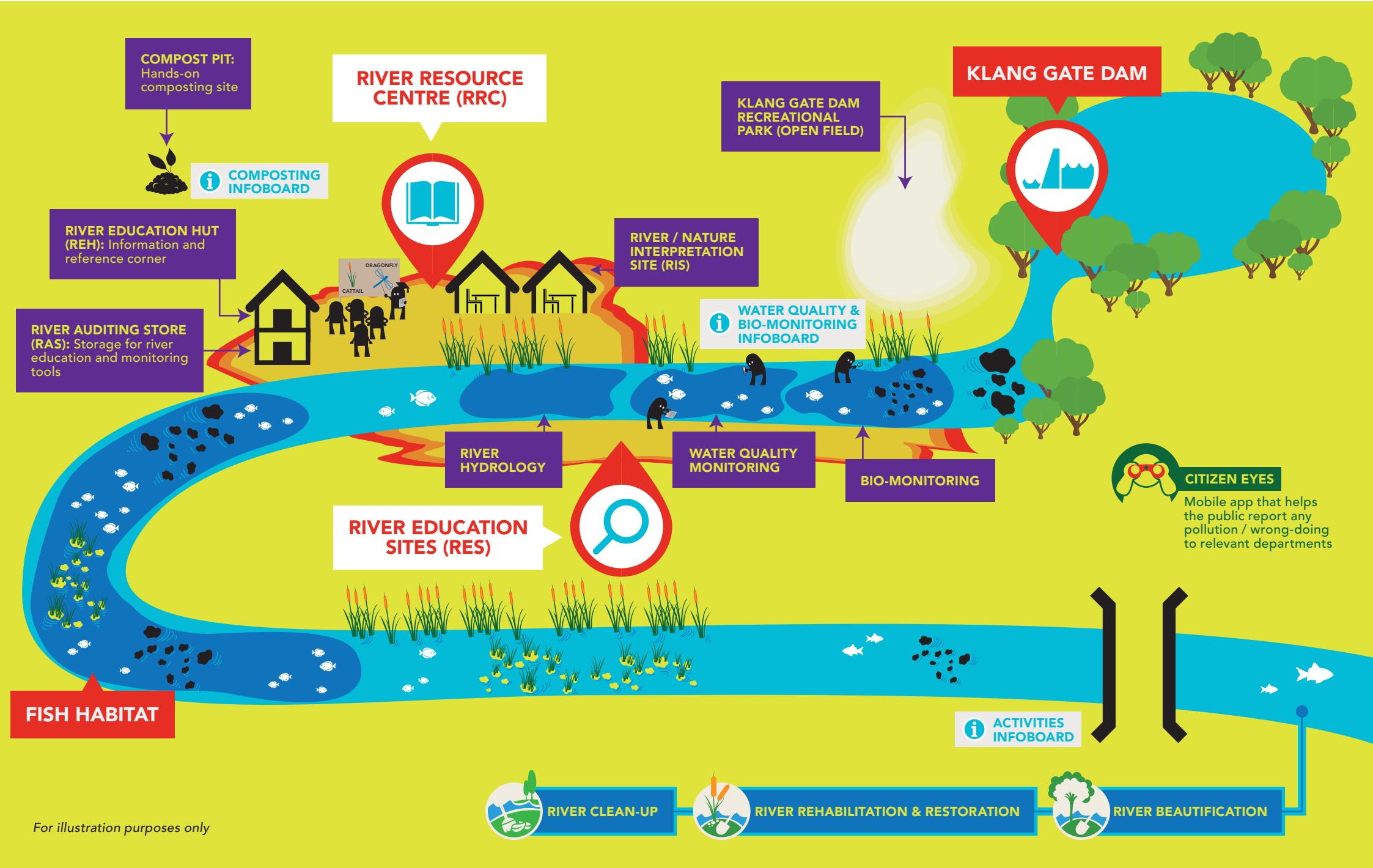
The River of Life (ROL) is one of the Malaysia's Entry Point Project (EPP) under the Greater Kuala Lumpur / Klang Valley National Key Economic Area (NKEA). The initiative aims to improve the Klang River water quality from Class III to Class IIB by 2020 to enable the river to be used for recreation purposes.

As part of the public engagement, Public Outreach Programme (POP) was to improve attitudes and behaviours of target groups within the project area towards river care and conservation in order to reduce pollution and improve water quality.

TRANSFORM



KLANG RIVER OPEN CLASSROOM MAP



For illustration purposes only