

MALAYSIA'S SEWERAGE & SANITATION SECTOR REGULATORY FRAMEWORK



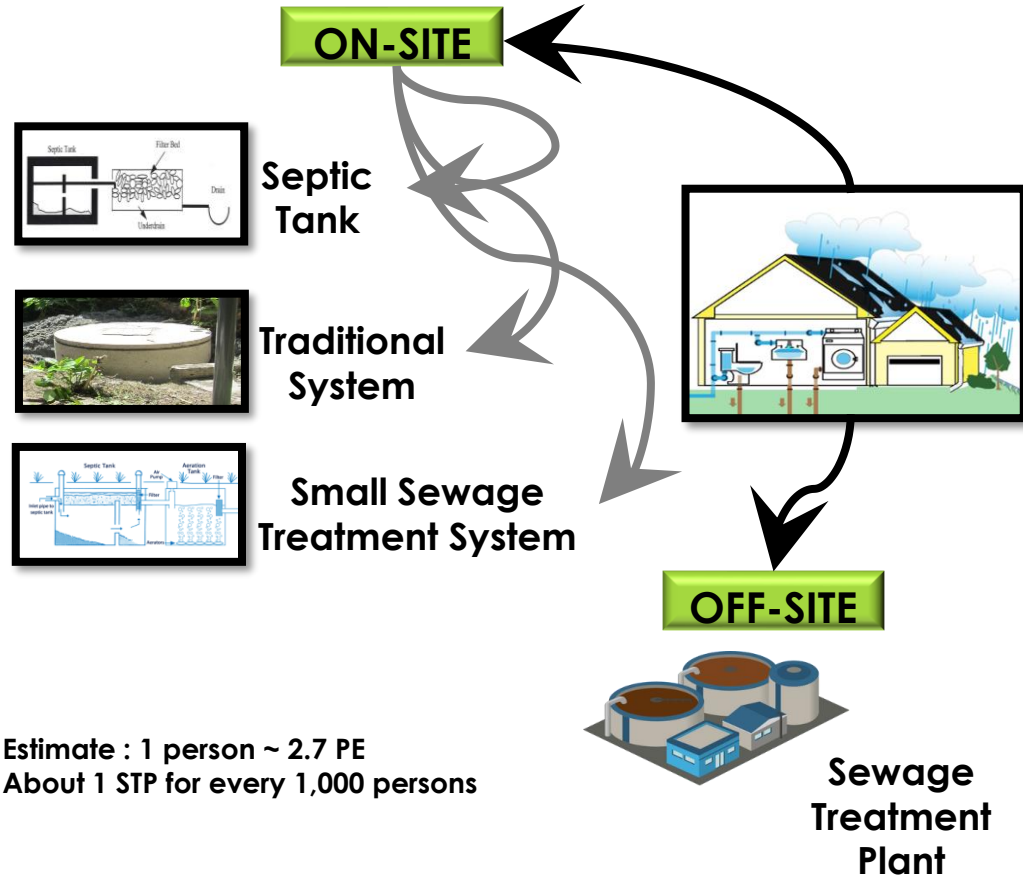
PRESENTATION OUTLINE

- TONE SETTING - SNAPSHOT IN A GLANCE
- EVOLUTION OF REGULATORY LANDSCAPES
- PRIVATE SECTOR PARTICIPATION
- POTENTIAL TAKE AWAY POINTS

SNAPSHOT OF MALAYSIA'S WATER SERVICES

Description	During Independence - 1957	Today - 2019
Population	7 million	32 million
Urban population	30%	75%
Improved sanitation	4.5%	96% (4% unimproved sanitation)
Population served by connected services	5%	70%
Policy Makers	Ministry of Health	Ministry of Water, Land and Natural Resources
Regulatory Framework	Fragmented	Water and sewerage – 1 regulator
Sewerage Tariff	No tariff (part of annual assessment)	Monthly billing. Standardized tariff nationwide
Services	Water – State owned departments Sewerage – Local Authorities	Water – Private companies, state government controlled private company, corporatized government department Sewerage – Private company, federal & state government owned private companies & local authority
Beneficiaries	Direct user	Community & environment
Nos of regional STPs	No regional STP	101 regional STPs

DISTRIBUTION OF SEWERAGE INFRASTRUCTURE



Summation

- ✓ high number of population served by connected services
- ✓ a positive note to the environment
- ✓ more than 10,000 STPs – causing proliferation of processes & equipment
- ✓ leading to logistics and operational mess as well as challenges in allocation of skills and resources
- ✓ not cost effective and economically not feasible for facilities smaller than 20,000 PE

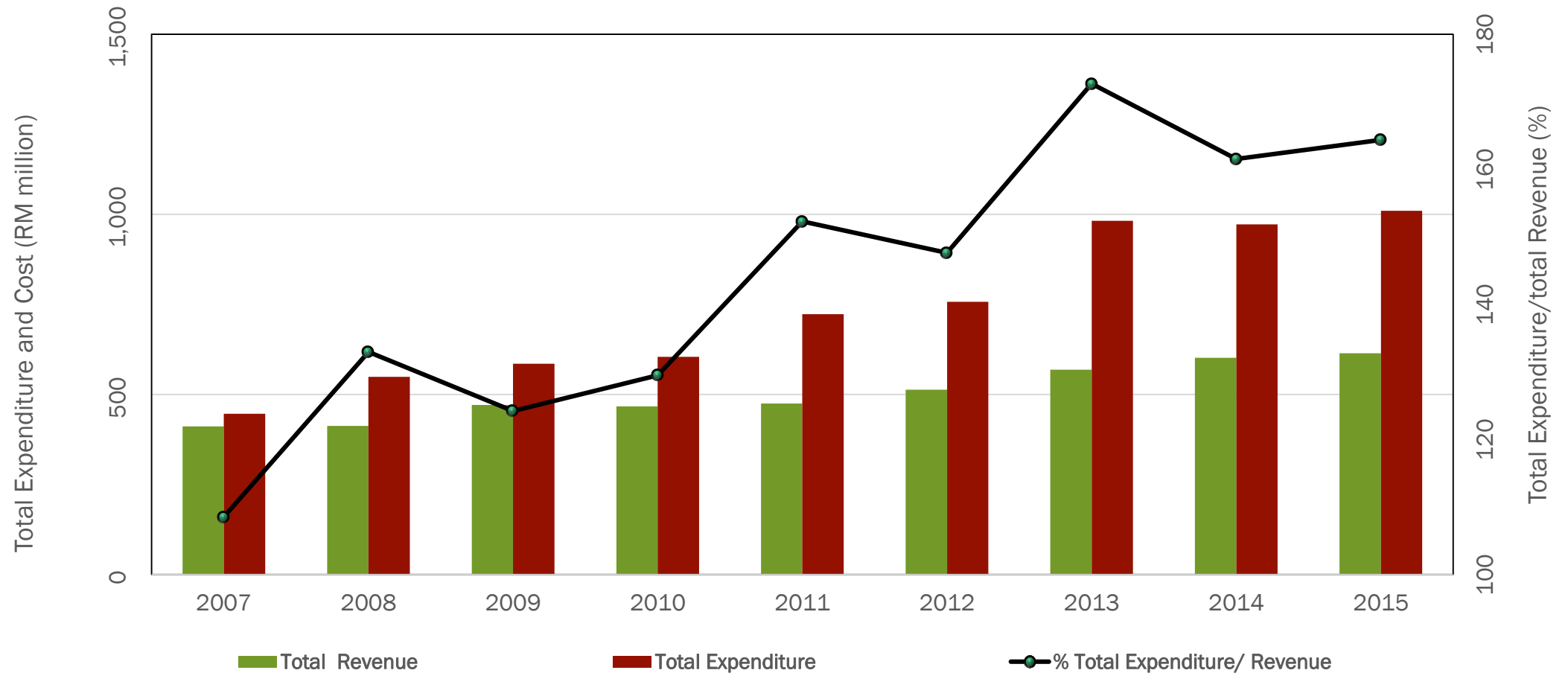
SEWERAGE FACILITIES	QUANTITY	POPULATION EQUIVALENT (PE)
Public Sewage Treatment Plant	6,871	25,258,155
Private Sewage Treatment Plant	3,603	3,373,471
Communal Septic Tank (CST)	4,359	531,127
Individual Septic Tank (IST)	1,354,986	6,934,008
Traditional System	1,154,592	5,772,960
Network Pumping Station	1,183	n.a
Length of Sewer Network (km)	20,100	n.a

Source : Malaysia Water Industry Guide 2018

Summation as of 2017...cont

- ✓ 542,675 nos of enquiries & complaints were recorded by IWK
- ✓ Out of which 78% is on billing, 9.8% on desludging services, 5.6% on connected services and 6.6% others.
- ✓ IWK has 3,729,506 accounted customers (AC) for connected services.
- ✓ The statistics say 1 AC complains on services in average of 0.008 times per year. Effectively that means the likelihood of 1 AC complains once every 125 years in average. Yet 78% of ACs are unhappy with the charges.
- ✓ The very desire of connected services became counterintuitive

UNDER PRICING OF TARIFF



Summation

- ✓ Conversion of non mechanize facilities to mechanize systems to improve treatment efficiency
- ✓ 87.5 % are domestic accounts; 8.6% are commercial accounts; 3.8% are government facilities and 0.1% are industrial accounts
- ✓ Revenue from industrial AC break even the OPEX. While 87.5% domestic AC are cross subsidized by commercial and government AC as well as annual subsidy

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REGULATORY ENTITIES AND LEGISLATIVE TOOLS

Agencies	Legal Instruments
National Water Services Commissions (SPAN)	<ol style="list-style-type: none">1. Water Services Industry Act (WSIA) 20062. Suruhanjaya Perkhidmatan Air Negara Act (SPAN Act) 2006
Department of Environment (JAS)	<ol style="list-style-type: none">1. Environmental Quality Act (EQA) 19742. Environmental Quality Regulations (Sewage) 2009
Department of Safety and Health (DOSH)	<ol style="list-style-type: none">1. Factories and Machinery Act (FMA) 19672. Occupational Safety and Health Act (OSHA) 1994
Construction Industry Development Board (CIDB)	<ol style="list-style-type: none">1. Construction Industry Development Board Malaysia 1994
Ministry of Housing and Local Government	<ol style="list-style-type: none">1. Street, Drainage and Building Act (SDBA) 1974 (model law)
Local Authorities (PBT)	<ol style="list-style-type: none">1. Uniform Building By Laws
National Solid Waste Management Department (JPSPN)	<ol style="list-style-type: none">1. Solid Waste and Public Cleansing Management Act (SWPCMA) 2007

EVOLUTION - INSTITUTIONAL STRUCTURE

Control	Federal Constitution places sewerage sector under states power	Federal Constitution places sewerage sector under concurrent list. Hence the control of sewerage services became the responsibility of Federal Government	Federal Constitution places water services under concurrent list. Hence the control of water services became the responsibility of Federal Government
Policy Maker	Ministry of Health	Ministry of Housing & Local Government and later to Ministry of Energy, Water and Communication	Ministry of Energy, Water and Communication which later restructured to Minister of Energy, Green Technology and Water and again restructured to Minister of Water, Land and Natural Resources
Regulator	Areas within local authority (LA) boundary by LA Areas outside LA boundary by Ministry of Health	Sewerage Services Department	National Water Services Commission for both water and sewerage services
Capital Funding	By state government, local councils and property developers for area within LA By property developers and federal government for rural area	By Federal Government, concessionaire and private developers for area within LA By property developers and federal government for rural area	By Federal Government, SPAN and private developers. Ideally supposed
Operational Funding	Through assessment fees and support from state government and local councils By federal government for rural area when required	Through sewerage tariff and federal government subsidy	Through sewerage tariff and federal government subsidy
Services	Areas within local authority (LA) boundary by LA Areas outside LA boundary by Ministry of Health as when required	Areas within local authority (LA) boundary by IWK as concessionaire Areas outside LA boundary by federal government as when required	Areas within local authority (LA) boundary by IWK as concessionaire (based on past regime) New operators are licensed based on service area which covers the whole state. No pockets left unserved.

