

MALAYSIA

Area: 330,000 km²

Urbanization 75%

GDP/ person USD 12,900
(2022 estimate).

Water supply :

100% Urban areas receive 24/7 piped water

Urban Sanitation:

sewered : >70%

Septic tanks 20%

Others : 10%



MALAYSIA:

50 years ago



Direct discharges



Bucket toilet



Polluted rivers



Crumbling STPs



Sewer overflows

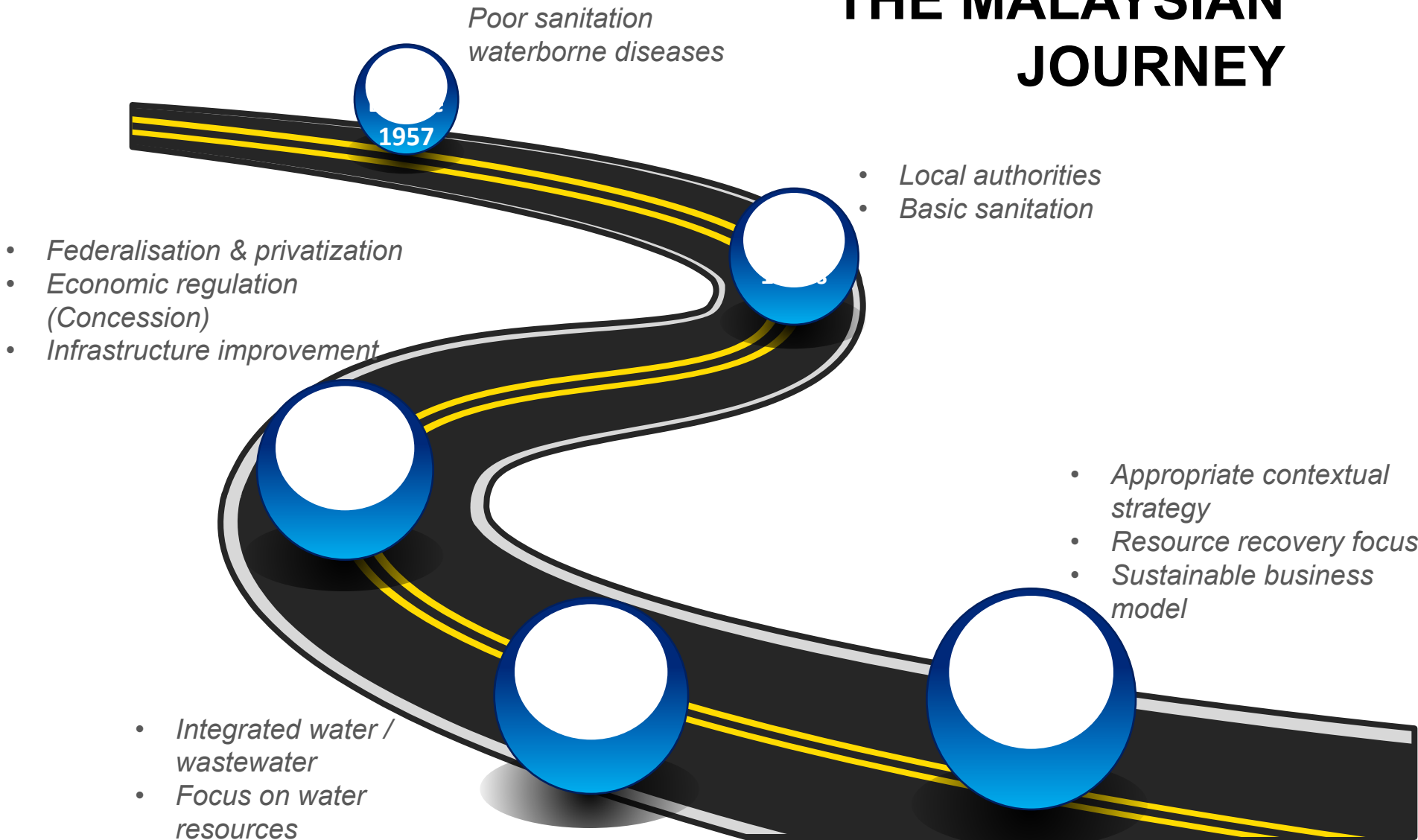


Today



We must be doing something right !

THE MALAYSIAN JOURNEY



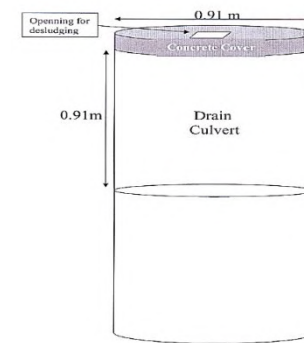
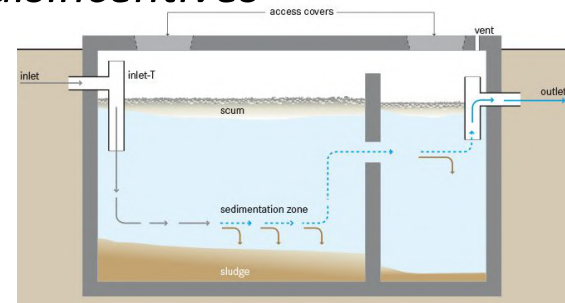
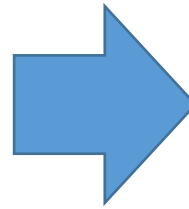


- Open defecation
- Direct discharges
- Insanitary systems

1970s & 1980s:

BASIC SANITATION PROGRAM

- Awareness programme
- Revolving fund
- Legal measures
- Incentives / disincentives

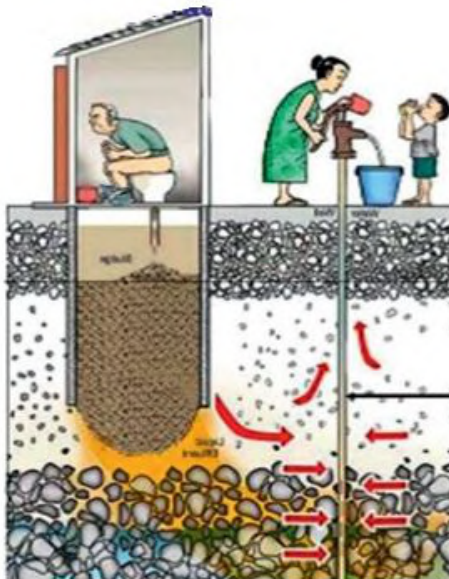


**Improved pits
Septic tanks**

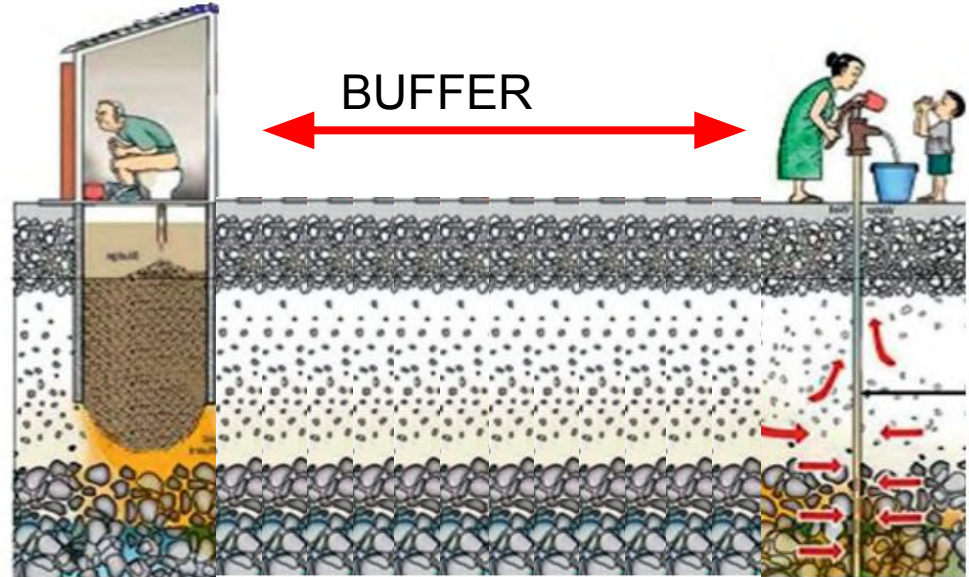
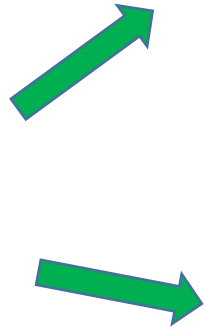
1970s & 1980s:

