

Addressing issues related to water in Nigeria, Kenya, Ireland and India

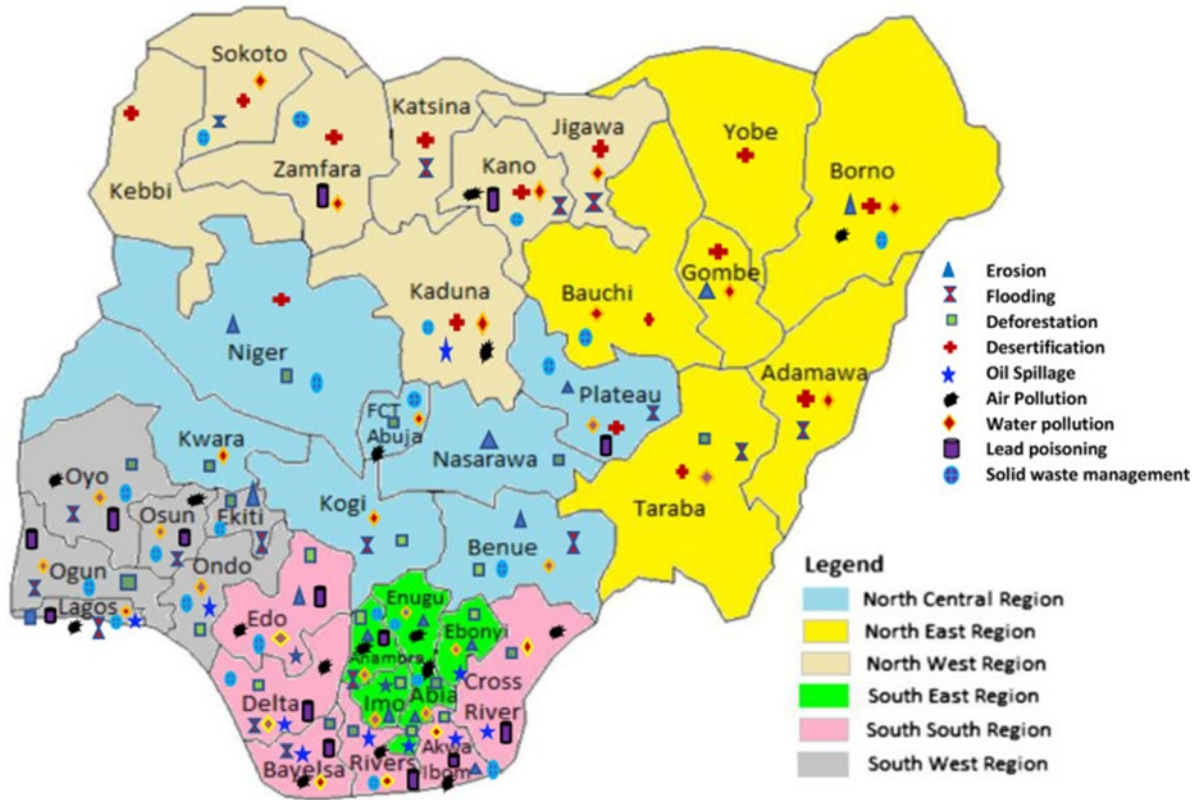


Team Naam

Margaret Awuor Owuor, Ngozi Oguguah, Ayan Deb, Mary Ryan
Beahrs Environmental Leadership Programme

7th October 2021

Water Issues/Situation in Nigeria



Map of Nigeria showing different locations and environmental problems. (Hyellai *et al.*, 2021).

- Nigeria is the most populous African country
- Population: c. 202 million people
- Environmental health issues include
- Drinking water
- Pollution
- Droughts
- Floods

(Mbamali *et al.*, 2020).

