



Global Environment  
Centre

# GEC'S ECOSYSTEM RESTORATION JOURNEY



REIMAGINE  
RECREATE  
RESTORE  
#GenerationRestoration

# ART OF SMART PARTNERSHIP FOR SUSTAINABLE RIVER MANAGEMENT



Dr. K. Kalithasan Kailasam  
RIVER Care Programme Manager

# RIVER Care Programme

## MISSION

Promote the protection, restoration and sustainable use of rivers by enhancing multi-stakeholder participation and knowledge to stimulate local action.

## VISION

To have clean, healthy, living and vibrant rivers for people and the environment

## TAGLINE

**Water is Life; River is Lifeline;  
Protect rivers to protect life**



2002



2004



2007



2014



2015



2015

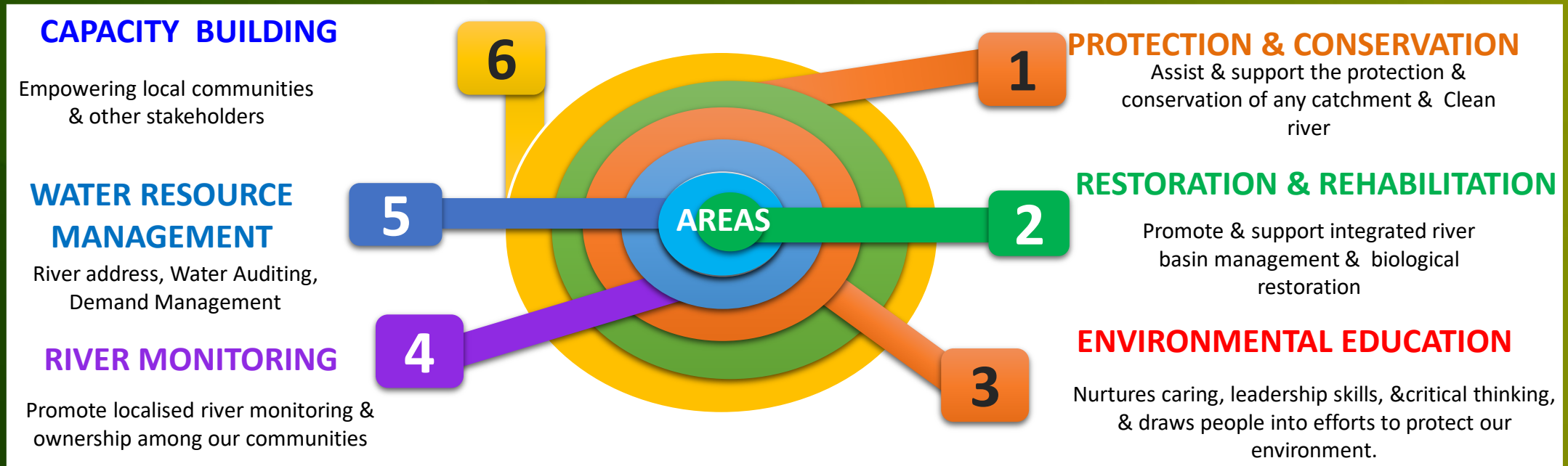


2016



2019

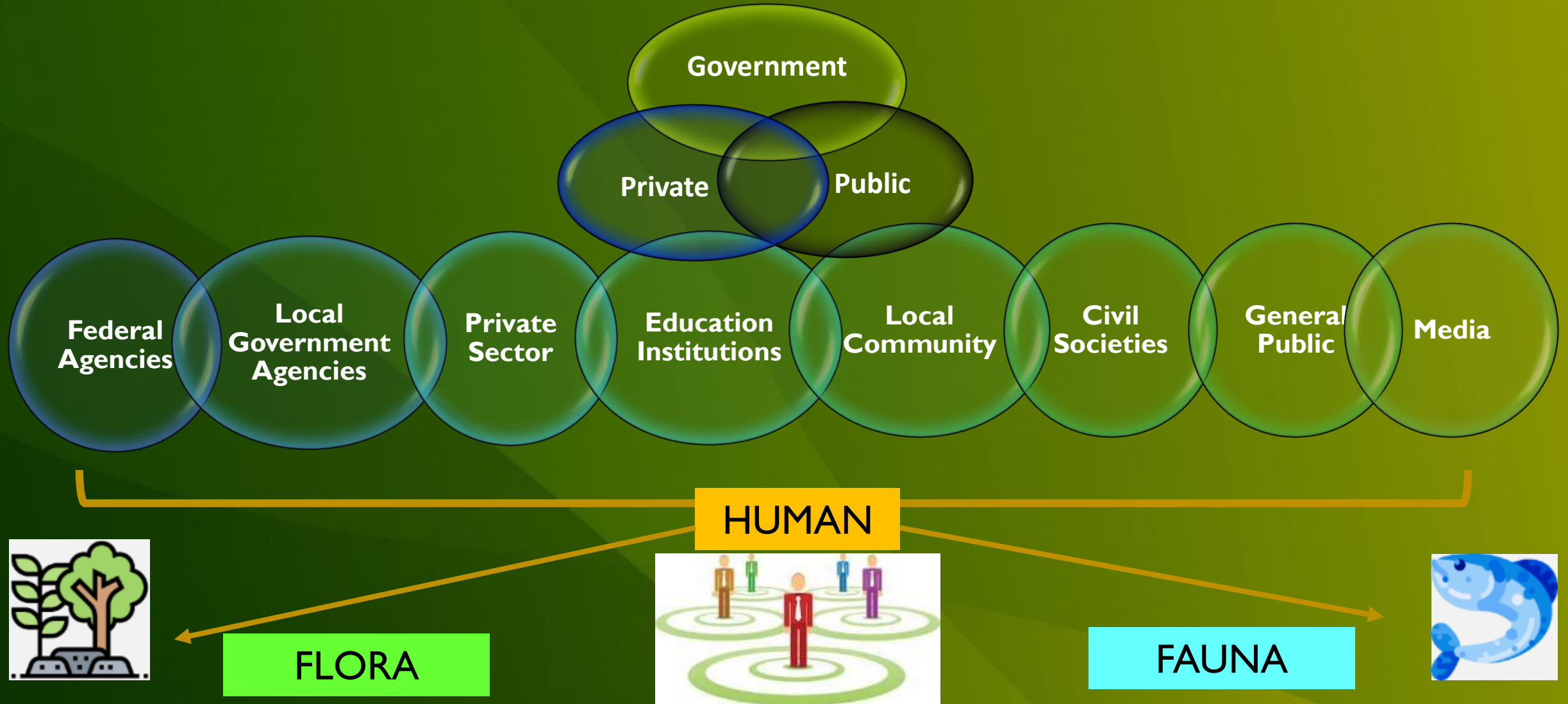
# RCP FOCUS AREA & APPROACH



**Balance : HARD APPROACH vs SOFT APPROACH vs HEART APPROACH**



# SMART PARTNERSHIP



FLORA



FAUNA



# GEC'S ART OF SMART PARTNERSHIP

## WIPSEAS

- **Water and River basin Education**
  - Reconnect to nature; river address
- **Identify and understand the local needs /issues**
  - Rapid environmental assessment, pollution mapping
- **Proactive consultation**
  - At all time and level;
- **Smart Partnership and stakeholder engagement**
  - Ownership; Public Private Partnership
- **Empowerment**
  - Training, capacity building,
  - Knowledge, skill , tools
- **ACTION**
  - HEART approach, bottom up; Nature Based solution
  - Protection, prevention, reduction, rehabilitation
- **Sharing & recognition**
  - Visibility, peer to peer sharing; recognition and award