Objective of
Sewerage
Management

Protecting Public Health

Protecting Water Resource

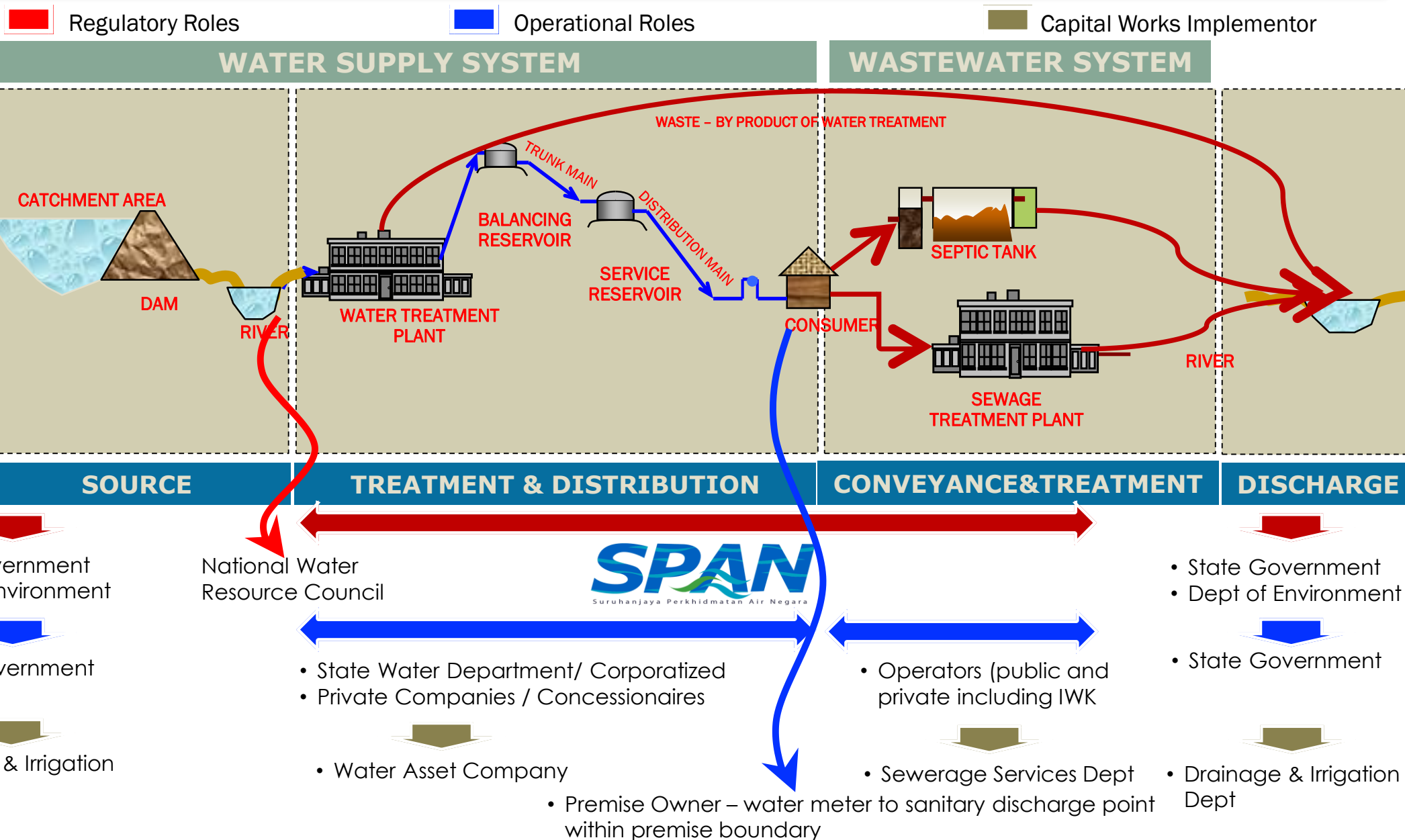
Protecting Environment

Upto 1993

1993 - 2006

2006 onwards

INSTITUTIONAL FRAMEWORK ARRANGEMENT – BIRD'S EYES VIEW



INSTITUTIONAL & REGULATORY FRAMEWORK

Institutional Framework – Separation of Roles

Body

Federal Government
(Ministry of Water,
Land and Natural
Resources)

State Government

National Water
Resource Council
(NWRC) – chaired by
Prime Minister

National Water Services
Commission (SPAN)

Area of Responsibility

Policy matters

Raw Water matters

Water Resource
matters – Cross
boundaries / Inter
state / Issue of
National interest

Regulatory matters

Description

Development and
implementation of
policy for water
services sector

Regulate raw water
abstraction and
catchment
management

Coordinate with the
various State
Government in the
management of the
water basins.

Regulate the Water
Services industry
(Water and Sewerage
/Sanitation services)

Regulatory Framework – Water Services

Economic

- ✓ Licensing regime with viable business model and will be measured base on KPIs & benchmarking
- ✓ Regulated tariff base on RWA toward full cost recovery
- ✓ Competitive bidding
- ✓ Integration of water & sewerage services

Technical

- ✓ Selection of infra – planning & strategy
- ✓ Quality of infra – design , construction and T&C
- ✓ Performance of product and system

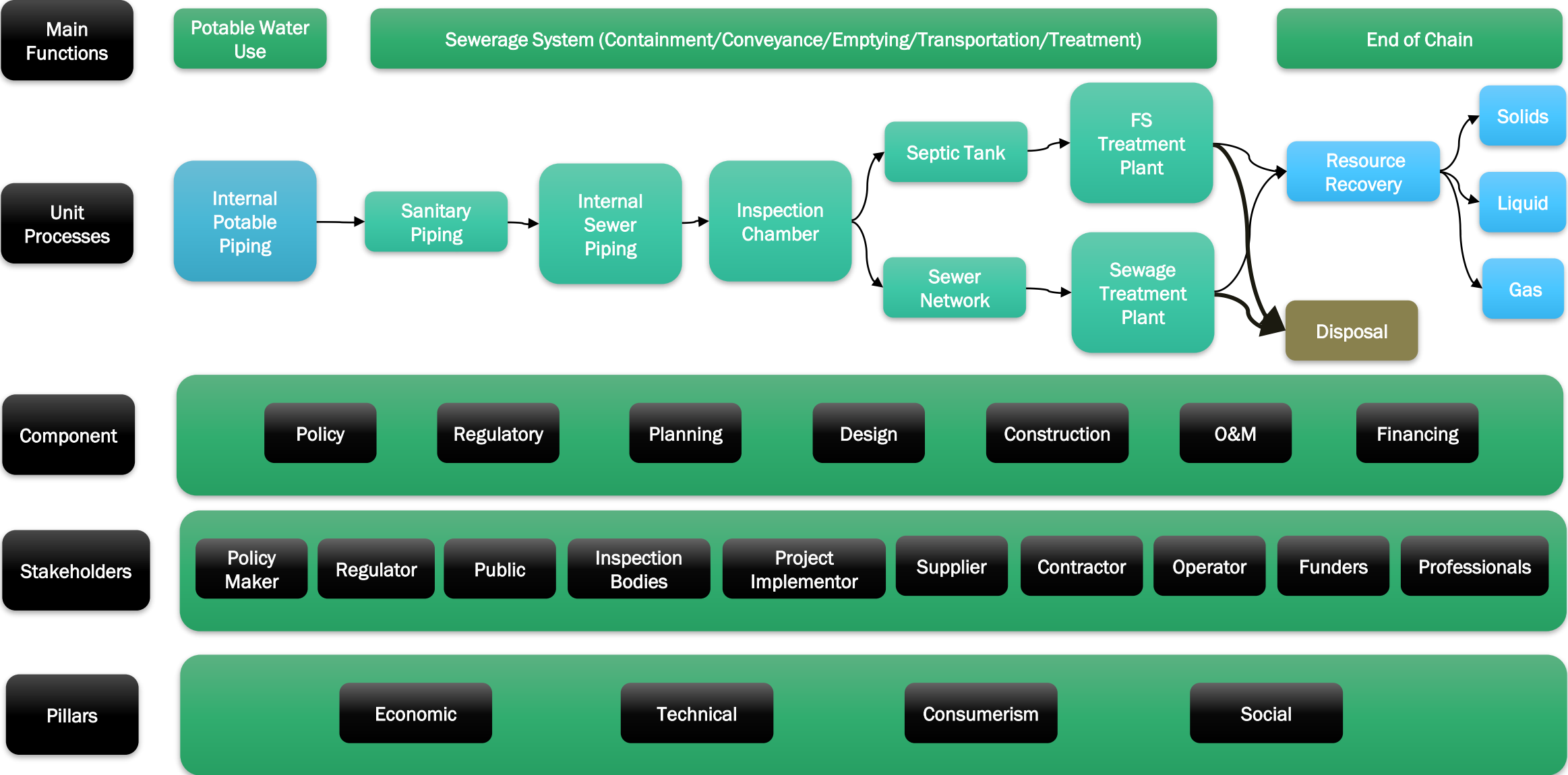
Consumer

- ✓ Consumer standard: Quality of services, rates, deposits etc
- ✓ Resolutions of consumer complaints /disputes
- ✓ Provision of information-transparency

Social

- ✓ Sewerage capital contribution fund
- ✓ Water industry fund
- ✓ Water Forum
- ✓ Environmental aspects
- ✓ Public consultation & participation in regulatory functions