Water Issues/Situation in Kenya



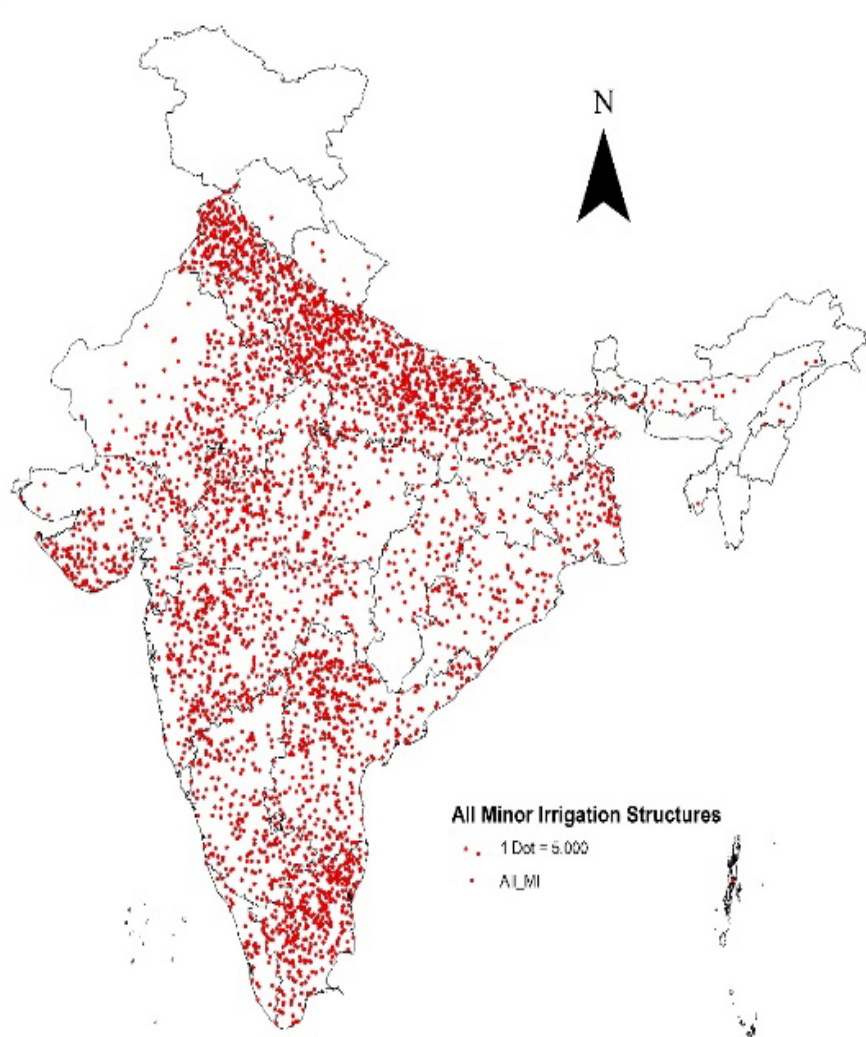
- The population of Kenya stands at **50 million**
- **59%** access safely managed and basic service drinking water
- **32%** rely on unimproved water sources, such as ponds, shallow wells and rivers,
- **48%** lack access to basic sanitation solutions