RURAL SANITATION PROGRAM

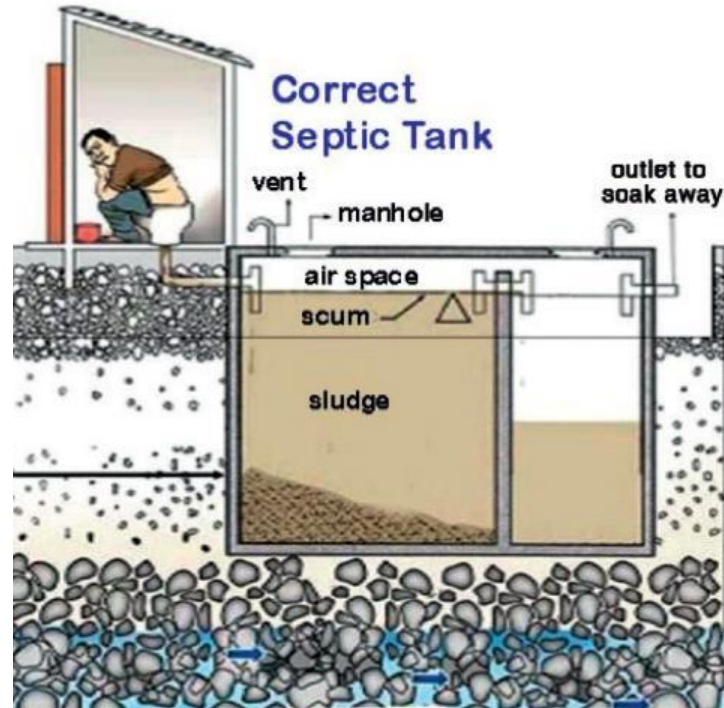
- relocation of wells / toilets
- upgrade to proper septic tanks
- subsidised through supply of materials



Credits; MoE, Philippines



Credits; MoE, Philippines



Credits; MoE, Philippines

URBAN AREAS (pre 1994)

SANITATION / SEWERAGE
MANAGEMENT UNDER
LOCAL AUTHORITIES



FOCUS

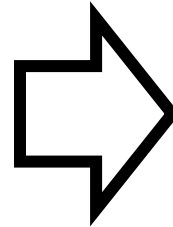
- Provide toilets
- Eliminate ineffective systems

Areas neglected

- Increasing numbers of septic tanks
- Quality of design & construction
- Sludge overflows, desludging on demand
- No sludge treatment
- Grey water

MAJOR CHANGE

**SANITATION / SEWERAGE
MANAGEMENT UNDER LOCAL
AUTHORITIES**



**FEDERALISATION &
PRIVATISATION**

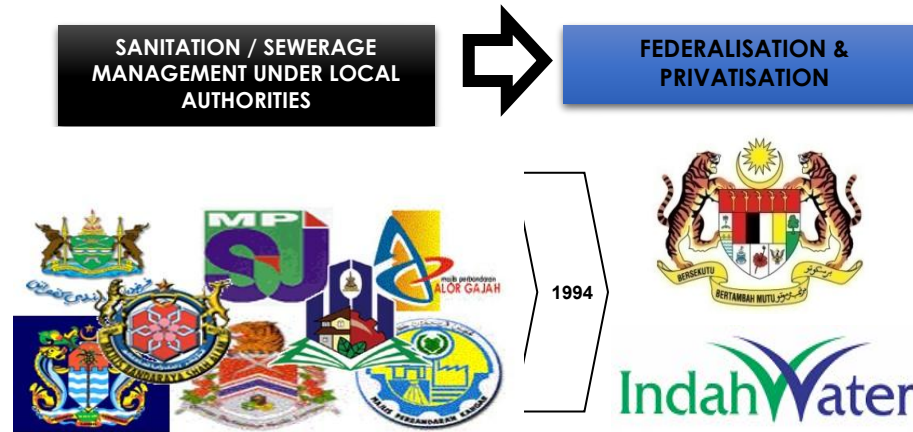


1994



IndahWater

MAJOR CHANGE



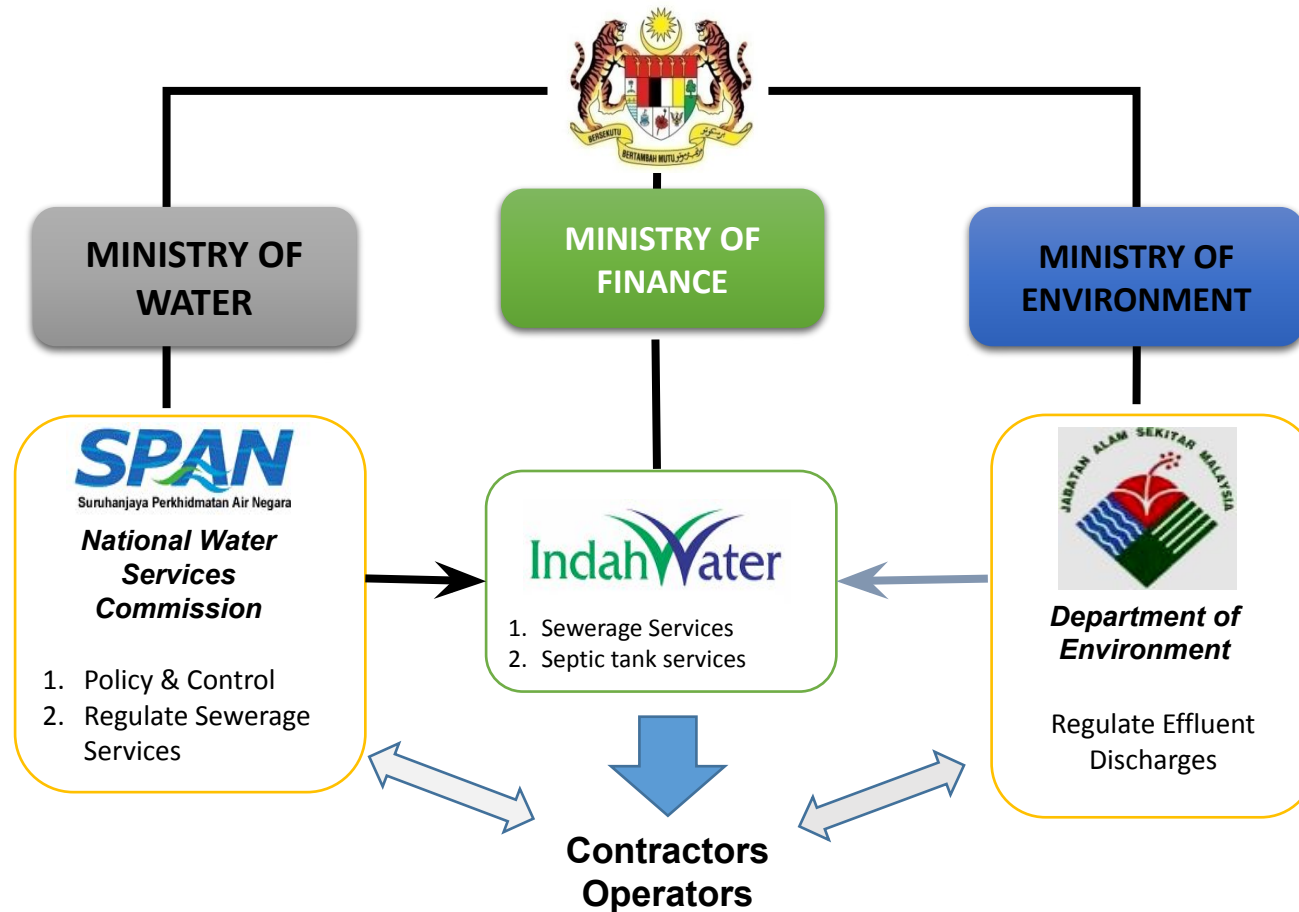
Local Authorities :

- ***resolved basic sanitation***
- ***beyond that, not effective***

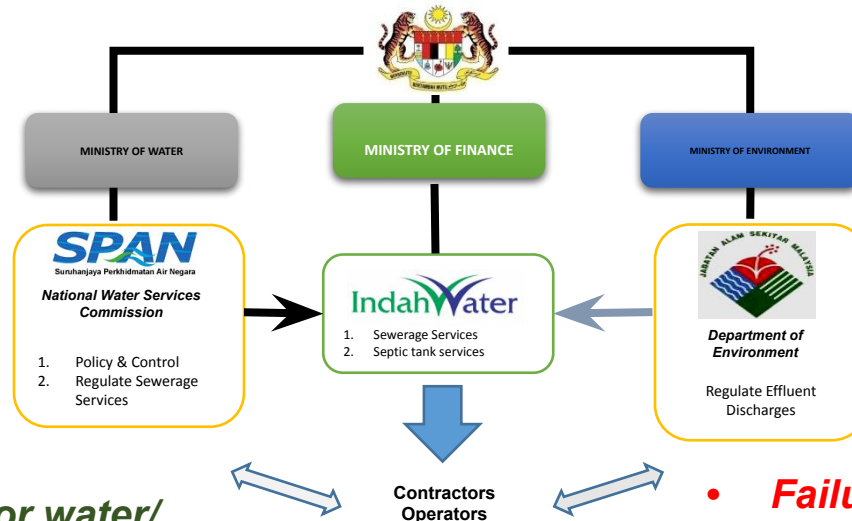
Centralised governance:

- ***Quick results***
- ***Uniform improvements***
- ***Co management
(sewerage / sanitation)***
- ***Private sector involvements***