# CORE ENGAGEMENT IN SMART PARTNERSHIP

## BE PROACTIVE : CITIZEN SCIENCE

- ☐ **BE a RIVER Ranger**
- ☐ **Connectivity : Know your River Basin and River Address**
- ☐ **Resource management – implement BMPs**
- ☐ **Optimize Resource Usage**
  - ☐ **Green Consumerism**
- ☐ **Minimize pollution/Waste Production**
  - ☐ **Manage pollution/Waste sustainably**
- ☐ **Nature Based Solution**

### 1. OWNERSHIP

Reconnect To Nature, Stakeholders, River Address

### 2. CONSERVATION

Protection, Restoration, Biodiversity Conservation

### 3. REHABILITATION

Water quality improvement, Habitat creation/enhancement,  
River flow/hydrology

### 4. POLLUTION REDUCTION

Recycling, Upcycling, Used Cooking Oil Collection

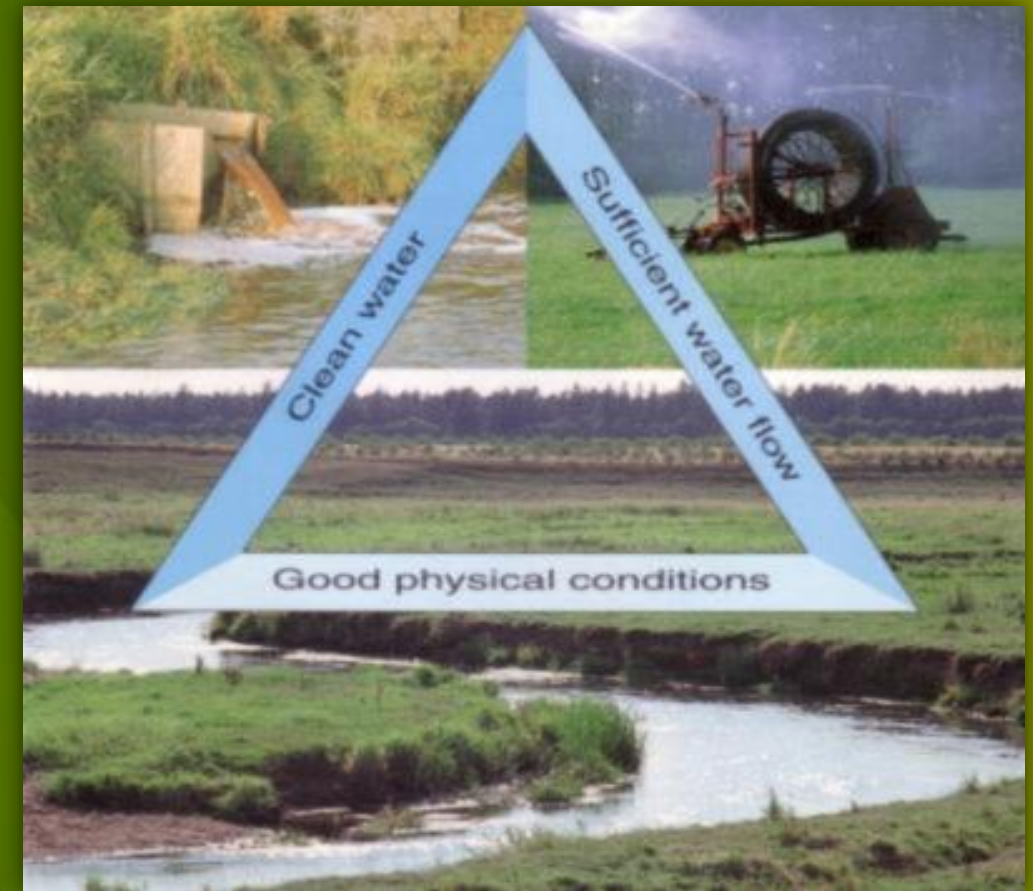
### 5. RIVER HEALTH : MONITORING

River Condition, Pollution

# 1. RIVER OWNERSHIP

- River as living entities
- Connectivity
  - Source to Sea
- Better understanding of IRBM
  - River basin, river system & drainage system
  - River Address
- Natural resource & pollution management
- Ownership
- River Health (Living River)
  - Work with the nature (and no against it)