Water Issues/Situation in Ireland

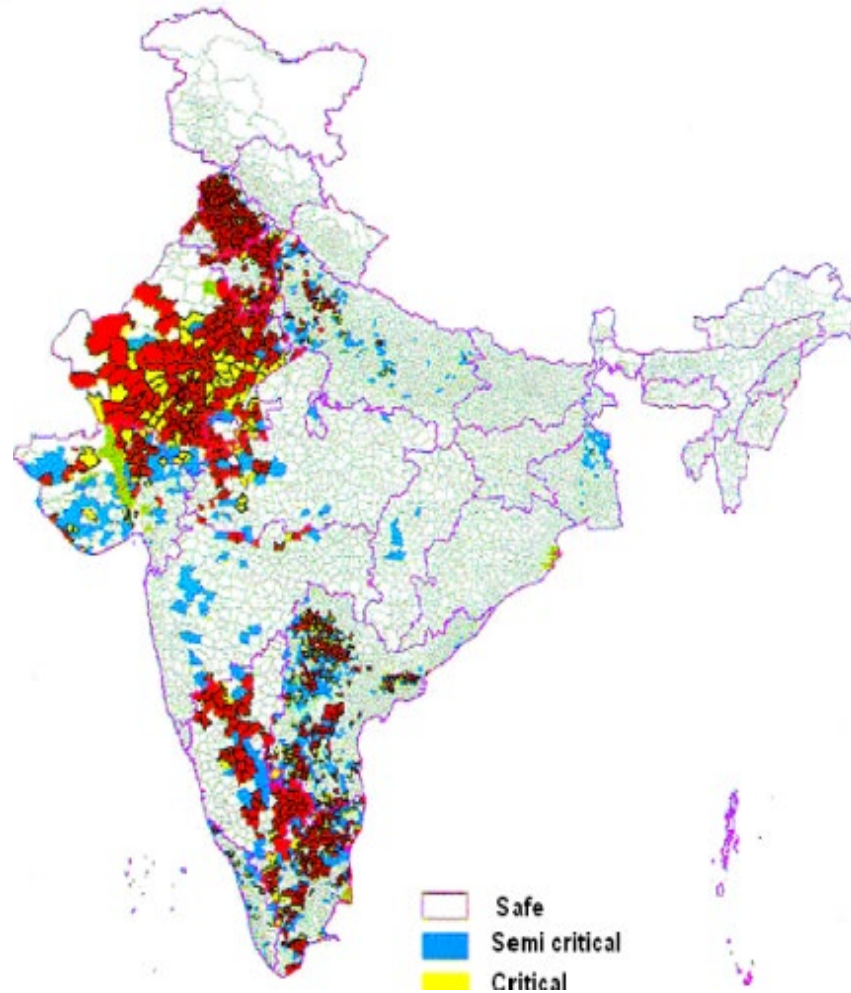


- Ireland's population: 5 million
- Failing to meet EU Water Framework Directive targets
- Nutrient levels from **agriculture** and **waste water** are too high
- Loads of **total N** and **total P** from rivers to marine environment are increasing

Water Issues/Situation in India



World's largest GW user
>20 m wells, tubewells
Annual pumping: 250-300 km³



Energy and Agriculture policies
drive GW over-exploitation

- India: **1.2 bn.** population
- **65%** live in rural regions
- **86%** small and marginal farmers
- Agriculture generates **17.34%** of exports
- **>60%** of irrigation depends on ground water

Addressing Water quality issues in Nigeria, Kenya, Ireland, India



Nigeria:
Water not potable
due to urban waste



Ireland:
Eutrophication
(excess nutrients)
from agriculture &
waster water

Access to clean water,
water quality degradation, and
water use
are
community level issues!



Kenya:
Siltation due to
erosion caused by
cattle access to water
and tree-felling



India:
Energy and Agriculture
policies drive Ground Water
over-exploitation

Issues, Objective, Methodology, Framework...

Issues

- Change community practices/behaviours in relation to water
- Water quality/use is complex - but so are scientific communications!

Objective

Incorporate behaviour change theory in simple but effective water sustainability communications

Methodology

Examine literature on Behaviour Change and Behavioural Psychology theories

Develop an understanding of theories and practices around behaviour change communication

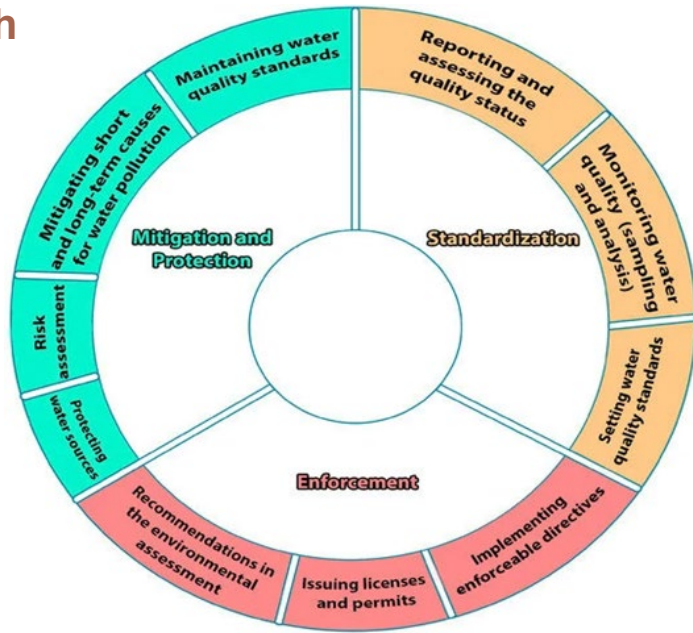
Build a generalised behavioural communications framework