REGULATORY ARRANGEMENTS



REGULATORY ARRANGEMENTS

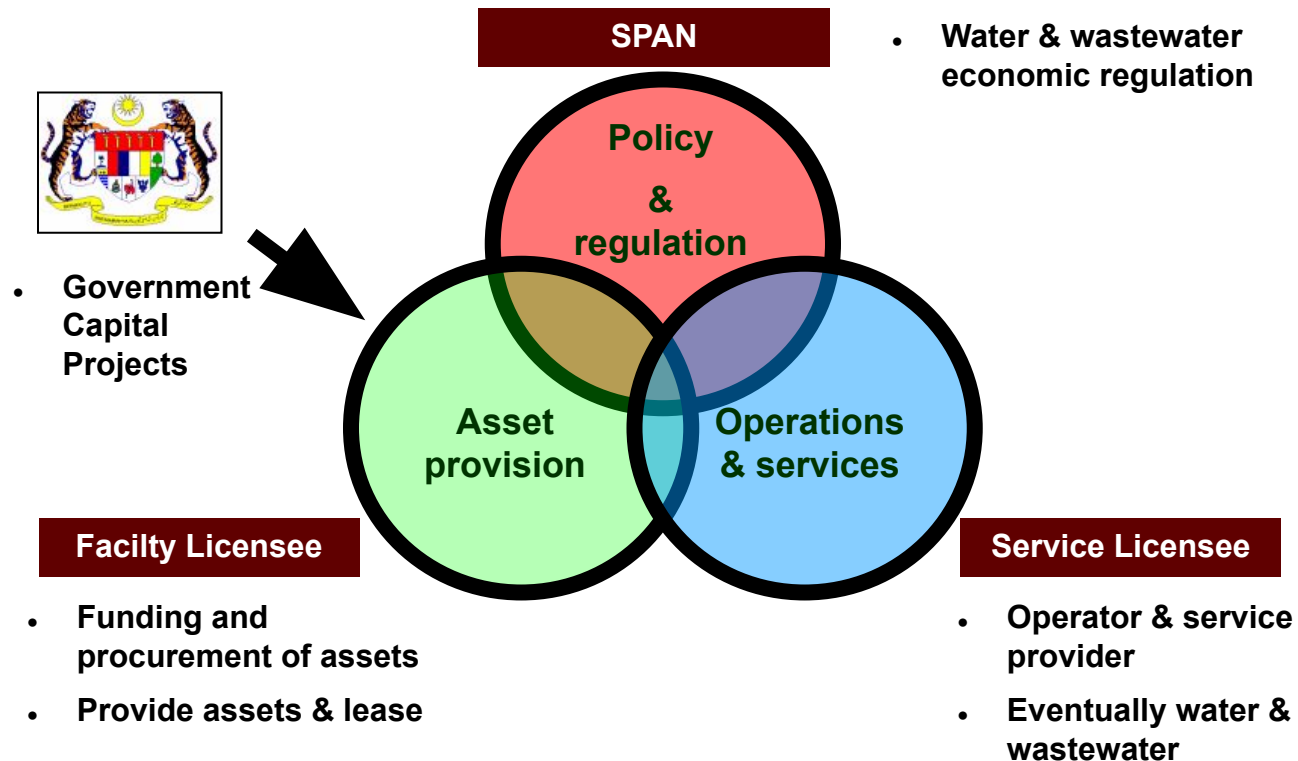


- **Common ministry for water/ wastewater**
- **Legislative bite**
- **Centralised common regulator**
- **Entire sector under common governance**
- **Performance indicators for all levels**

- **Failure of privatisation**
- **Water / sewerage separated at operator level**
- **Too centralised: Local Municipalities left out**

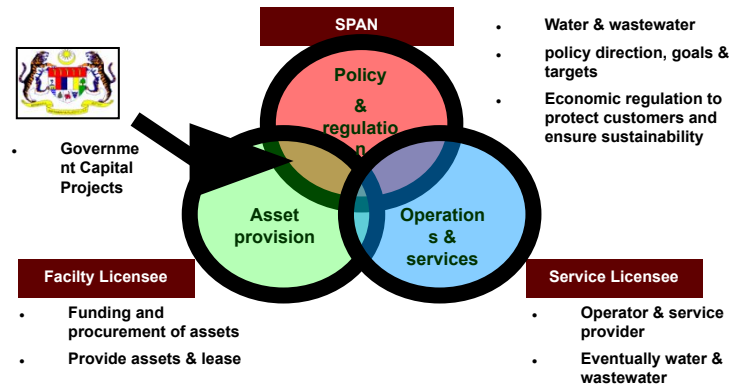
Water Services Industry Act

- Institutional arrangements



Water Services Industry Act

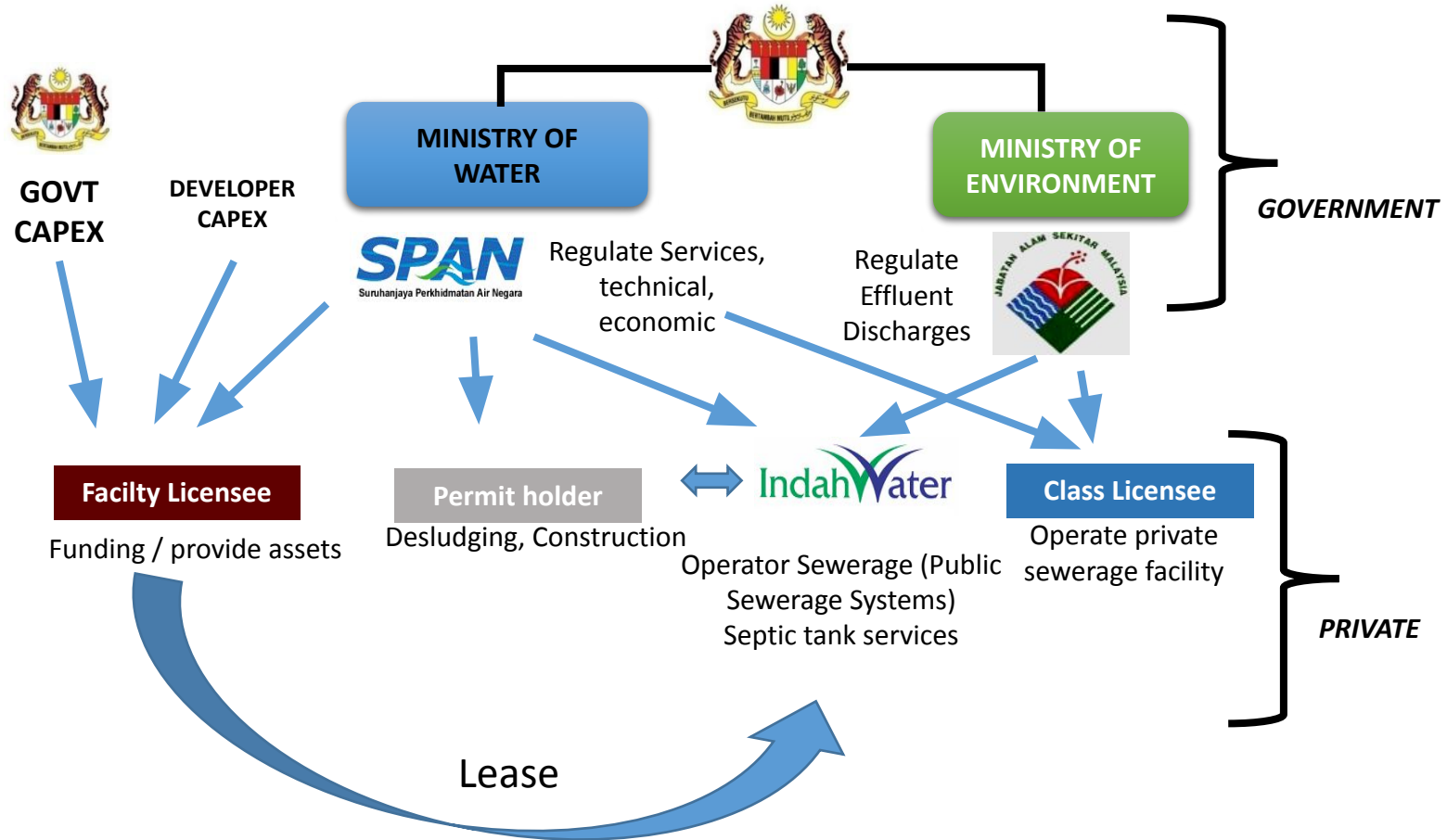
- Institutional arrangements



- *Asset light*
- *Legislated separation of roles*
- *Licencees*
- *Business plan approach*