REGULATORY FRAMEWORK LANDSCAPE – BIRD’S EYE VIEW



HOLISTIC REGULATION OF SEWERAGE SERVICES

Financing of services	Viable business model	Construction quality	Competency contractors
	Funding mechanism & licensing regime		Construction technical standards
Equitable Tariff setting	Determine tariff	Products and Material Quality & Performance	Standards and specification
	Billing collection		Obligation of suppliers and manufacturers
O&M works	Base on KPI and benchmark	Design of infra works	Standards and specifications
	Competency of workers		Competency of designers
Required players	Quality of assets in total	Type infra (on site or connected) and compliance standard	Catchment and development plans
	Quality of influent		Sewerage infrastructure selection criteria based on site specific
	Develop required segment		
	Qualification & skills & compliance		

SPAN AS SERVICES REGULATOR #1

Clarity of Roles and Objectives	<p>Legal Framework</p> <ul style="list-style-type: none">❑ SPAN Act – functions and operation of regulator❑ WSI Act – provisions to regulate the sector (regulatory framework) <p>Distinctive institutional framework</p>
Autonomy	<ul style="list-style-type: none">❑ Amendment to Federal Constitution<ul style="list-style-type: none">■ Moving sewerage and sanitation matters from local & state government to federal government■ Moving water services matter from state government to federal government❑ Commission comprises of board members from various sector appointed by Minister.❑ Can be appointed as commissioner up to 5 terms with 2 years per term❑ Board decides on matters pertaining to regulatory and operation of the Commission❑ Commission is funded thorough permit and licensing fees

SPAN AS SERVICES REGULATOR #2

Accountability	<ul style="list-style-type: none">❑ Commission can sue and can be sued❑ Provided for formation of tribunal to resolve disputes among regulated stakeholders❑ Provided for formation of appeal tribunal at Ministry's level for appeals against Commission's decisions❑ Industry performance report to be submitted to Minister annually❑ Financial account to be tabled to Parliament❑ Minister can only make general direction. Commission makes specific directions
Participation & Transparency	<ul style="list-style-type: none">❑ Provided for formation of Water Forum to encourage stakeholder input❑ Provided for public consultation process before Commission's directions or decisions.
Predictability	<ul style="list-style-type: none">❑ Functions and roles determine through SPAN Act. Any changes must be through amendment of the Act

CAPITAL WORKS REGULATORY MODEL – ROLES & FUNCTIONALITY

Functions Sanitation Submarket		Financing	Planning and Design	Construction	O&M
Sewer-based Sanitation	Sewage Conveyance	Government/ Private Developers	Professionals SPAN (approvals)	Professionals SPAN (approvals)	Operator SPAN (license)
	Industrial/ Prohibited Effluent Discharged into Public Sewer	Market Driven	Professional SPAN (approvals)	Not Determined	Not Determined
	Sewage Treatment	Government/ Private Developers	Professionals SPAN (approvals)	Professionals SPAN (approvals)	Operator SPAN (license)
On-site Sanitation	Onsite Sanitation Facility	Government/ Private Developers	Professionals SPAN (approvals)	Professionals SPAN (approvals)	Asset Owner
	Faecal Sludge Desludging Services	Operator	Not relevant	Not relevant	Operator SPAN (license)
	Treatment of Faecal Sludge	Operator	Professionals SPAN (approvals)	Professionals SPAN (approvals)	Operator SPAN (license)
	Re-use of Faecal Sludge	Market Driven	Not Determined	Not Determined	Not Determined

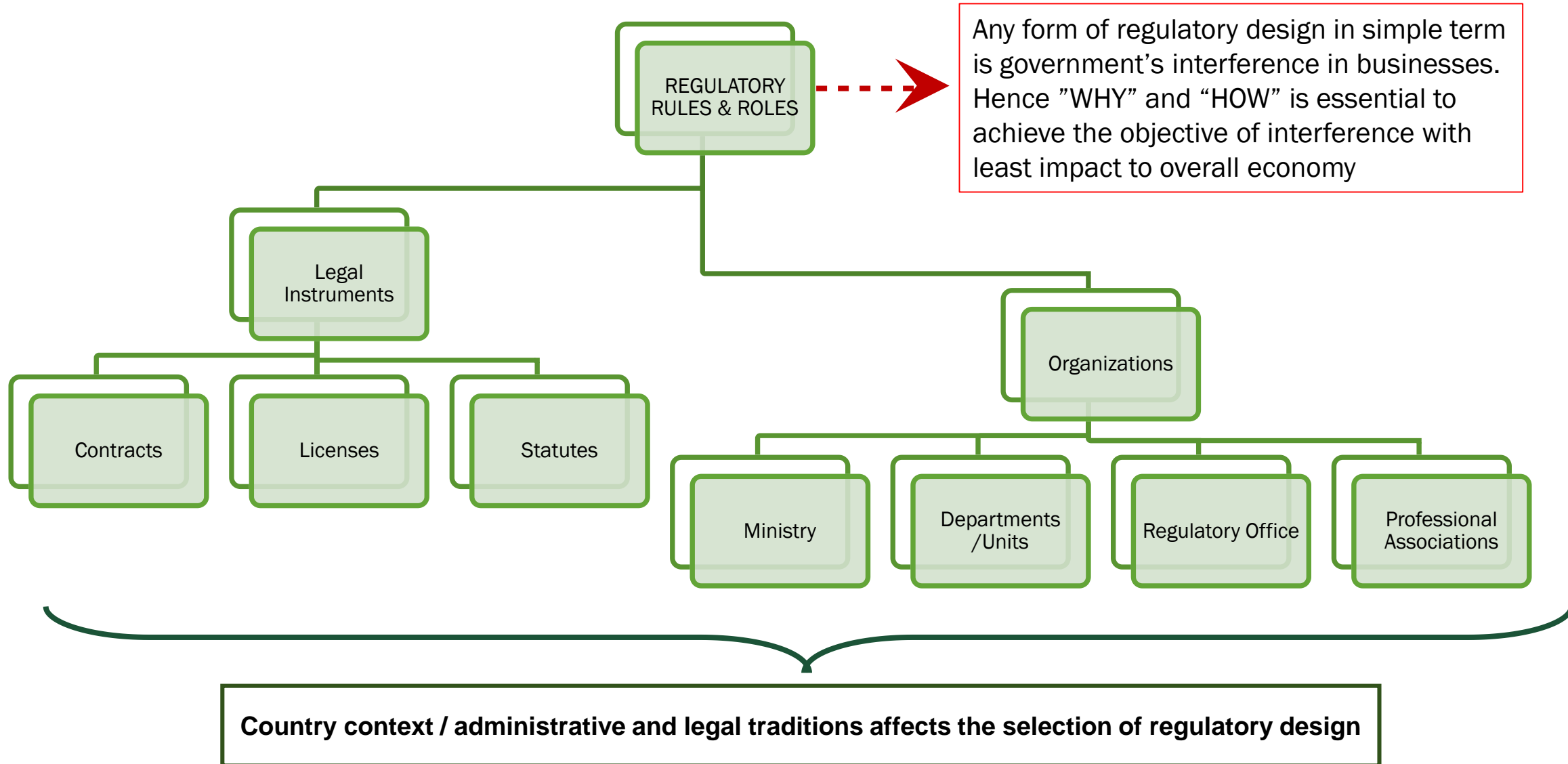
SERVICES REGULATORY MODEL – ROLES & FUNCTIONALITY

Regulatory Functions Sanitation Submarket		Price Regulation	Service Quality Regulation	Competition Regulation	Consumer Protection
Sewer-based sanitation	Sewage Conveyance	SPAN	SPAN	SPAN (certain segments)	SPAN
	Industrial/ Prohibited Effluent Discharged into Public Sewer	SPAN (certain segments)	SPAN	None	SPAN
	Sewage Treatment	SPAN	SPAN (Services) DOE (Effluent standards)	SPAN (certain segments)	SPAN
On-site sanitation	Onsite Sanitation Facility	Market Driven	SPAN	None	SPAN
	Faecal Sludge Desludging Services	SPAN	SPAN	SPAN (certain segments)	SPAN
	Treatment of Faecal Sludge	SPAN	SPAN DOE (Disposal sites)	SPAN (certain segments)	SPAN
	Re-use of Faecal Sludge	None	Not Determined	None	Not Determined

MALAYSIA'S TOOLS FOR QUALITY REGULATIONS

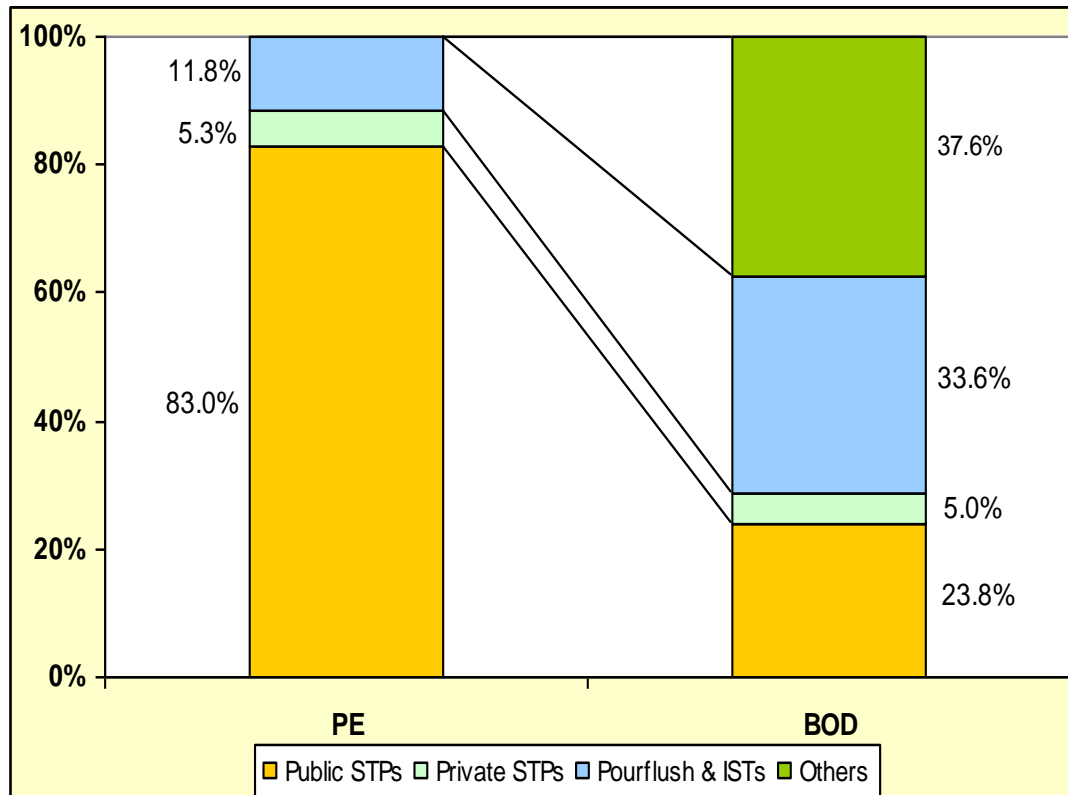
- **Command & control (Heavily used)**
 - *As most of the infrastructure is funded and constructed by private sector before handing over to public operator for operations and maintenance.*
 - *As the community benefits supersedes individual benefits*
 - *Almost all stakeholders & scope of work within whole service chain of WSS are captured & addressed through regulations, guidelines, standards, KPIs etc.*
 - *Input regulatory is convenient and familiar compared to output regulatory which is a new territory*
 - *To balance, use RIA as a tool which incorporates public consultations and cost benefit analysis to establish overall impact of the regulations (but largely not used effectively)*
- **Regulations by incentives (yet to implement)**
 - *Studying this approach for certain areas, especially resource recovery and water industry fund*