Select one case study area

Framework

Based on '**Principles of Behaviour Change Communication**' (UK Cabinet office), incorporating behaviour change theories <https://gcs.civilservice.gov.uk/publications/the-principles-of-behaviour-change-communications/>

Systems Approach

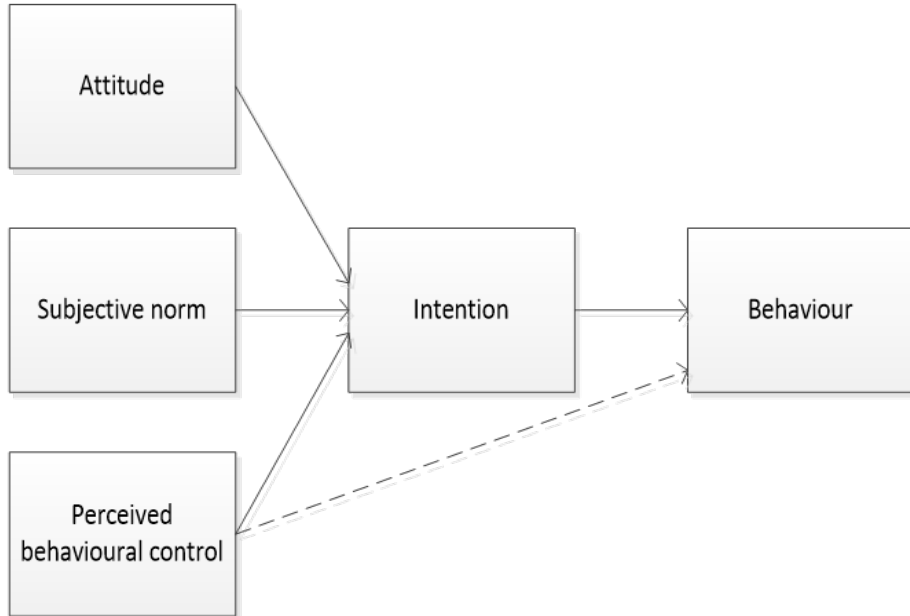


Theory of Change

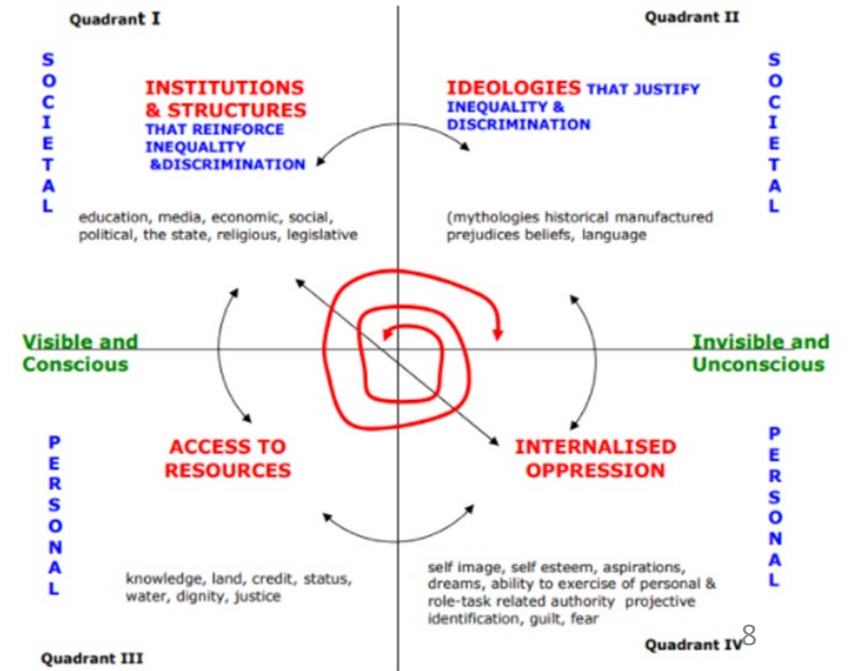
the Theory is adapted to lapted from 5



Theory of planned behavior



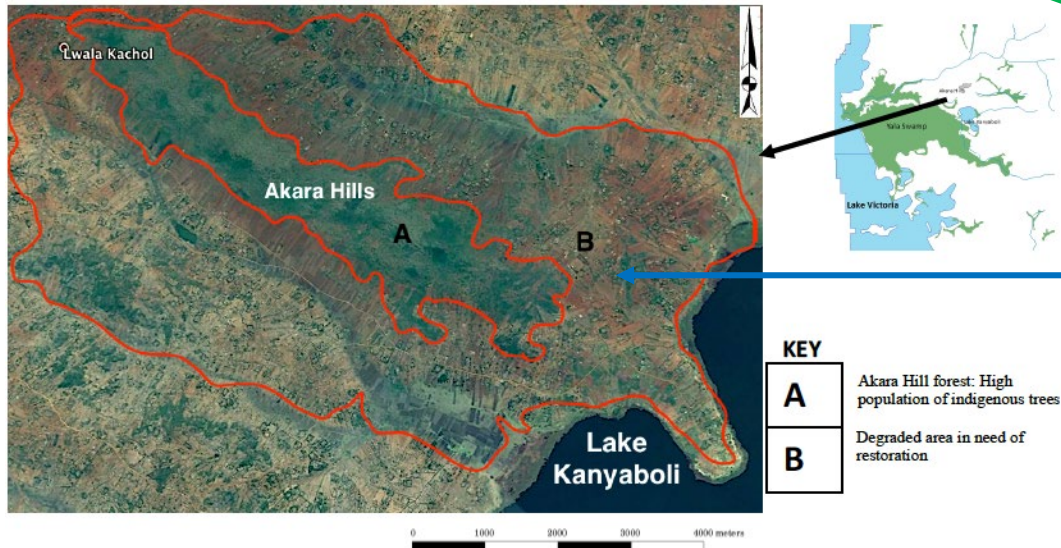
Group relations



Case study : Akara Hills



- Located in Siaya County, Alego South Central Ward, Kenya.
- Catchment area for Lake Kanyaboli, an Oxbow lake
- Home to the Sitatunga, the haplochromine fish species



Challenges of siltation, riparian degradation, cattle defecation and de-forestation



Figure 1 : Map showing the zonation of Akara Hills ecosystem (Moses 2018)

NAAM Water behaviour change communication (WBCC) framework: Linking Theory of Change, Systems Approach, Theory of Planned Behaviour and Group Behaviour

System Actors

Ministry
Water services mgt. board
Water service users assoc.
Consumers: community