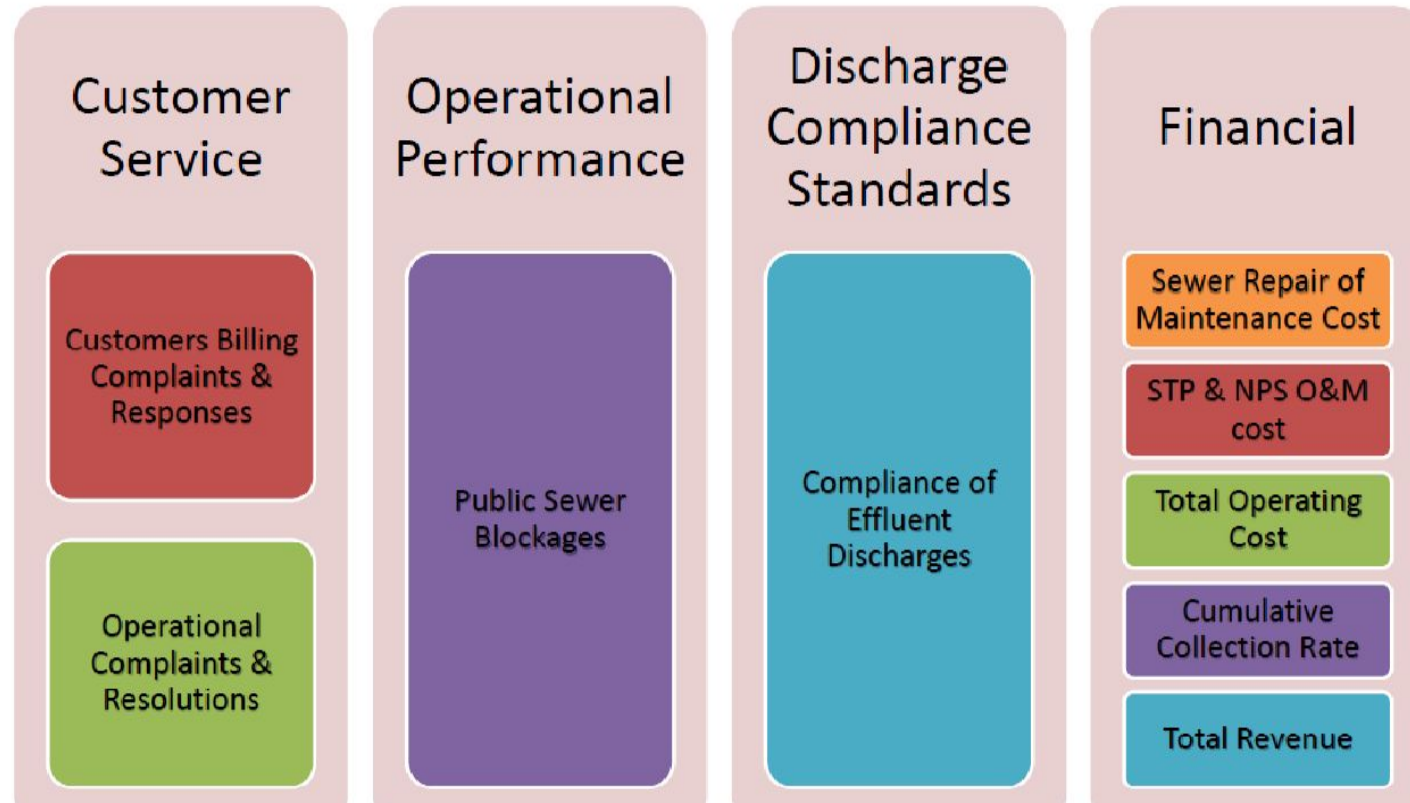
- *Only partly effective*
- *Sewerage assets not under FL*
- *Integration of water / wastewater operators has not happened even after 14 years*
- *Stagnant tariff for last 28 years*

OVERALL SANITATION GOVERNANCE



- *Vendor development*
- *Capacity building*

AREAS OF REGULATION



EFFLUENT DISCHARGE STANDARDS

Based on location:

Standard A : Upstream of drinking water intake

Standard B : Downstream of drinking water intake

Time Based :

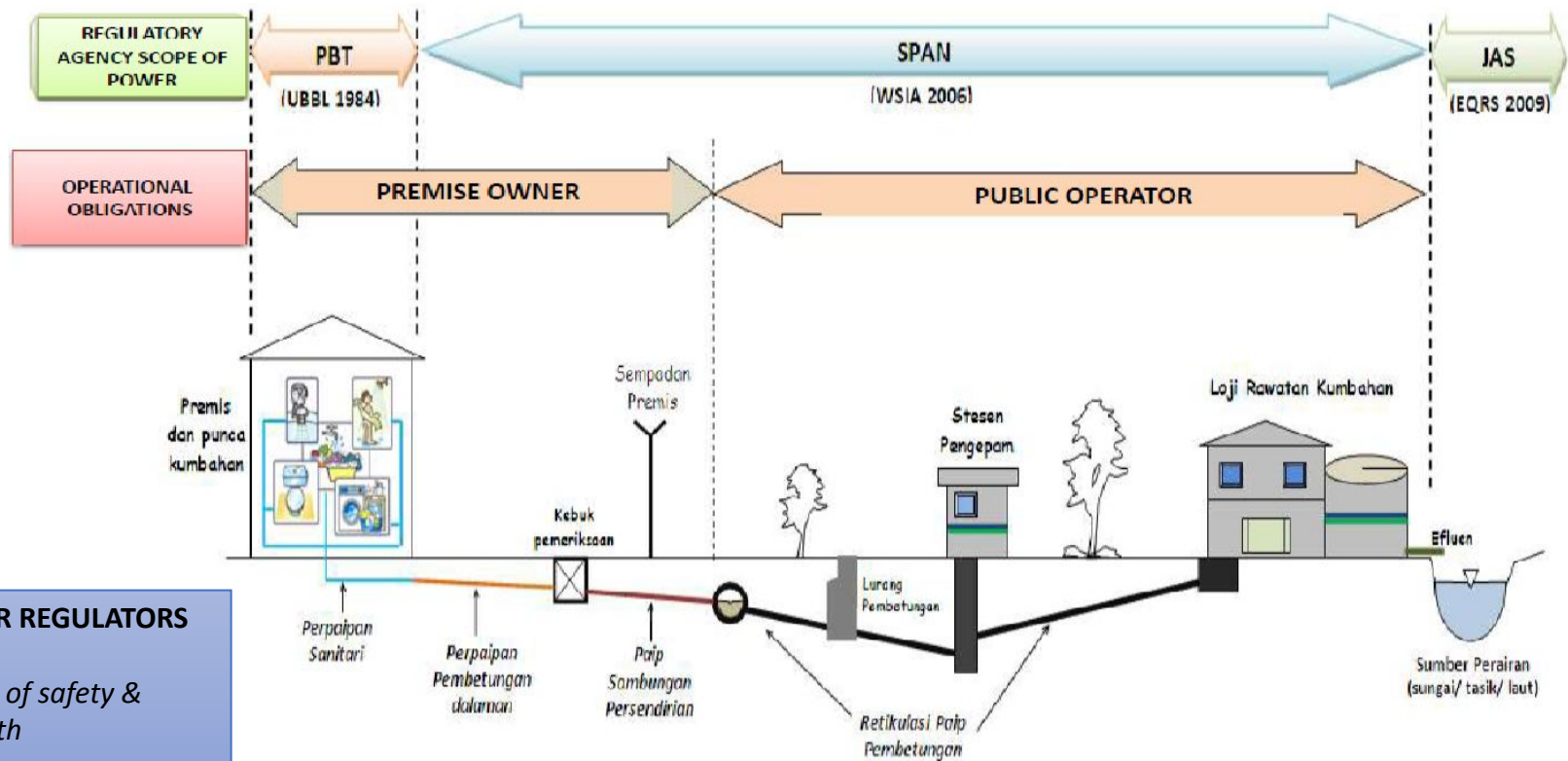
- Gradual application of more stringent standards

Flexible :

- Legacy systems

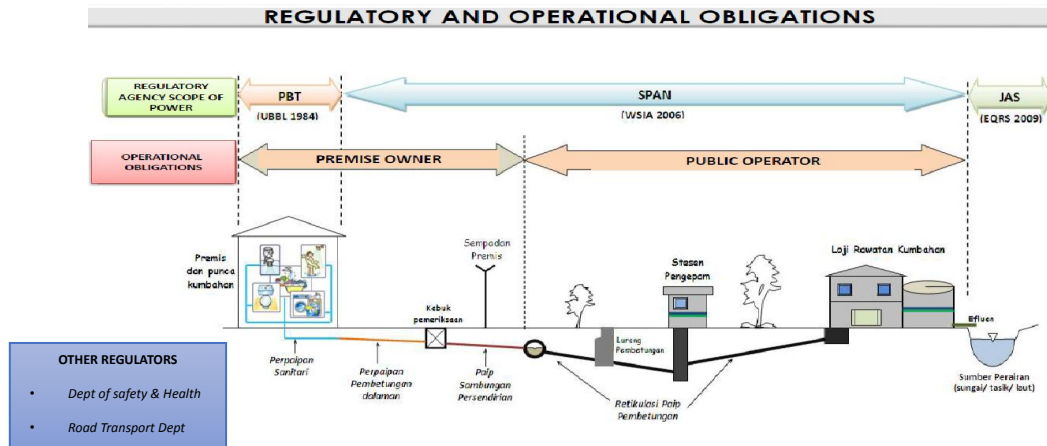
- Licence to contravene

Regulatory and operational responsibilities



OTHER REGULATORS

- Dept of safety & Health
- Road Transport Dept

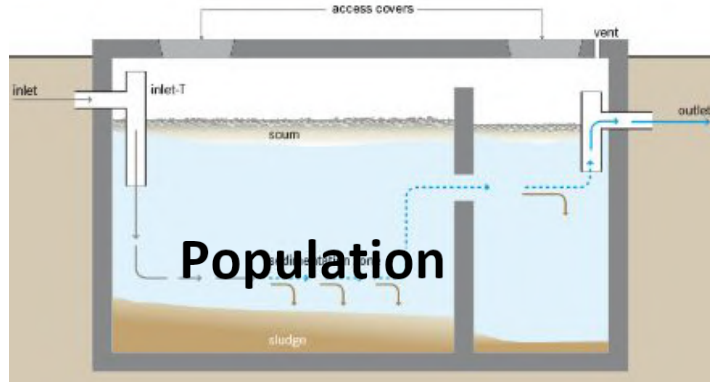


- **Clear demarcation of roles**
- **Ownership, regulatory, operational**
- **Local Authority, Sewerage regulator, operator, owner**