IDENTIFYING THE 'RIGHT' REGULATORY DESIGN

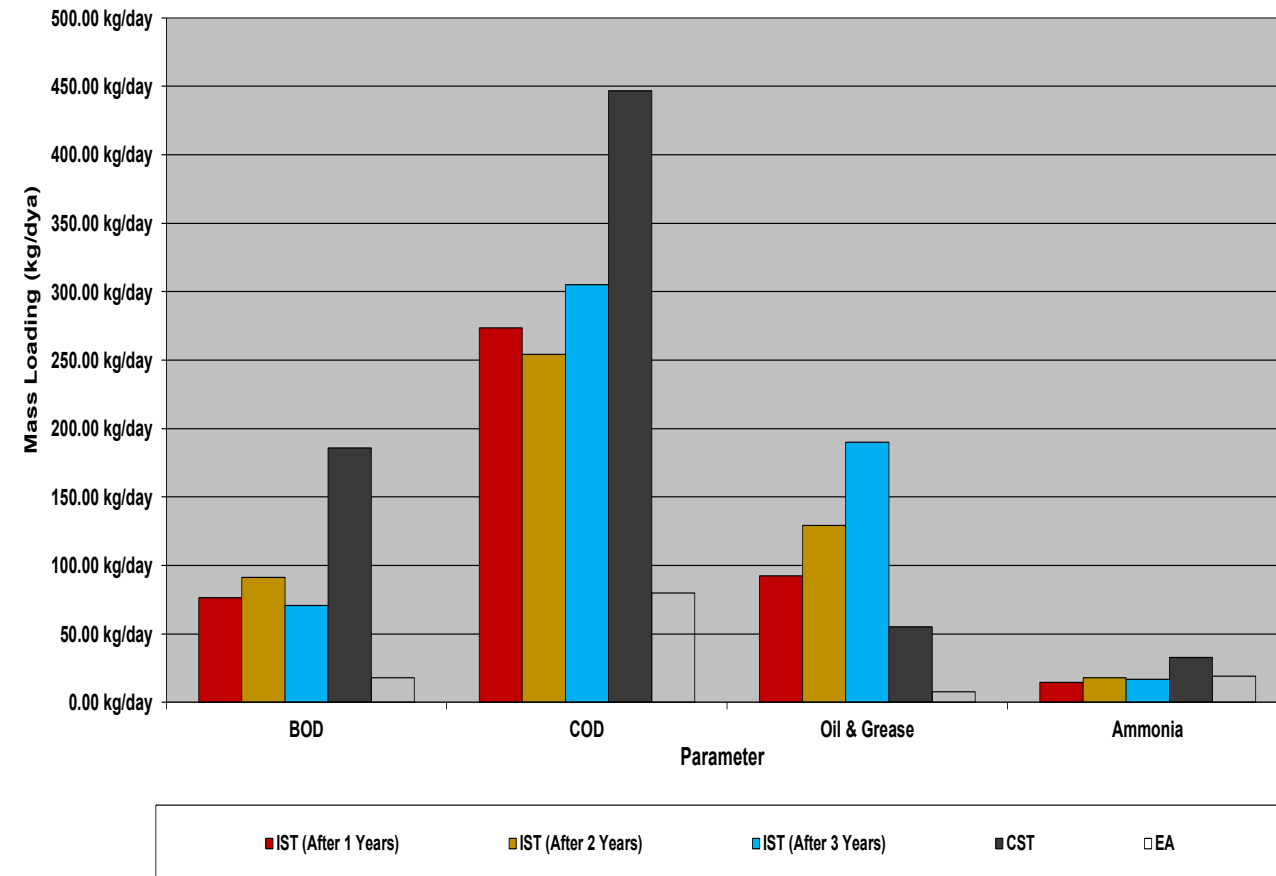


CASE STUDY: DESLUDGING SERVICES REGULATORY FRAMEWORK #1

BOD LOADING AGAINST PE IN LANGAT RIVER BASIN IN 2007



COMPARISON OF POLLUTION LOADING



CASE STUDY: DESLUDGING SERVICES REGULATORY FRAMEWORK #2

SEWERAGE SERVICES ACT 1993 (REPEALED)

Power to cause private septic tanks to be cleansed, etc.

22. The **Director General shall cause** private septic tanks in areas from time to time prescribed by the Minister to be properly cleared, cleansed and emptied.

Duty of owner to operate and maintain private sewerage system or septic tank

25. (1) The **owner or occupier** of any premises having a sewerage system or septic tank shall—

- (a) **ensure adequate access to the septic tank** for the purpose of enabling the septic tank to be serviced and desludged;
- (b) cause the septic tank, the private connection pipe and all accessories thereto **to be so maintained and kept as not to be a nuisance or harmful to health**; and
- (c) cause the septic tank to be cleared, cleansed and emptied by a licensed sewerage services contractor.

WATER SERVICES INDUSTRY ACT 2006

Septic tanks to be desludged

44. (1) The **service licensee operating and maintaining a public sewerage system shall desludge** the septic tanks in its sewerage services areas from time to time as may be prescribed.

(2) The service licensee who fails to comply with its obligations under subsection (1) commits an offence and shall, on conviction, be liable to a fine not exceeding fifty thousand ringgit.

Duty to operate and maintain private sewerage system, etc.

65. (1) The **owner, management corporation or occupier** of any premises having a private sewerage system or septic tank shall—

- (a) **grant the service licensee or permit holder adequate access to the septic tank** for the purpose of enabling the septic tank to be serviced and desludged;
 - (b) cause the private sewerage system, septic tank, the private connection pipe, individual internal sewerage piping, common internal sewerage piping and all accessories thereto **to be so maintained and kept as not to be a nuisance or harmful to health**;
 - (c) **cause the septic tank to be desludged** and, in the case of a private sewerage system, to be serviced or maintained **by a service licensee or permit holder at such intervals** and in such manner as may be prescribed; and
 - (d) **grant the service licensee or permit holder adequate access** to the private sewerage system for the purposes of enabling the private sewerage system to be inspected, serviced or maintained.
- (3) A person who contravenes subsection (1) commits an offence and shall, on conviction, be liable to a fine not exceeding fifty thousand ringgit.

CASE STUDY: DESLUDGING SERVICES REGULATORY FRAMEWORK #3

EVOLUTION OF DESLUDGING FRAMEWORK

1. Prior to 1993, when sewerage services are under the control of local authorities; desludging was performed based on demand
2. After 1993, the sewerage services control moved to federal government and scheduled desludging was rolled out.
3. Extensive campaigns and awareness programs were conducted to increase the acceptance of scheduled desludging
4. After 14 years of scheduled desludging with the obligation to perform by IWK as the concessionaire – liberalisation concept was introduced.
5. Liberalisation concept allows premise owner to use the services of IWK or any desludging contractor for the scheduled desludging activity.
6. From 100,000+ AC desludging dropped to about 20,000 AC
7. About 32% of PE is served by IST, CST and traditional systems which requires periodic desludging as of 2017 data
8. Ideally at 3 years of periodic desludging about 600,000+ septic tanks should be desludged annually

THE PROPOSED SOLUTION

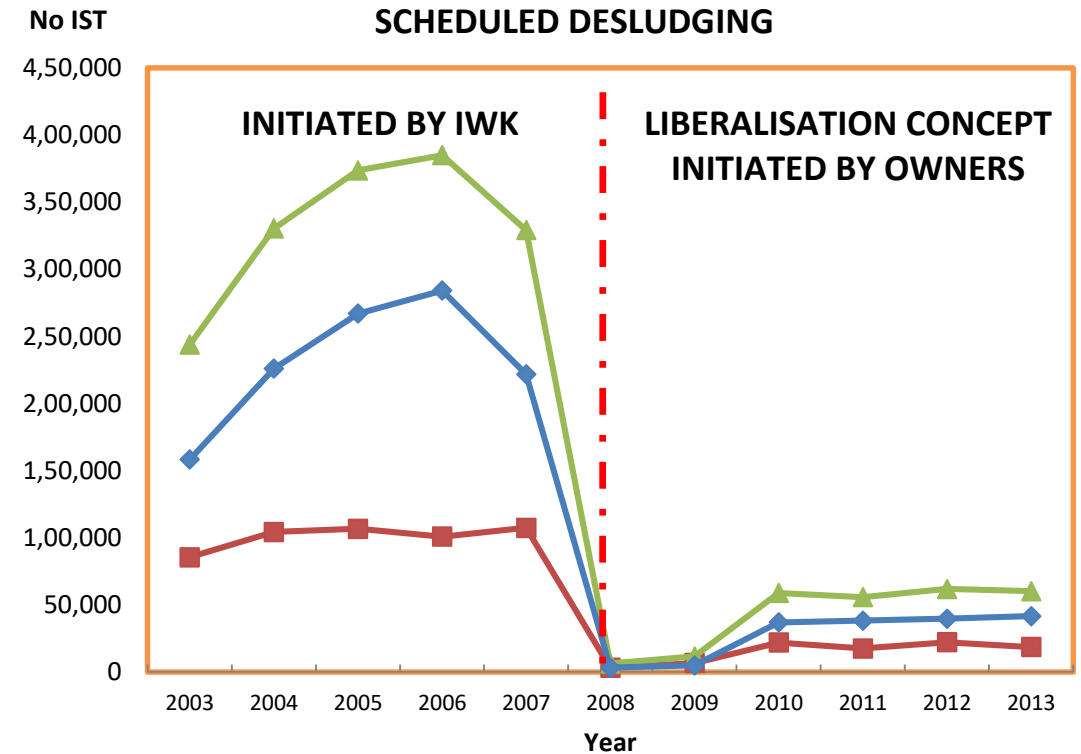
ITEM	BEFORE 2008	AFTER 2008
Obligation	Owner	Owner
Services by	IWK or contractor appointed by IWK	IWK or SPAN permit E holder
Service Duration	Once every 2 years	Once every 3 years
Service Requirement	Any time throughout service period	As and when needed
Service Charge	Monthly at RM 6/ month @ RM 144 / 2 years	RM 230 for each services @ RM 6.40/ 3 years