## Healthy River





# 2. RIVER CONSERVATION

Sg. Bras, Klang Basin

BEFORE



AFTER





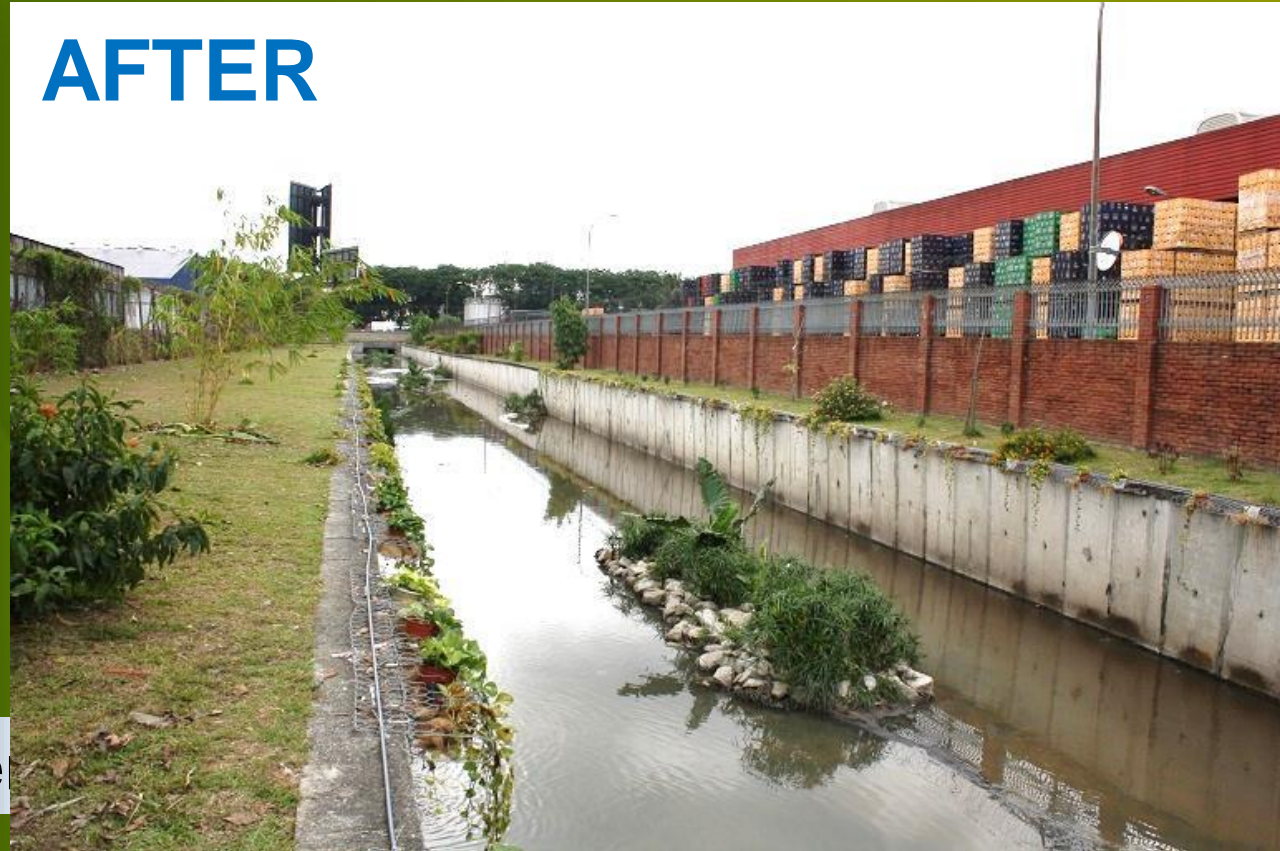
# 3. RIVER REHABILITATION

Sg. Way, Klang Basin

BEFORE



AFTER

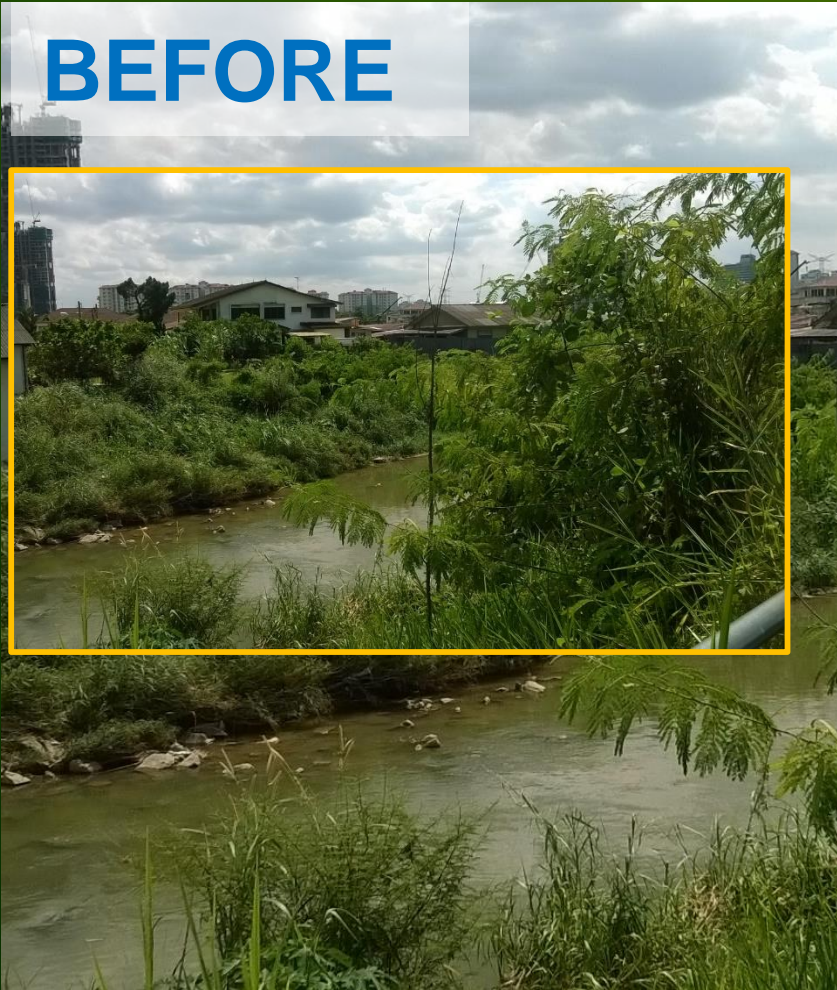




# 4. RIVER ADOPTION: COMMUNITY GARDEN

Sg. Klang, Klang Basin

BEFORE



AFTER



Global Environment  
Centre



UI  
envi  
group





# 5. WATER BODIES CLEAN UP



Drain → Lake → River

MY Drains Day



## 6. CITIZEN SCIENCE/MONITORING/AUDITING

### River BASIN ASSESSMENT

## ◆ Physical observations

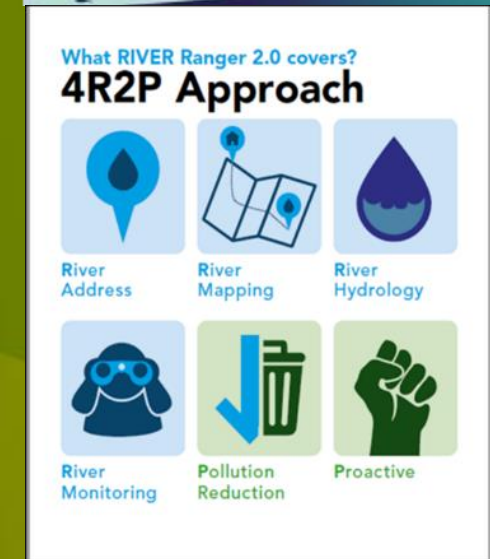
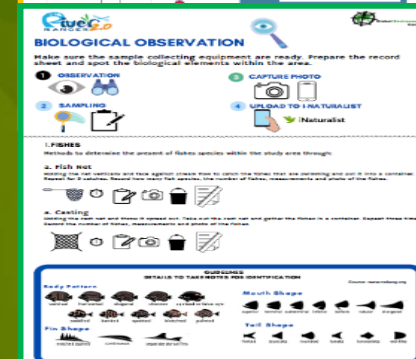