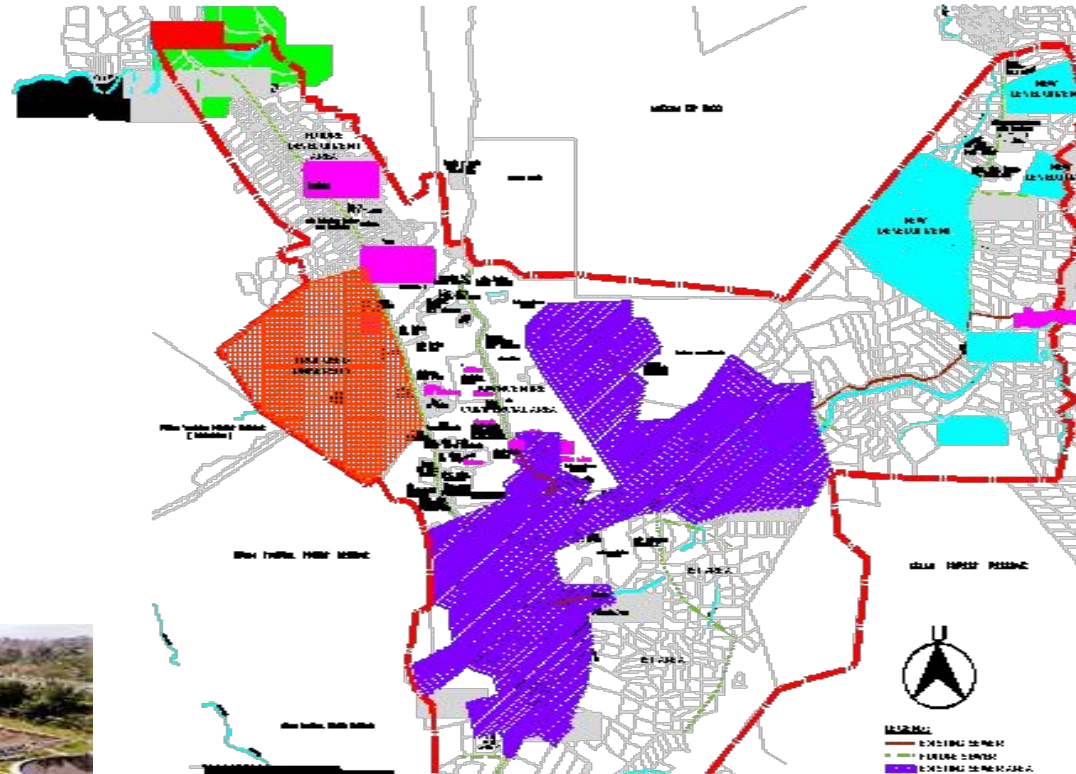
- **Still some grey areas**
- **Not end to end**

PLANNING REALITY : HYBRID SOLUTIONS

ON SITE SYSTEMS



DECENTRALISED



CENTRALISED



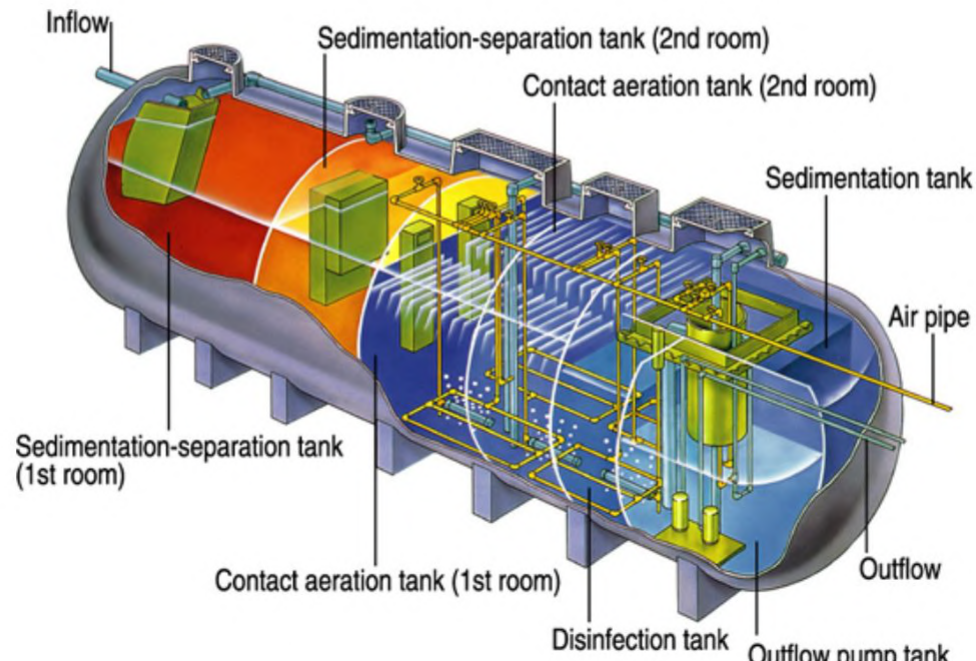
ON SITE SYSTEMS

- ✓ Prefabricated systems
- ✓ Standard design
- ✓ Certification system



DECENTRALISED SYSTEMS

- ✓ Approved systems, products
- ✓ Accredited suppliers, contractors
- ✓ Prefabricated systems
- ✓ Regular maintenance by service contractors
- ✓ Effluent compliance

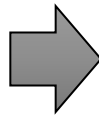


DESLUDGING :

1994 SHIFT

FROM (Local Authority)

- Demand emptying
- Payment on service
- No treatment



CONCESSION (Utility company)

- 100% scheduled emptying (2 year intervals)
- Monthly Tariff
- Treatment of all sludge

ISSUES

- *Database*
- *Tankers*
- *Treatment facility*
- *Refusal*

**Success rate
30%**

DESLUDGING

POST 2008

- Liberalisation
- Owner may call any permit holder
- One off charges
- Sludge treated by utility

NEW REGULATION

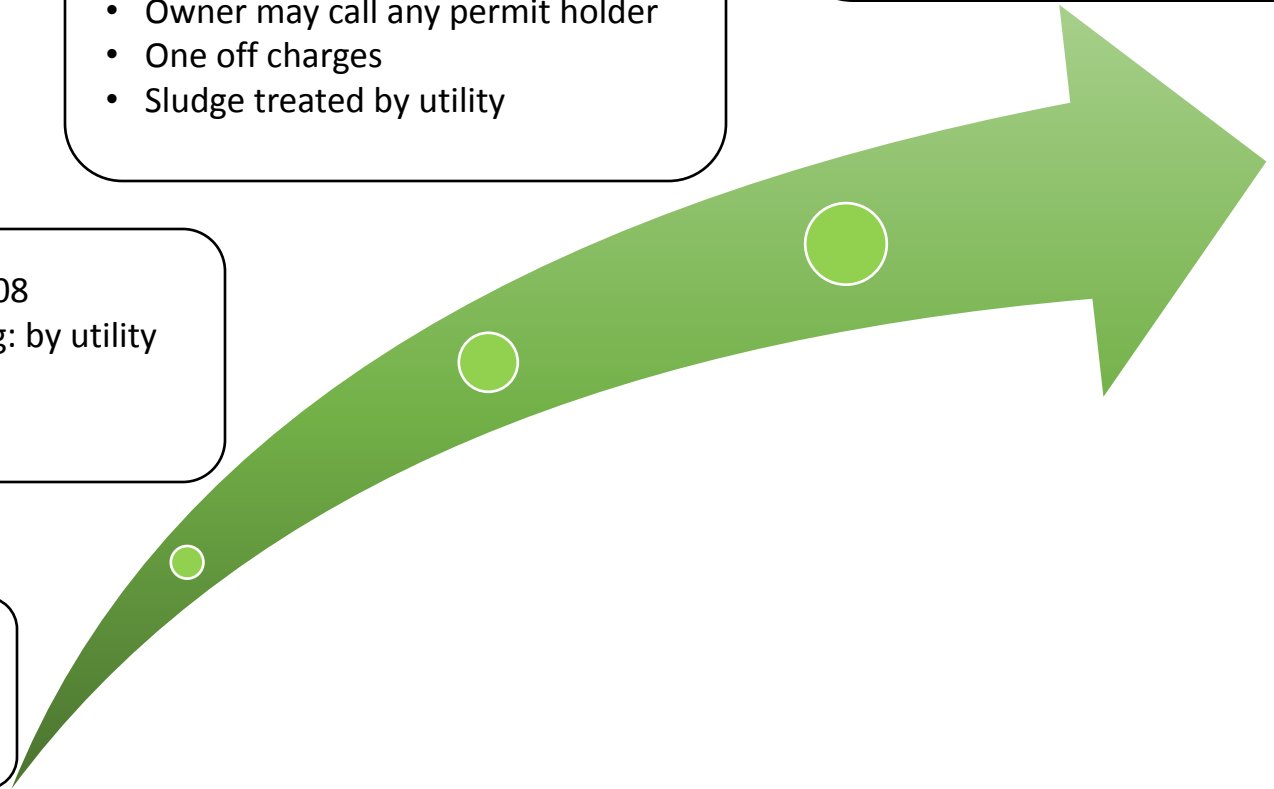
- Utility to schedule
- Outsource emptying / transport to permit holders
- Sludge treated by utility
- Monthly tariff