CASE STUDY: DESLUDGING SERVICES REGULATORY FRAMEWORK #4

THE ISSUES

- ✓ The basis for liberalization concept
 - ✓ IWK was not interested in desludging business due the problems listed below
 - ✓ The cost of desludging by IWK is high hence high refusal rate
 - ✓ Introducing competition/alternative options for septic owners will increase desludging rate
 - ✓ The alternative options will bring desludging cost lower
- ✓ The problems IWK faced since 1993
 - ✓ Refusal From Owners
 - ✓ Location Inaccessible and septic tank covers sealed
 - ✓ Owner Not In During Visit
 - ✓ Septic Tank Not Found/ Missing
 - ✓ Premise Not Found or unoccupied
 - ✓ Non Standard Septic Tank

NATURE OF FAILURE



Total Attempted

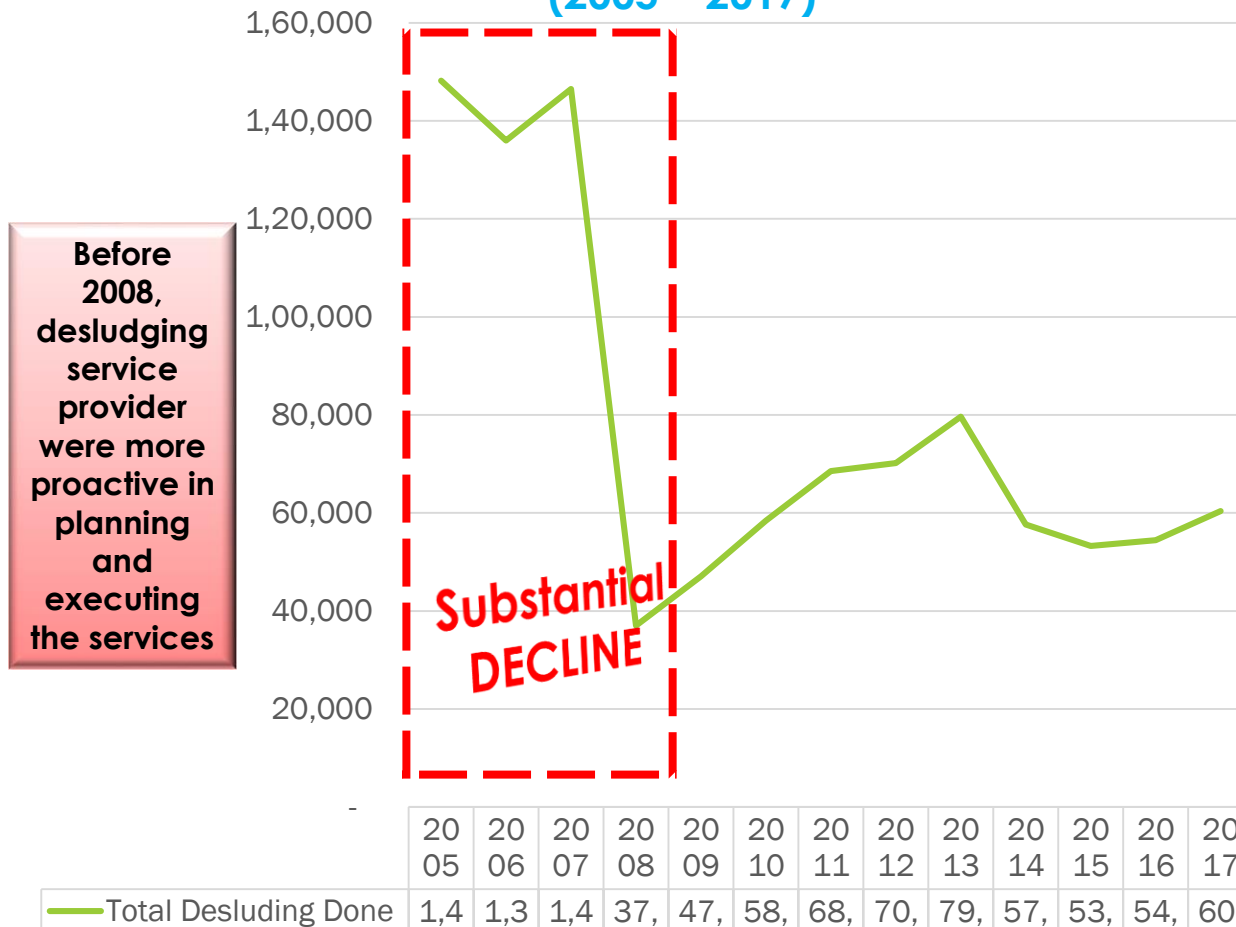
Total Unsuccessful

Total Desludged

CASE STUDY: DESLUDGING SERVICES REGULATORY FRAMEWORK #5

IT WENT REALLY WRONG

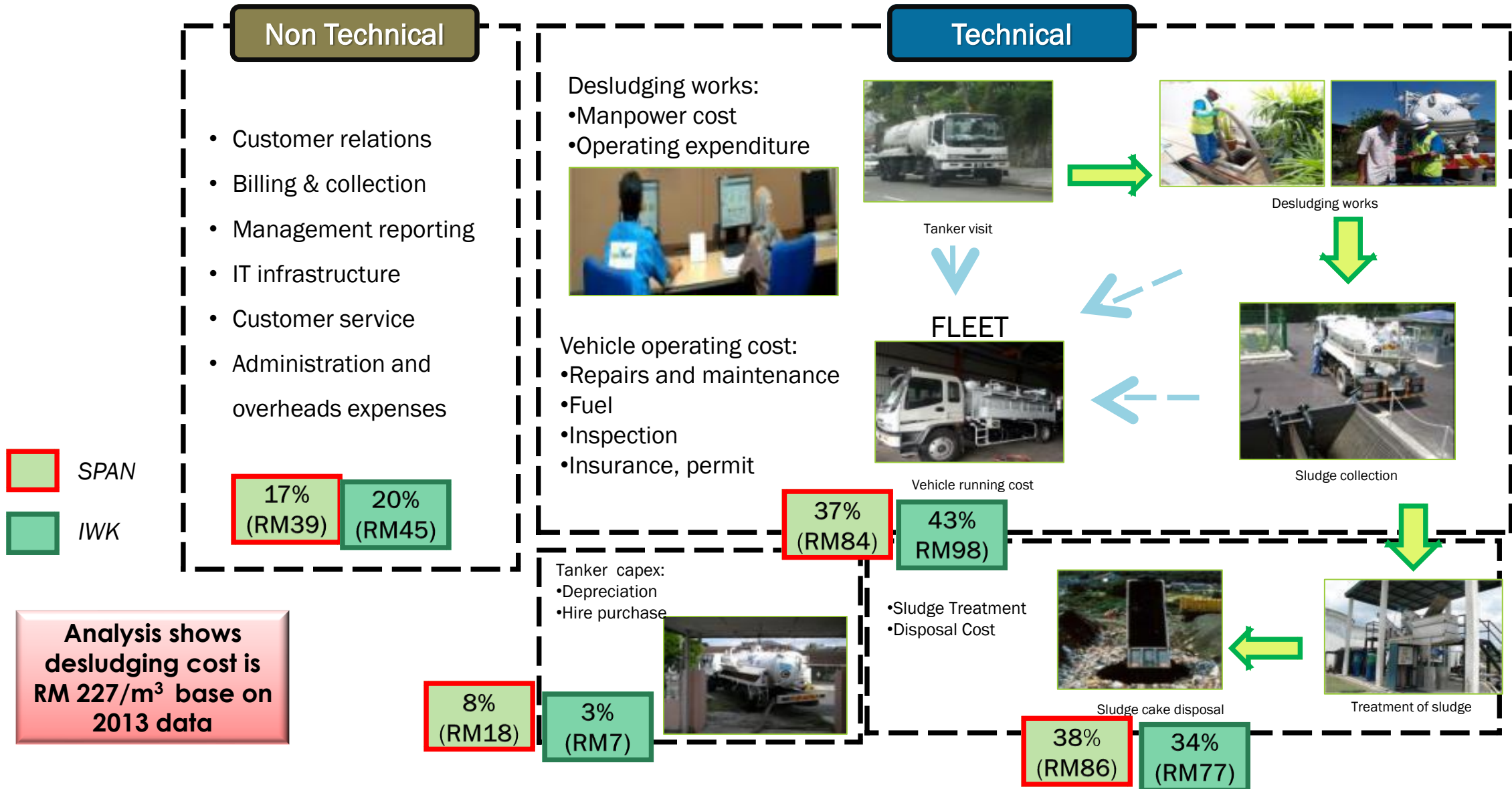
INDIVIDUAL SEPTIC TANK (IST) DESLUDGING TREND (2005 – 2017)



THE ACTUAL ISSUE AND IMPACT OF LIBERALIZATION

- ✓ The actual issue
 - ✓ Wrong framing of the problem
 - ✓ Lack of regulatory support
 - ✓ Dependent on IWK's feedback rather than independent study by regulator
 - ✓ Permit holders unhappy with IWK
- ✓ Impact of liberalization – based on an independent study
 - ✓ If the revenue declines by 5%, after tax IRR plunges to 0%
 - ✓ Expected to trigger losses to medium scaled operator within 2 years and large operator within 5 years
 - ✓ 96% of respondents in a survey conducted are not willing to pay more than RM 250 for the desludging services
- ✓ Other challenges
 - ✓ Undone 15 years worth of work
 - ✓ Enforcement on approximately 340,000 users who do not desludge septic tanks on schedule
 - ✓ Conflicts within community connected to CST

CASE STUDY: DESLUDGING SERVICES REGULATORY FRAMEWORK #6



CASE STUDY: DESLUDGING SERVICES REGULATORY FRAMEWORK #7

CONSIDERED TARIF STRUCTURE

Option I	Option II	Option III (proposed)	Option IV
<ul style="list-style-type: none"> ➤ Same rates for all category; ➤ Huge impact to residential consumers; ➤ IWK would earn profit with high profit margin more than 20% 	<ul style="list-style-type: none"> ➤ Non-residential rates higher than residential; ➤ Proposed rates lower than existing rates for residential (charged by MAJAARI); ➤ Revenue insufficient to cover OPEX; ➤ IWK would incur losses more than 20% 	<ul style="list-style-type: none"> ➤ Non-residential rates higher than residential; ➤ Huge impact to residential consumers (90% of total accounts are residential); ➤ Rates for residential based on 30m³ water consumption is more than average usage for residential consumers i.e. 48.5% below 20m³ (desludging bill higher than connected bill of majority of residential consumers) ➤ IWK earns reasonable profit margin around 10% 	<ul style="list-style-type: none"> ➤ Non-residential rates higher than residential; ➤ All consumers (desludging & connected) paying based on the same concept i.e. usage of water; ➤ Revenue insufficient to cover OPEX; ➤ IWK would incur losses around 10%;
➤ Average bill residential : RM18.92 / month;	➤ Average bill residential : RM9.60 / month;	➤ Average bill : RM15.00 / month;	➤ Average bill residential : RM8.00 / month;

PROPOSED FRAMEWORK

- ✓ Scheduled desludging services to be planned and implemented by public operators
- ✓ Legal action on owners for refusal of desludging services
- ✓ Creation of vendor program by operator to enable business growth of permit holders to provide the necessary support
- ✓ Tariff concept based on water usage volumetric charges with same tariff structure with connected services as **43%** of revenue from desludging services is used to support connected services.
- ✓ Unsuccessful trips of desludging tanker
- ✓ Pricing policy under the principle of 'user pay' and to encourage efficient use of water;
- ✓ Same regulations and implementation date for both connected and desludging services;
- ✓ To minimize impact on tariff increase, government to continue subsidy to IWK for period until they achieve full cost recovery of OPEX.
- ✓ To recommend to Minister on implementation of joint billing to achieve collection efficiency.