System levers

Policies
Regulations
Enforcement
Research
Extension

Behaviour change levers

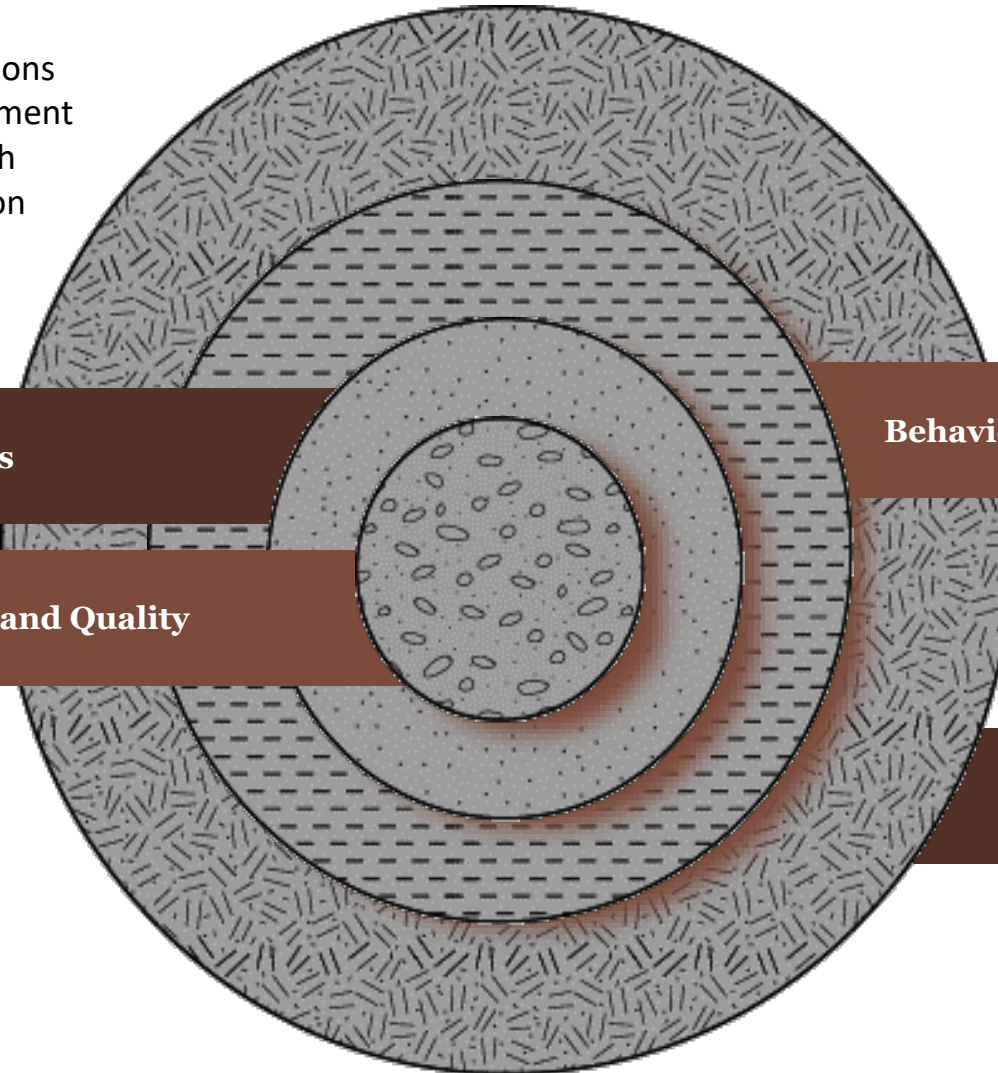
Participatory approach
Attitudes
Social norms
Perceived behavioural control
Group Relations
Education
Awareness
Advocacy

System actors and levers

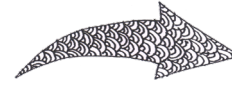
Behaviour change lever

Challenge: Access to water and Quality

Behaviour change Interventions



Designing interventions – Akara hills water quality improvement



Measures:

Farmers: Cattle access to water → **riparian farming**, cattle access, bank de-stabilisation

Community: De-forestation → **tree-planting**, tree-nurseries, provide seeds



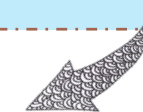
Behaviour Change Communication (BCC) tools:

Improving intention to adopt through

- Changing attitudes, social norms
- Participatory action - engaging leaders separately
- - engaging school children
- Improving Knowledge - capacity building/education
- Forming groups - building self esteem & community esteem
- [Evaluation and adaptation]

Actors:

- Relate relevant policies/ supports to local issues
- Leverage support from government agencies
- Leverage collaboration between system stakeholders



Communication challenges:

Science communications tend to focus on messages

BUT

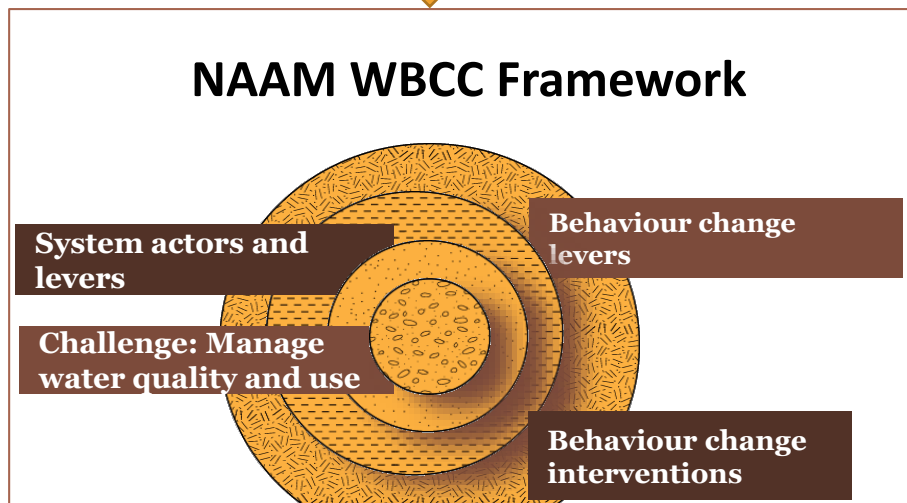
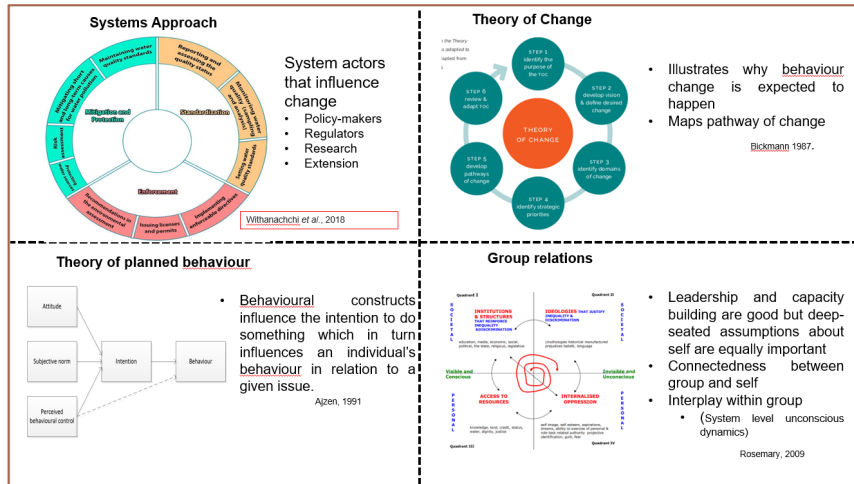
Focus on people/communities who can implement change



Naam Campaign Plan

Target	Tree-planting				Riparian farming		
	<u>Behavioural constructs</u>	<u>Activity</u>	<u>Target group</u>	<u>Stake-holders</u>	<u>Activity</u>	<u>Target group</u>	<u>Stake-holders</u>
Motivation	Attitudes	Financial incentives	Village leaders	Funders, NGOs, Government	Role plays	Village leaders, community groups	Farmers Association
	Social norms				Education programme		
Knowledge/ education		Highlight issues and solutions	Village leaders	County Government leaders		Farmers, Loggers	
	Perceived behavioural control	Practical tree nursery demonstration	Farmers, Community groups School children	Ministry of Forestry Ministry of Agriculture	Practical riverside demonstration (best and bad practice)	Farmers, Community groups	Ministry of Agriculture
					Bio char/ Compost		
Self & community esteem		Practical Storytelling					
	Group relations	Develop local videos	Schools, Farmers, Community groups	Primary schools School Board of Management	Group relations Practical Education	Farmers, Community groups	
Evaluation & Adaptation	Planning and perception of processes	Brainstorming	All those involved in water/natural resources management	All those involved in water and natural resources management	Brainstorming	All involved in Agricultural Management	
		What worked?			What worked?		
		How to improve?			How to improve?		

General Application: different issues... different contexts.....