1994 TO 2008

- Scheduled Emptying: by utility
- Monthly tariff
- Sludge treated

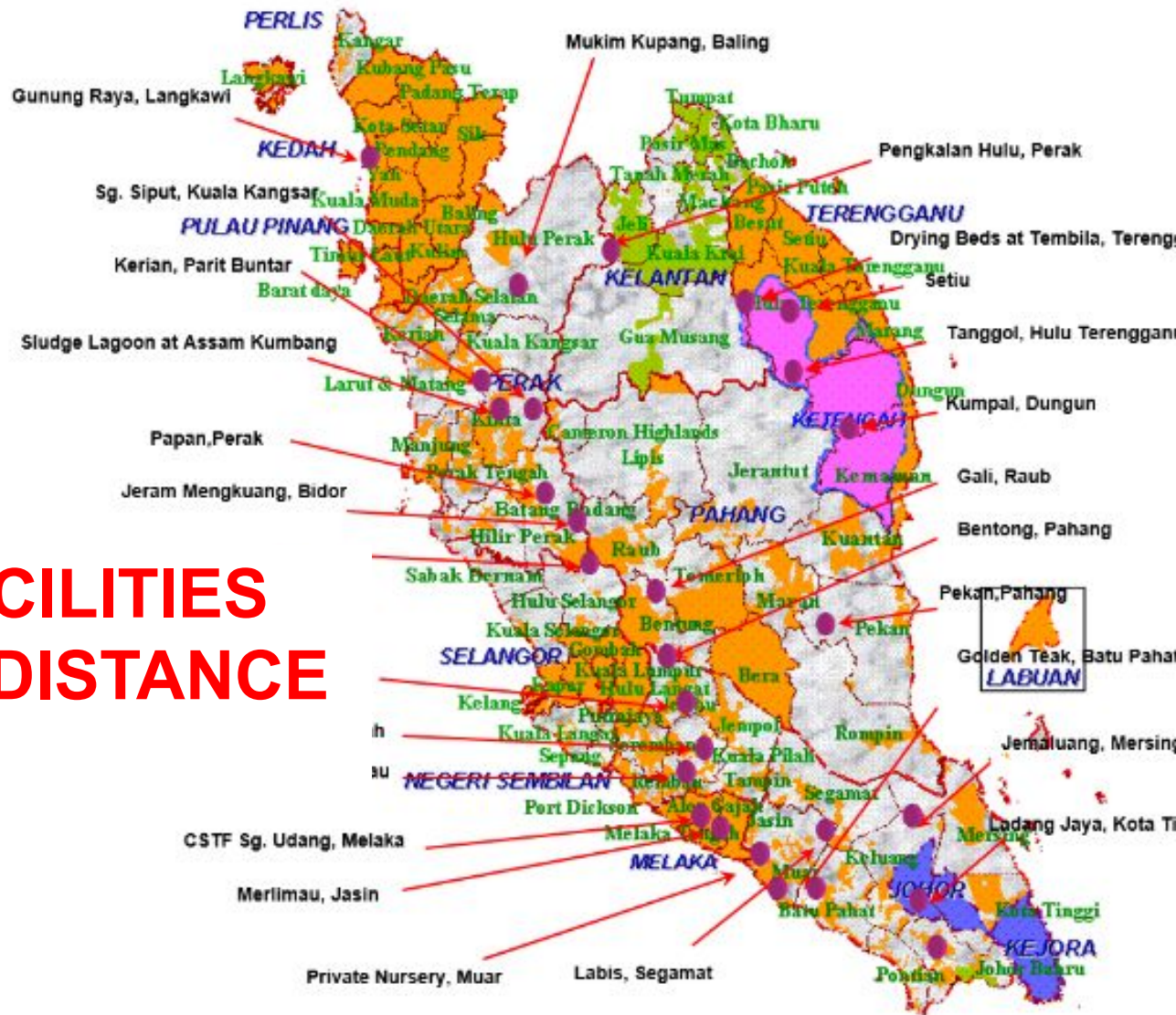
PRIOR TO 1994

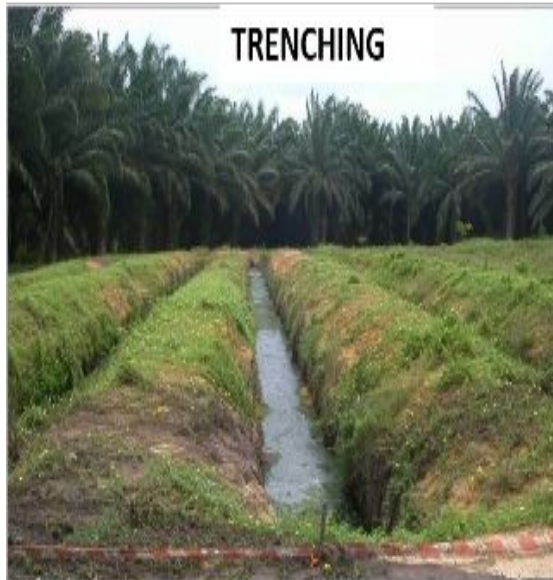
- Local bodies
- Demand Emptying
- No treatment