- Assess the overall health of our river using out 5 senses
- Study – hydrology, ecology & visual observations

## ◆ Chemical observation

- Water Quality Testing
- pH, DO, Temperature, Turbidity...

## ◆ Biological observations

- River water quality is identified based on the presence of living organisms in that area.
  - Fish & invertebrate
- Biodiversity (Mammals, insects, amphibian, reptiles and flora)





# 7. POLLUTION MANAGEMENT



Balance Top Down & Bottom Up Approach





# 8. WASTE to WEALTH

SMART Ranger  
Start Managing All Resources Today

Recycling Initiatives

Fat Oil Grease Trap

Used Cooking Oil Collection

Composting

Upcycling





# 9. DISASTER RISK MANAGEMENT

## • Drought

- Water conservation
- Water thimble
- Potable and Alternative water supply



## • Flood

- Flood Ranger
- Community based flood preparedness map
- Grab and H72H bag



# 10. ALTERNATIVE WATER SUPPLY

- Potable Water For Orang Asli



- Non Potable Water For Urban communities





# 11. NATURE BASED SOLUTION

## RIVER REHABILITATION Constructed Wetland Cell Initiative

Before (October 2019)



After (November 2019)



(November 2020)



- Wetland plants, natural filter, riffles and pools creation
- Improvement observed for river water quality and biodiversity aspects