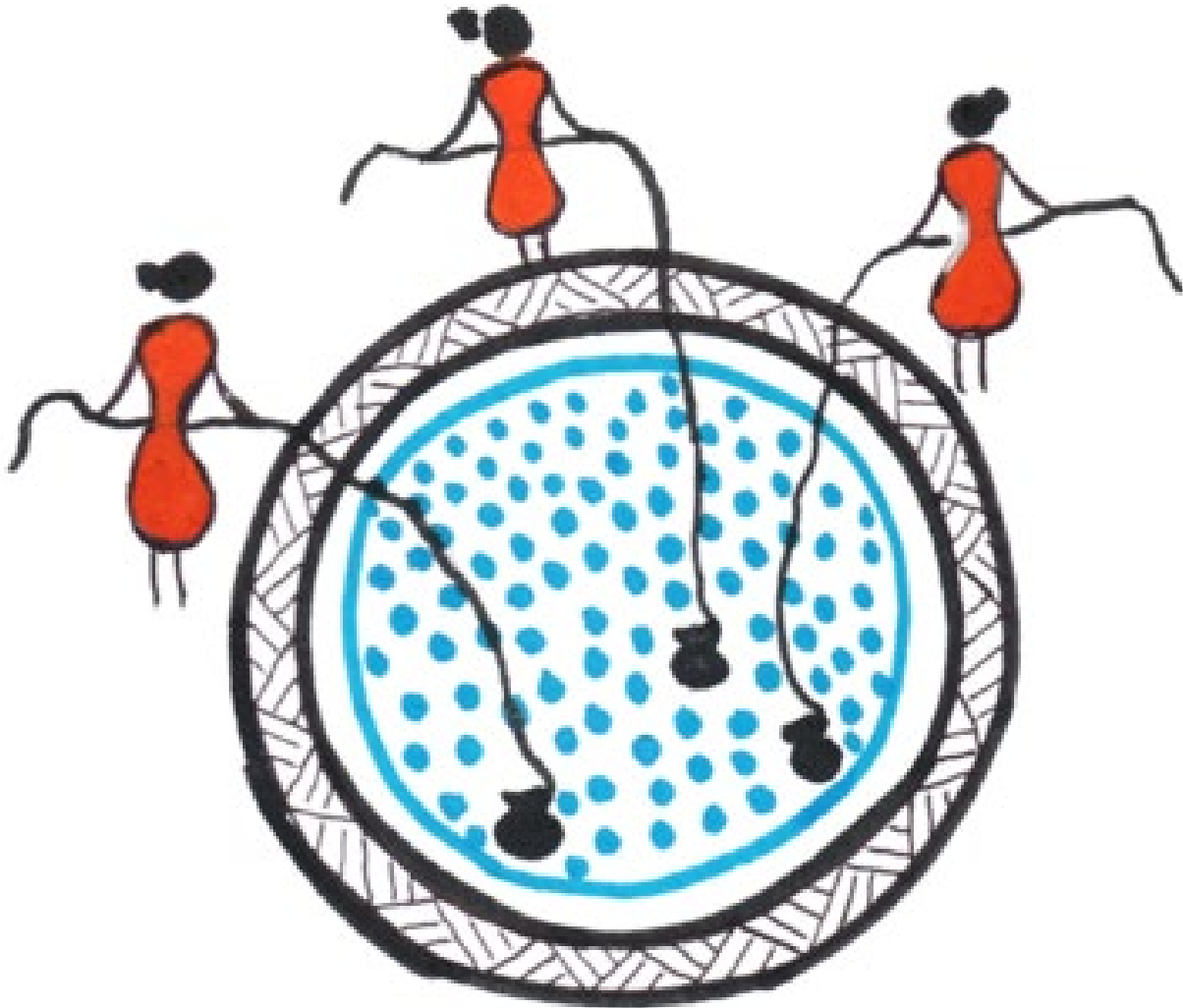


Objectives:

Mitigation of damaging behaviour + Pro-environmental behaviour
(Reduce cattle access to water) (Re-forestation)

Generic behavioural changes that facilitate practice change

- Understand the 'system' and how activities impact on the system
- Knowledge of causes of environmental degradation
- Positive attitude change
- Environmental 'farmer champions' emerging
- School-children empowerment



Soharai painting from Jharkhand and Odisha, India

From the NAAM team.....

Nigeria: Dalu

Kenya: Asante Sana

Ireland: Go raibh maith agat

India: Dhanyawad

Thank you!