DEDICATED SLUDGE FACILITIES

**TREATMENT FACILITIES
WITHIN SHORT DISTANCE
OF ALL AREAS**

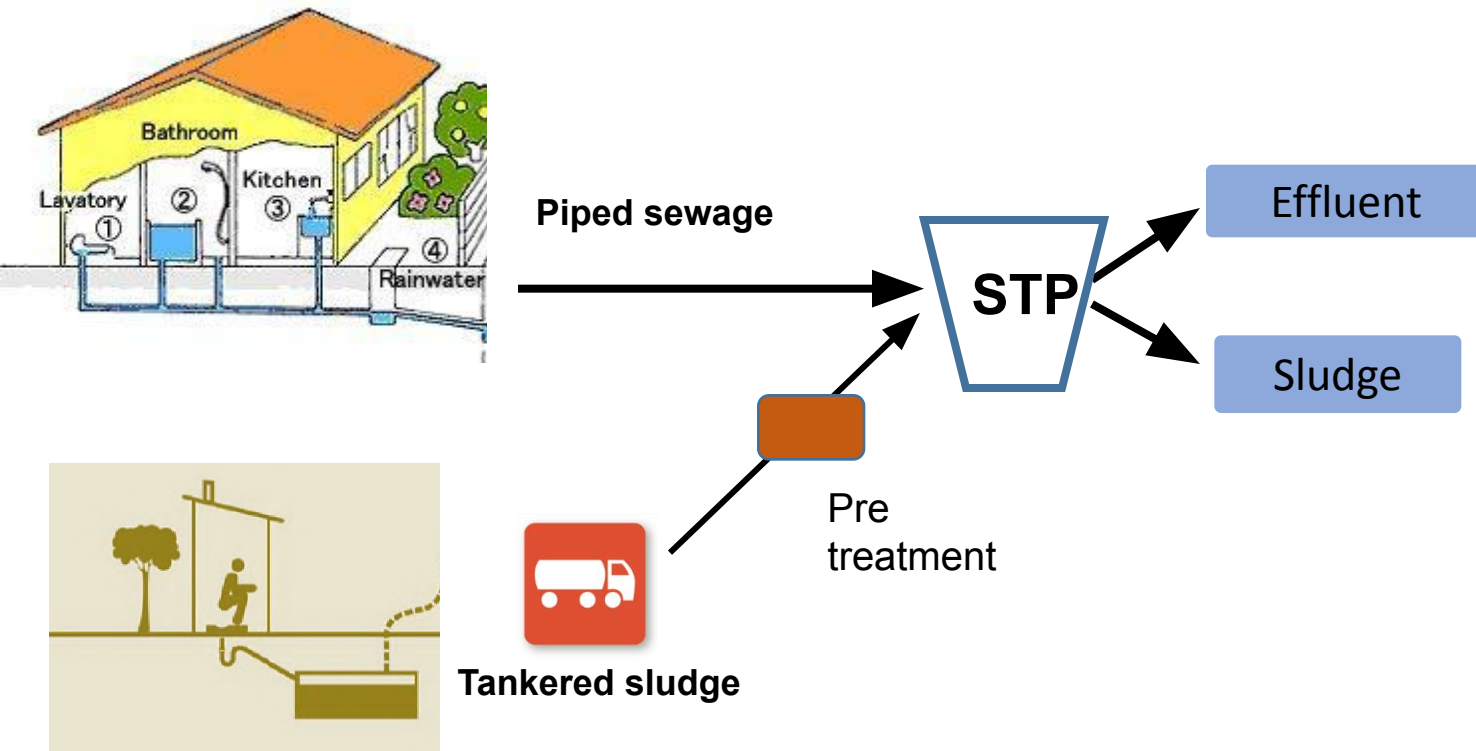




INCREMENTAL INTRODUCTION OF TECHNOLOGIES



Co Treatment of sludge / sewage

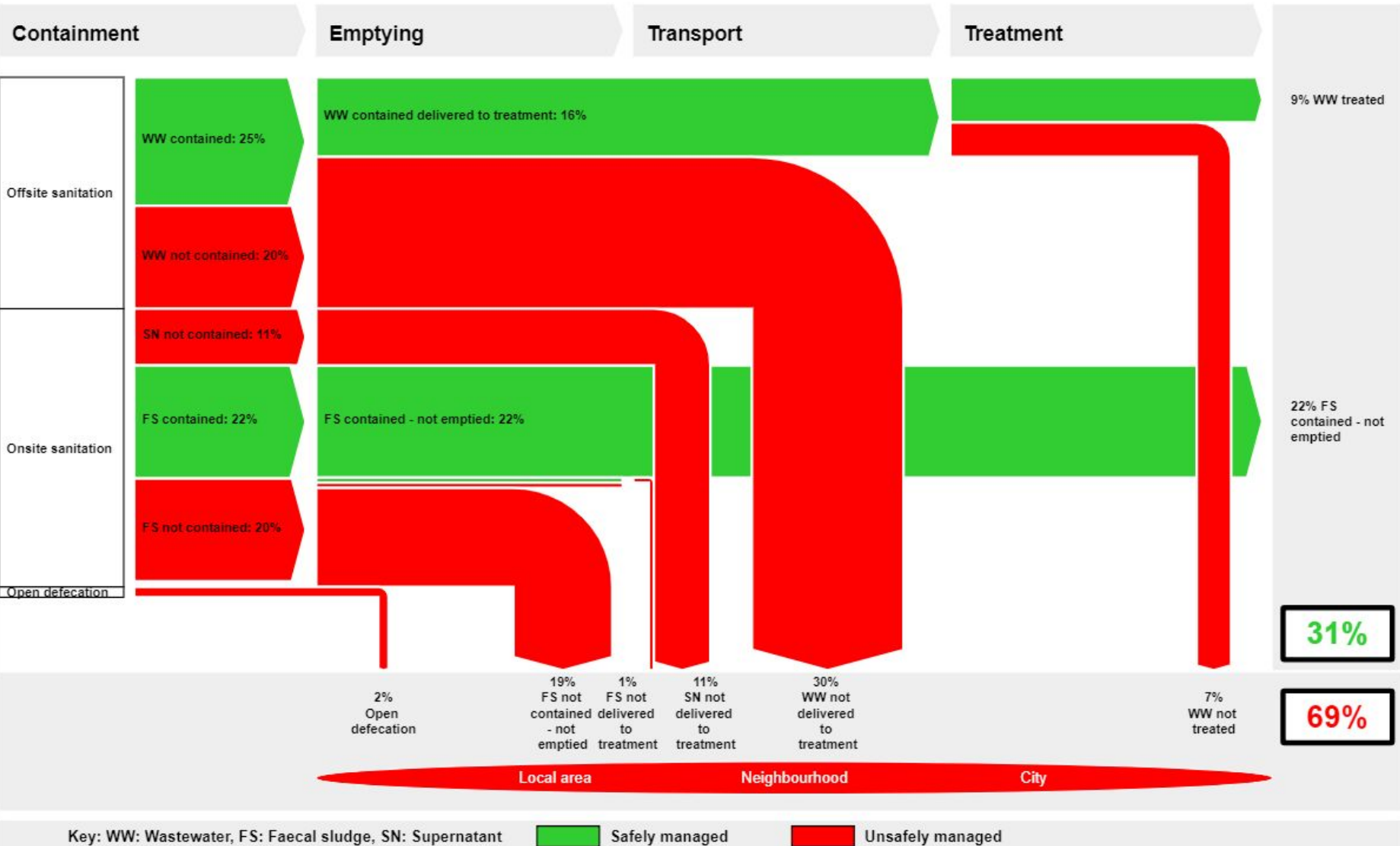


Septage is pretreated (screening / grit removal and solids / liquid separation) before the liquid part is mixed into sewage stream.

COSTS & RECOVERY

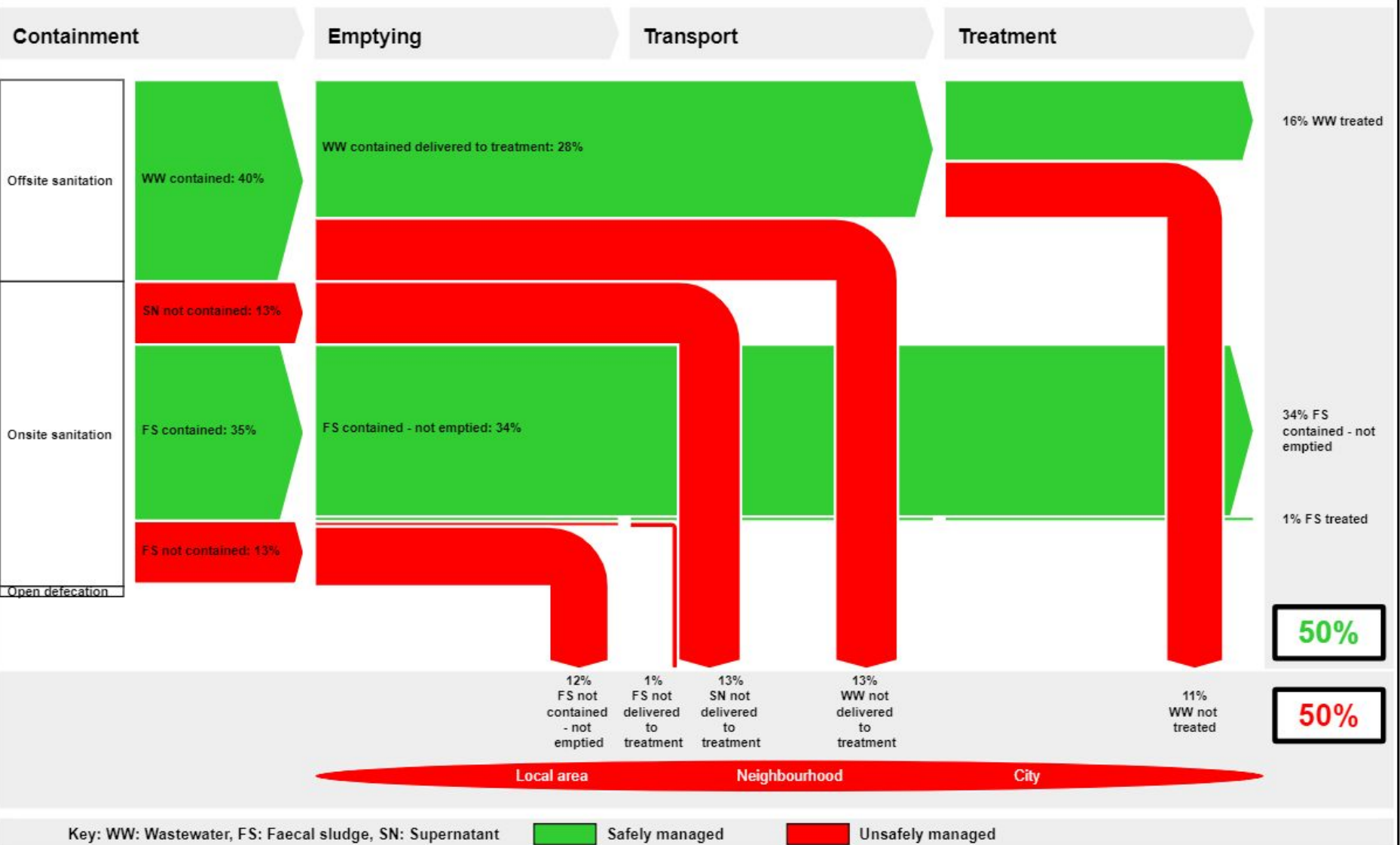
- *Emptying : different approach for*
 - *Demand*
 - *Scheduled*
- *Tariff / costs :*
 - *direct, indirect*
 - *on service/ continuous*
 - *subsidy : public goods component*