## SLOPE MITIGATION

Soil stabilization, coir mat application and natural barricades



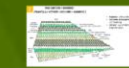
Before



After



Plot	Vetiver	Dillenia suffruticosa	Melastoma malabathricum	TOTAL
1	33	50	16	99



Before



After



Plot	Vetiver	Bamboo	TOTAL
2	85	100	185



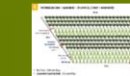
Before



After



Plot	Vetiver	Melastoma malabathricum	TOTAL
3	148	224	372



Before



After



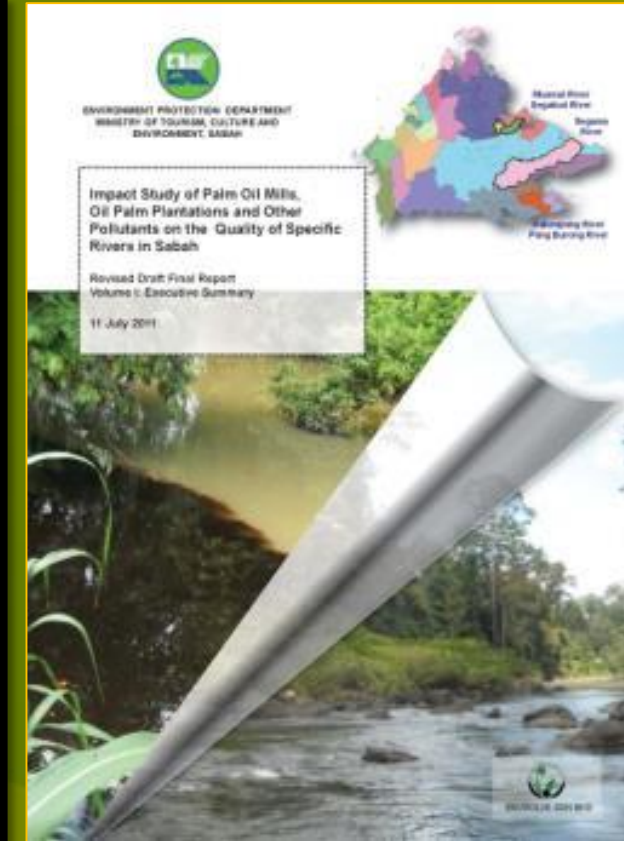
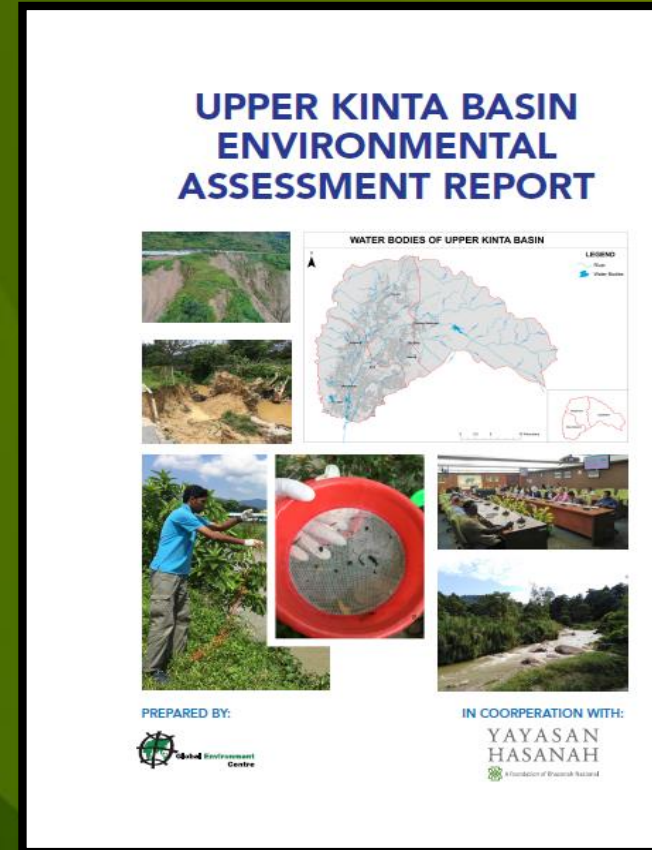
Plot	Vetiver	Melastoma malabathricum	TOTAL
4	127	76	203



# 12. STUDY & MANAGEMENT PLAN

Incorporate **Community Engagement** through:

- Forest Management Plan
  - UKB
- River Basin Management Plan
  - 4 Rivers In Sabah
- Environmental Assessment Study
  - Selangor, Perak, Penang, Johor