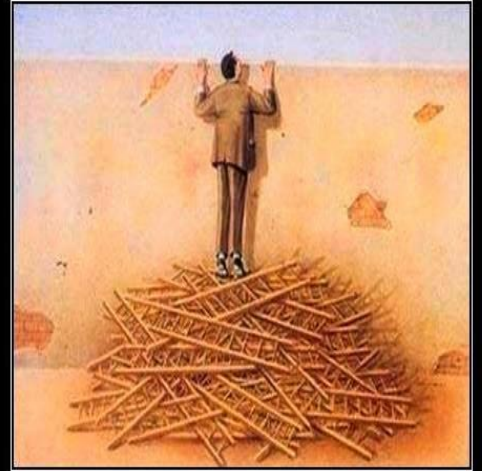
CASE STUDY: DESLUDGING SERVICES REGULATORY FRAMEWORK #8

Data gathering (facts) – Physical and Non Physical data

- Physical
 - Growth of on site systems and locality
 - Performance of on site systems (technology)
 - Sludge generation and treatment
 - Environmental impact – river water quality, disposal sites,
- Non Physical
 - Affordability of services and pricing
 - Acceptance of demand (reactive) and schedule (preventive) desludging
 - Competent and sufficient sector players – regulators, operators and contractors
 - Resource recovery options

Provide Legal Enablers For Fundamental Principles

- Sec 44 (1) Obligation of service licensee to desludge septic tanks as prescribed
- Sec 65 (1)Service licensee or permit holder must be given access for the purpose of of desludging
- Non compliance can be subjected to imprisonment and fines



It doesn't matter how many resources you have
if you don't know how to use them, they will never be enough

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WHERE IS THE MONEY – CAPEX & OPEX

Key Drivers for the Reforms

Two fundamental issues in the water industry are **efficiency and effectiveness** and **funding**. These factors are interlinked



Key Objectives

- Promote efficiency and effectiveness in the industry
- Derive a sustainable business model in long term that meet the interest of all stakeholders
- Adequately addressing the long term funding issue

Low Tariff

Capital Intensive Industry

Lack of CAPEX Funding

Minimal maintenance programs & infrastructure development

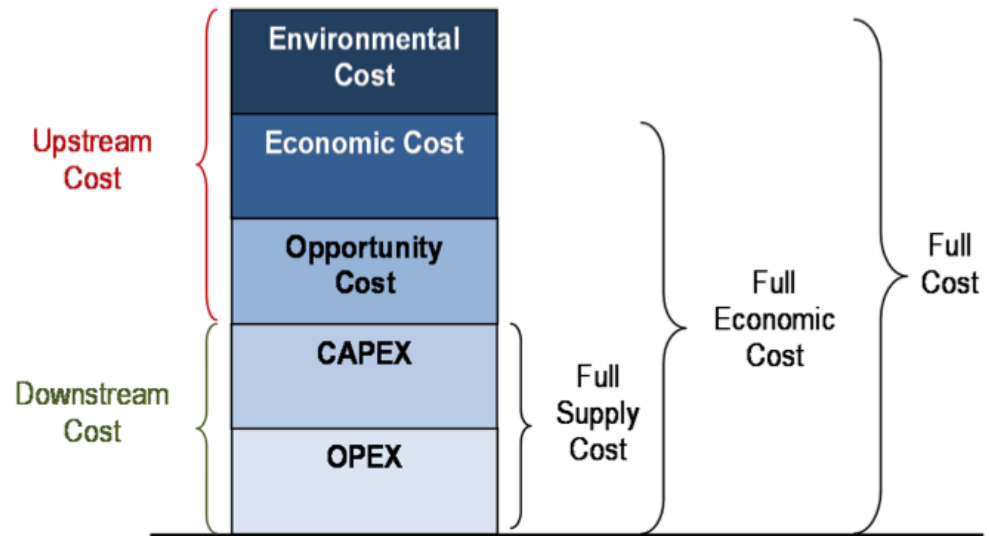
High Outstanding Loan

Inefficient and ineffective Service Delivery

Unprofitable and require substantial funding from Federal Government and private developers

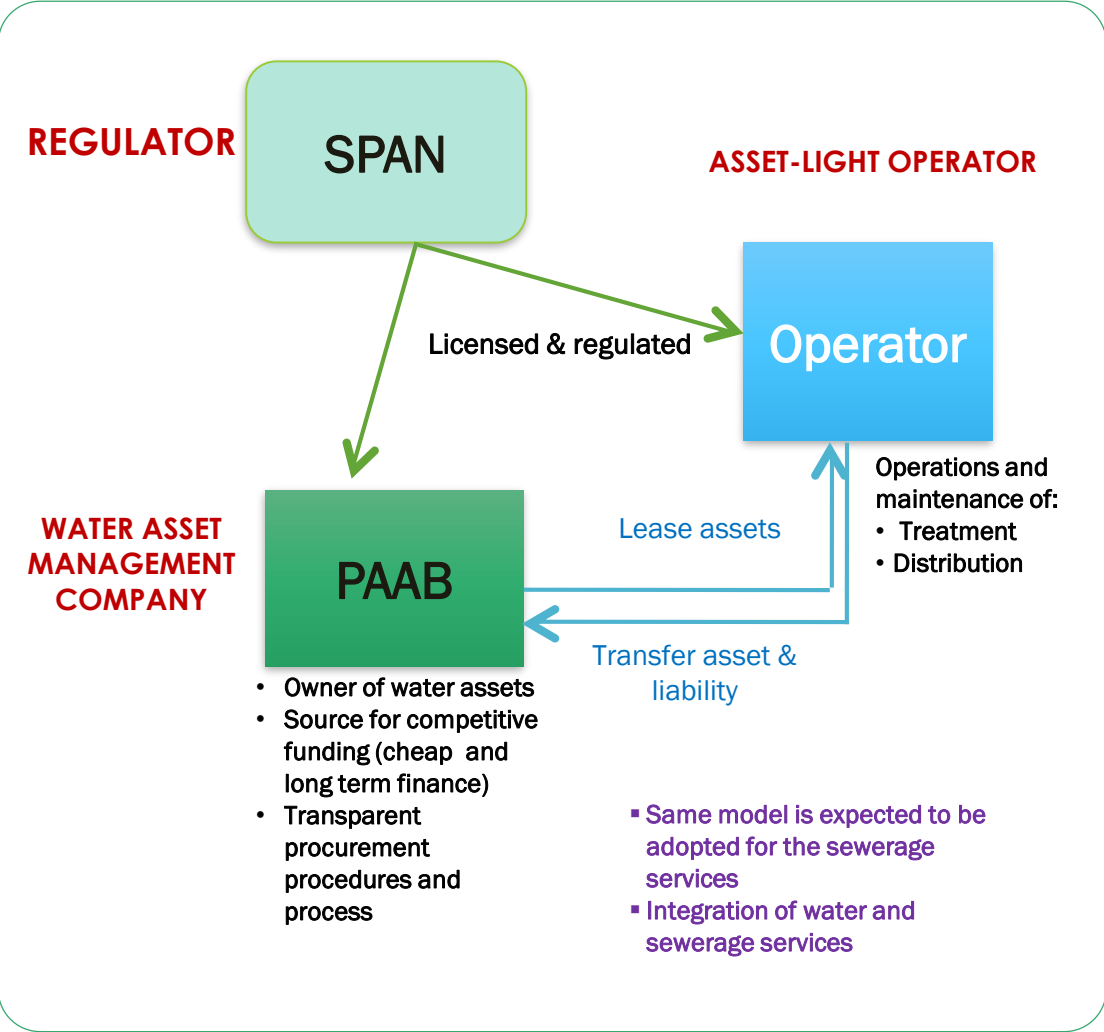
Requires business models to transform the industry for long term sustainable operations

Corporatization will lead to managerial/ financial autonomy clearer accountability