MALAYSIA: 1960s



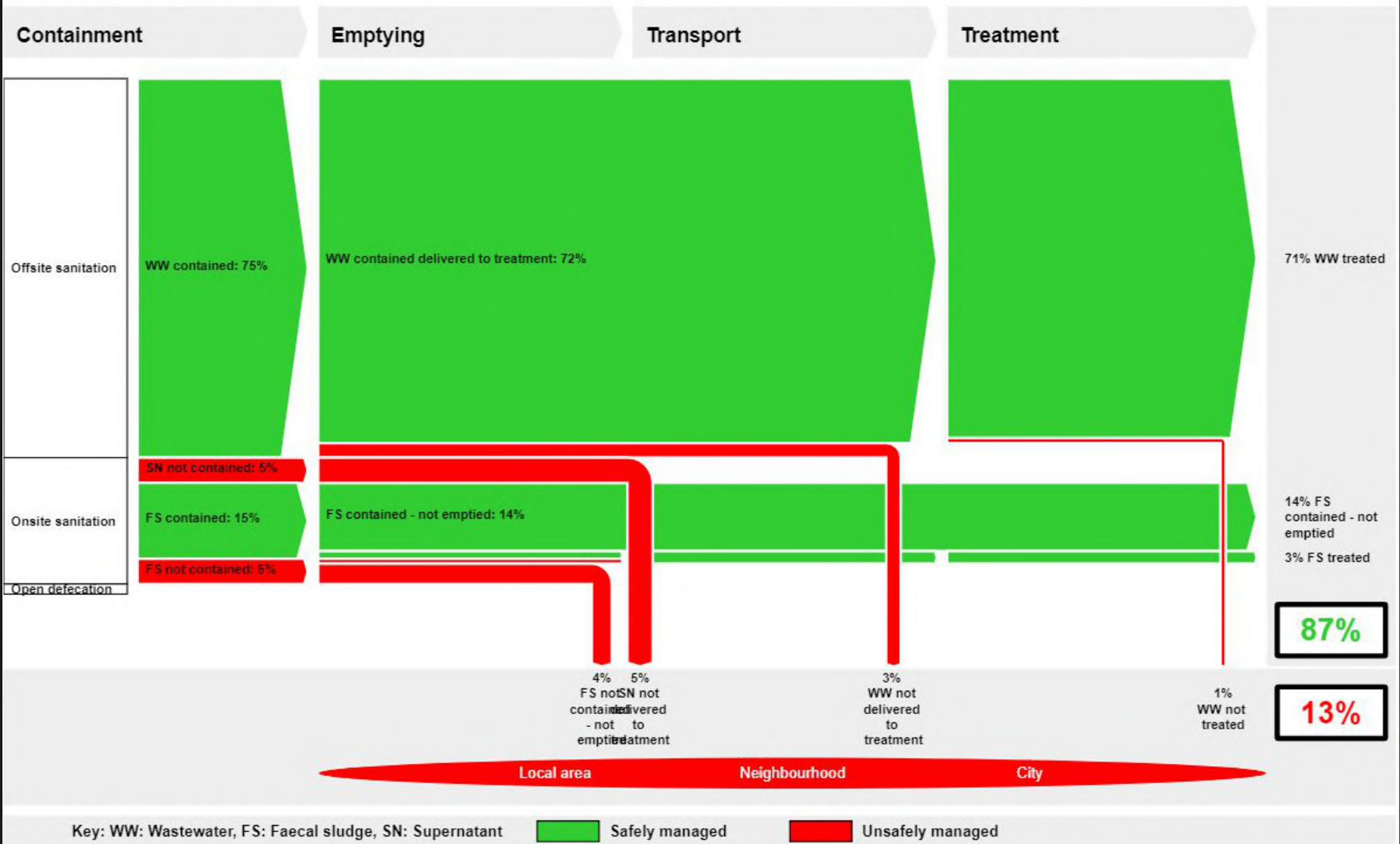
The SFD Promotion Initiative recommends preparation of a report on the city context, the analysis carried out and data sources used to produce this graphic.
 Full details on how to create an SFD Report are available at: sfd.susana.org

MALAYSIA 1980s



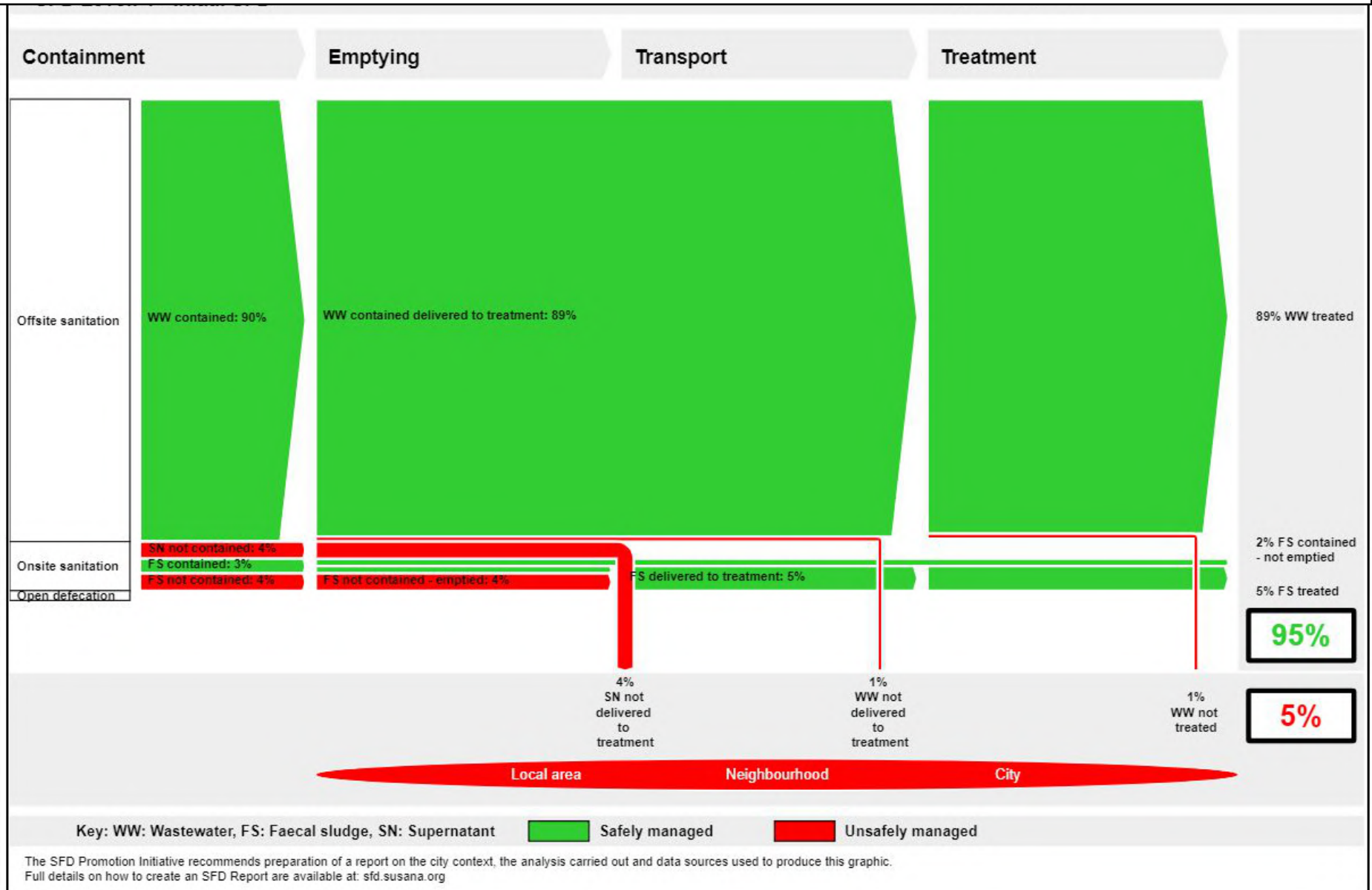
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MALAYSIA TODAY



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MALAYSIA FUTURE



WHAT WORKED

- *Governance, regulations, institutional*
- *Private sector involvement*
- *Incremental “appropriate” technologies*
- *Stakeholder engagement*
- *Ensuring quality of containments*
- *SOPs, procedures*

WHAT DID NOT WORK

- *Big bang approach*
- *Lack of awareness programmes before the start*
- *Charging schemes*
- *Institutional inequity*

CHALLENGES & WAY FORWARD

- *Governance : involve States / LAs, Water companies, competitiveness*
- *Effluent discharges: load / carrying capacity*
- *Reuse / resource recovery ; Carbon emission, energy use*
- *Asset management, risk based approach, incl climate change risk*
- *Asset creation, ownership, CAPEX*
- *National sewerage strategy: appropriate*
- *Charging schemes: user + beneficiary*

thank you