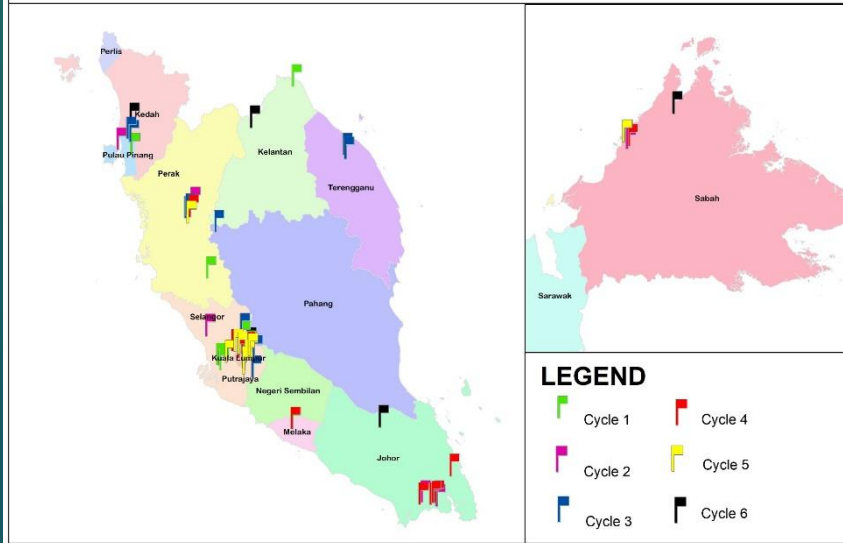


# 13. NATIONAL RIVER CARE FUND



- An initiative developed by Global Environment Centre as a long-term National Programme.
- Aim to improve the community awareness on the importance of the water/river and the environment
- NRCF soft launch : 26 Oct 2015

DISTRIBUTION OF NATIONAL RIVER CARE FUND (NRCF)



Cycle	Duration	Budget (RM)	Details
1	Mar – Dec 2016	100,000	6 grants – community 6 grants – programmes
2	Sep '16 – Aug '17	30,000	7 grants – community
3	Nov '16 – Nov '17	62,500	6 grants – community 3 grants _ programmes & Training
4	Nov '17 – Oct '18	75,000	7 grants – community 3 trainings/talks
5	Aug '18 – Nov '19	75,000	6 grants – community 1 talk
6	Oct '19 – Dec '20	60,000	5 grants – community 2 talks
<b>Overall</b>	<b>2016 - 2020</b>	<b>402,500</b>	<b>37 grants – community 9 grants - programmes 9 trainings/talks</b>



# 14. RIVER CARE TOOLS/MATERIALS

## 1. Reconnect to Nature

River Address

## 2. River Monitoring

River Report card, Lake report card, water testing kits, river auditing tools, pollution mapping, YSI meter (probe)

## 3. Water Conservation

DrH2O Kit ( Water Saving kits, Checklist, water Audit), Water Conservation Module

## 4. River Education

Interactive board (ROLPOP5)

Mobile River Care Unit (MRCU)

Interactive River Games

## 5. River Monitoring & Sharing

RIVER Ranger Website, WhatsApp's, Facebook, twitter, Instagram



RIVER Ranger  
Website



Educational  
Materials

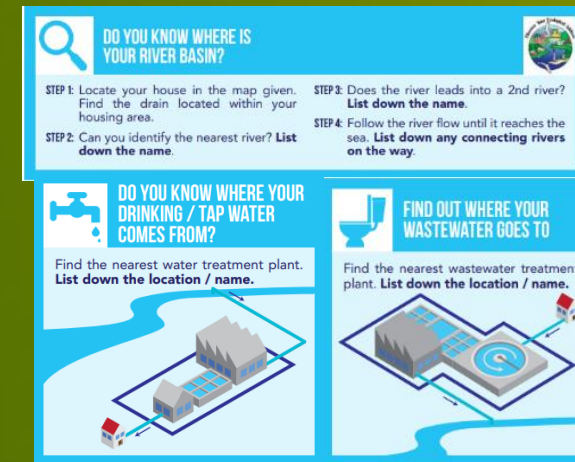
### SMART Ranger Kit



### RIVER Ranger Kit



### Education Kit



- **Handbook**
  - Urban River Management (W.A.T.E.R. Project)
- **Modules**
  - RIVER Ranger 2.0, SMART Ranger, FLOOD Ranger, Water Conservation
- **Booklet**
  - RIVER Ranger 2.0 Action Guidebook, Biological Monitoring, SMART Ranger, Water audit, ISLAND Ranger
- **Brochures, Leaflets, Report Card (River and Lake)**







# PARTNERS / STAKEHOLDERS

## ACKNOWLEDGEMENT



*healthier environment; better economy; more cohesive society*

THANK YOU



together we achieve more

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**#rivercarewecare**  
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**#riverranger; #smartranger; #drh2o**



Dr Kalithasan K  
010-3669772; kalithasan@gec.org.my