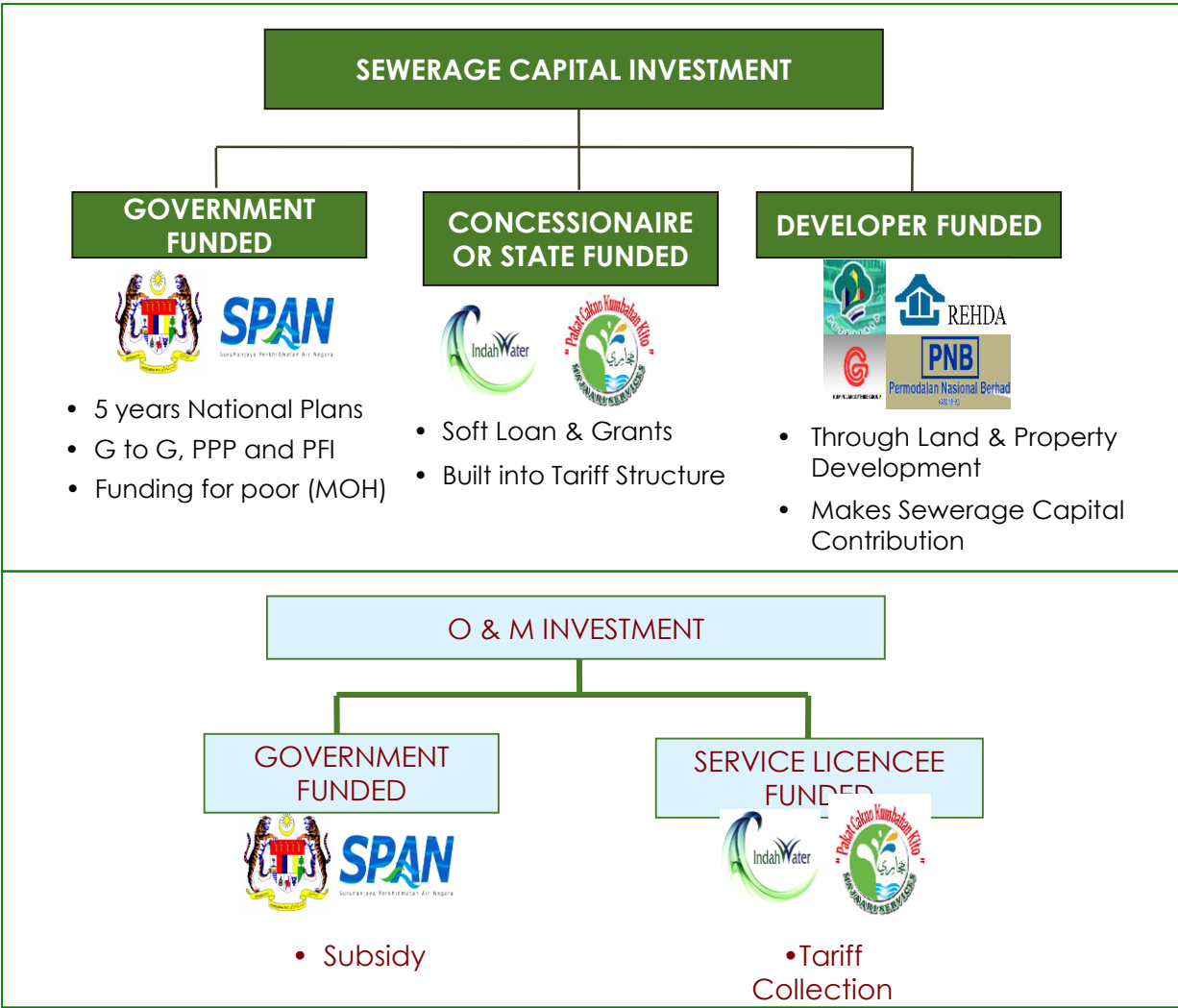


CAPITAL WORKS FUNDING SEWERAGE INFRASTRUCTURE

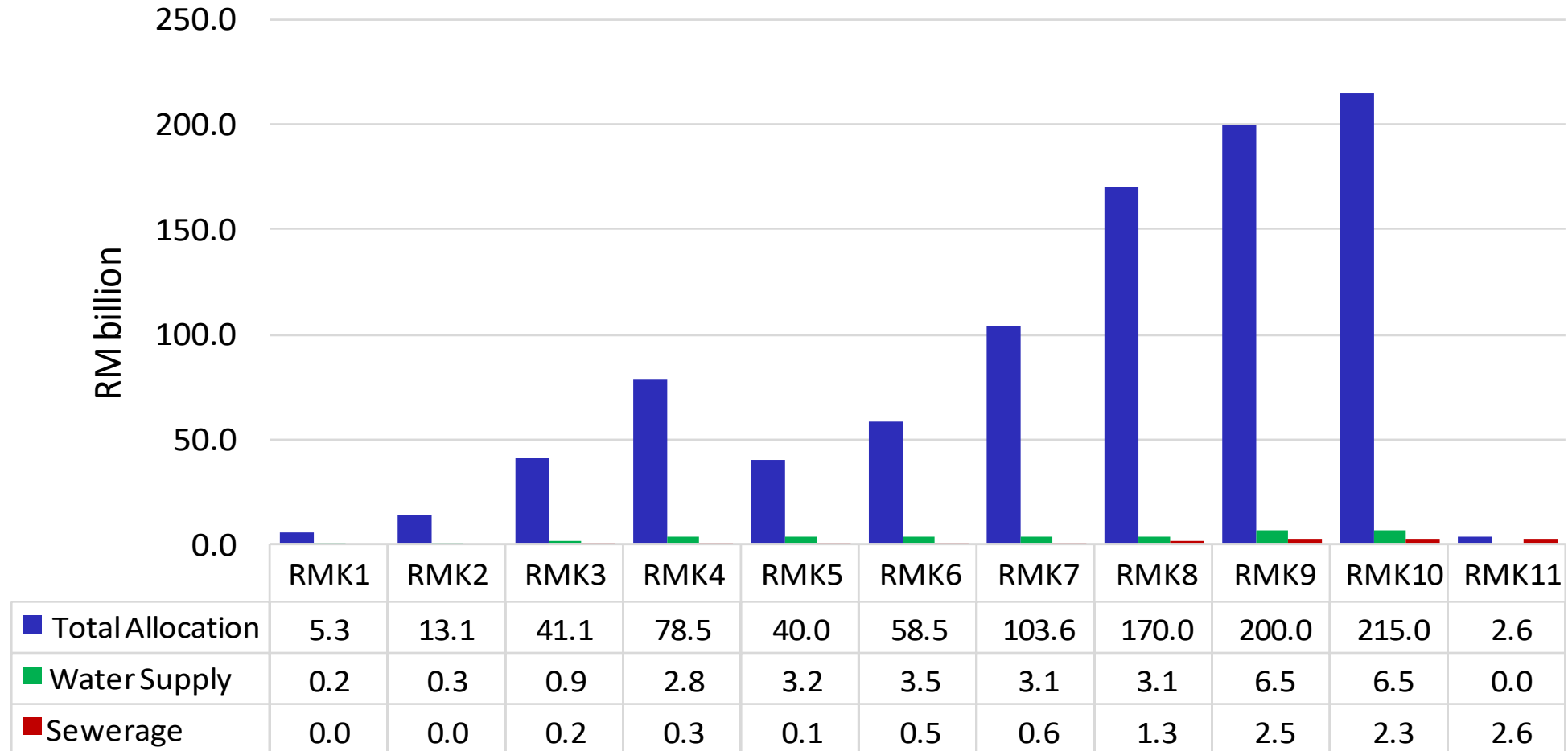
NEW ASSET LIGHT MODEL



EXISTING MODEL



INFRASTRUCTURE DEVELOPMENT BUDGET



Note:

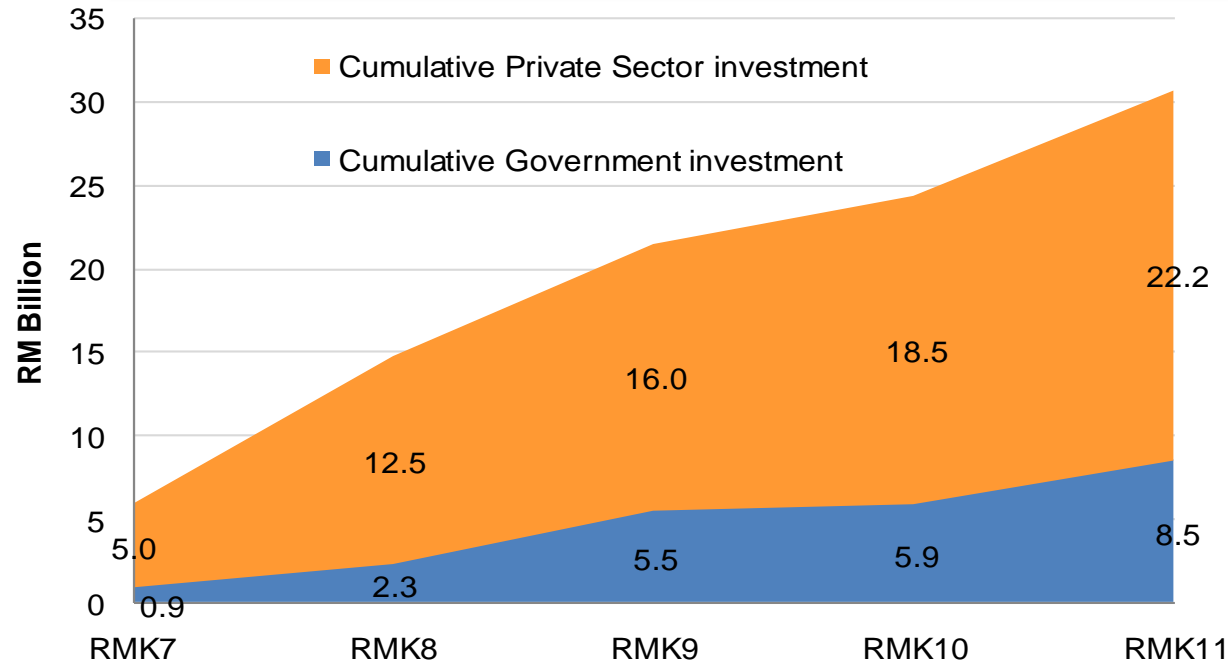
**Amount allocation for water supply is not available*

***For RMK-11, amount refers to shortlisted project for Rolling Plan No. 1 and subject to approval by EPU/KETTHA.*

Sources: Laporan Rancangan Malaysia, RMK 1-10 issued by the Economic Planning Unit (EPU).

Official website of Kementerian Penerangan Komunikasi dan Kebudayaan (KPKK), Kementerian Tenaga, Teknologi Hijau dan Air (KeTTHA), Pejabat Perdana Menteri (PPP), Malaysian Administrative Modernisation and Management Planning Unit (MAMPU), Utusan, STAR, New Straits Times (NST), Wikipedia, etc

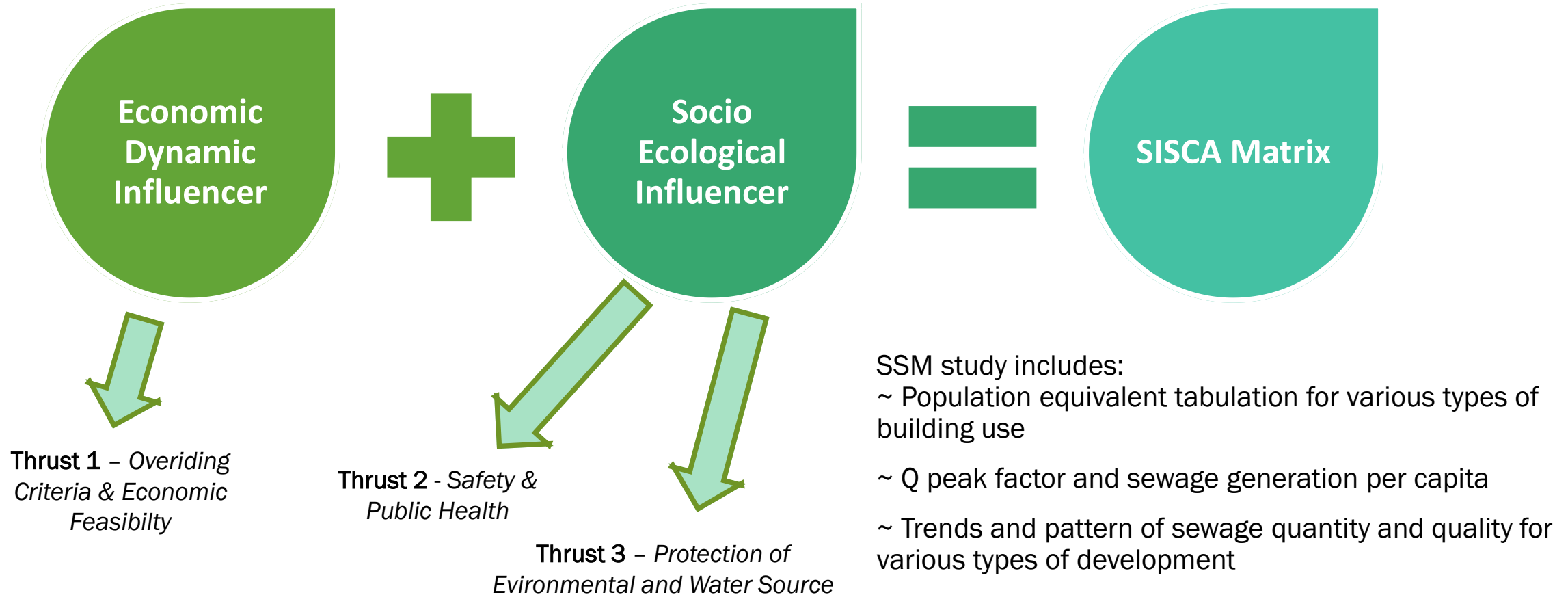
INVESTMENT FOR SEWERAGE INFRASTRUCTURE



- Base on current goals and approach and estimated RM 50 bil for next 30 years (RM 1.7bil/year for West Malaysia)
- Current RMK allocation is about RM 500 mil for Malaysia (about RM 250 mil for WM)
- SCC funds averaging about RM 250 million annually and cumulatively amounting more than RM 2 billion to-date since 2011
- Investment from private sector averaging about RM 500 million annually – diluted and not used strategically. Which currently causing more problems than delivering solutions
- Private developer funding should be consolidated and utilized through SISCA matrix.
- Whole life cycle cost of the works and services should be main consideration
- Short fall of strategic funding (government + SCC) about RM 1.2 bil a year. Net short fall (including private sector) = RM 200 mil a year

Type of Sewerage Capital Contribution	Amount (RM)
Connection	RM 316, 194, 731
Septic Tank	RM 12, 780, 581
Upgrading	RM 5, 466, 117
Sludge Treatment Facility	RM 2, 949, 364
Total for 2016	RM 337, 390, 793

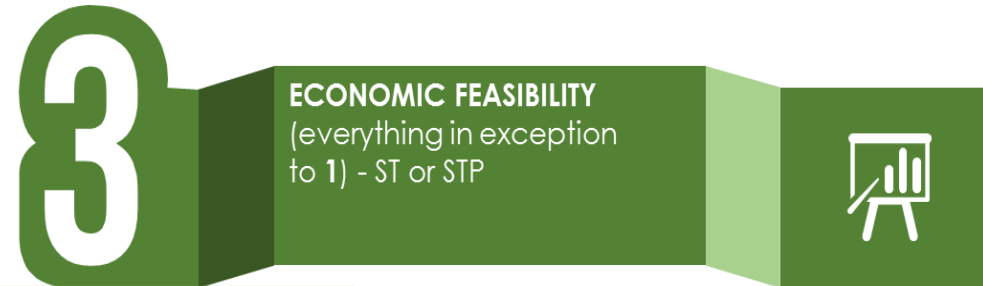
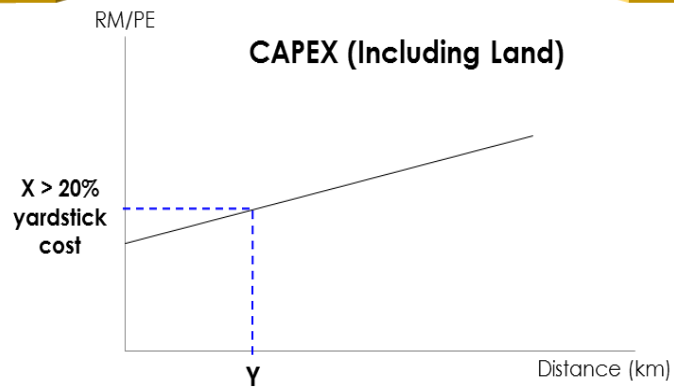
PLANNING GUIDELINE: SEWERAGE INFRASTRUCTURE SELECTION CRITERIA (SISCA)



TILL TO DATE:

1. 150 PE AND ABOVE MUST CONSTRUCT STP SINCE 1994
2. BASE ON THE PE TABULATION ESTABLISHED IN LATE 1980'S

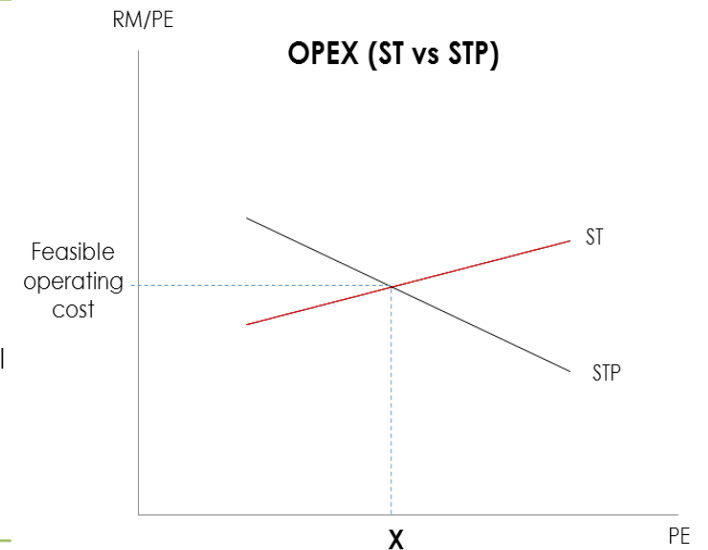
PLANNING GUIDELINE: SISCA – ECONOMIC DYNAMIC INFLUENCER



Feasible Operating Cost
(i.e. cut-off capacity – X PE)

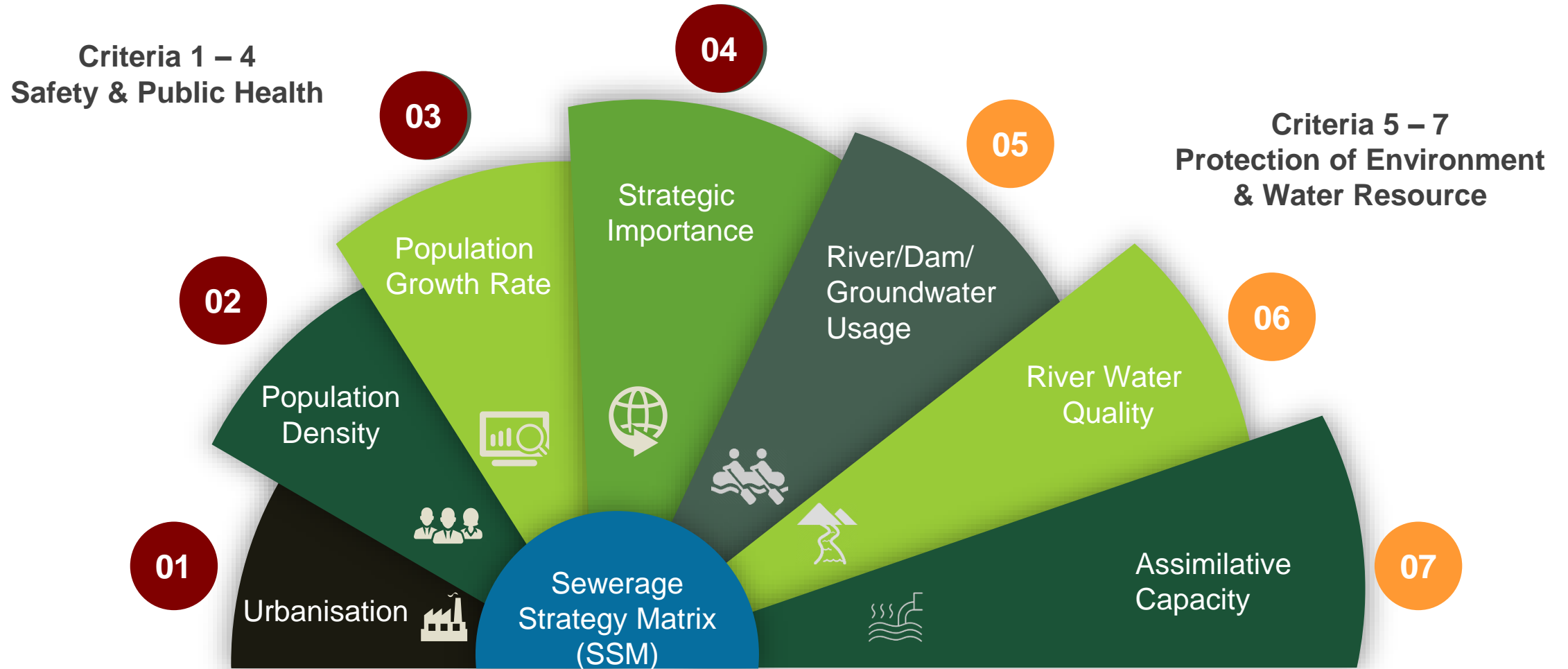
Operating Cost consists of :

- a) Regulatory cost
 - monitoring operators
 - Monitoring users
- b) Environmental cost
 - Failure on compliance



Holistic Whole Life Cycle Cost of Sewerage Infrastructure and Services

PLANNING GUIDELINE: SISCA – SOCIO ECOLOGICAL INFLUENCER



PLANNING GUIDELINE: SOCIO ECOLOGICAL INFLUENCER MATRIX

								Minimum		Maximum	
No.	CRITERIA	RANGE					WEIGH-TAGE	RANGE	SCORE	RANGE	SCORE
1	Urbanization (10%)	Rural	Small town	District Capital/Town	State capital	Major city					
		Outside local authority area	Within local authority area (other small towns besides the District Capital)	District Capital (e.g. Majlis Perbandaran Klang)	Administrative Capital of the State (e.g. MBSA)	All major cities with population above 500k (based on the Statistical Department of Malaysia)					
		1	2	3	4	5					
2	Population density (10%)	very low	low	medium	high	very high					
		<100 people/km2	101 -500 people/km2	501 - 1000 people/km2	1001 -1500 people/km2	>1500 people/km2					
		1	2	3	4	5					
3	Population Growth Rate (10%)	low	medium	high							
		< 1%	1 - 3%	> 3%							
		1	3	5							
4	Strategic importance (10%)	Agriculture	Industrial	Administrative & Economic Centre	Residential	Tourism					
		Outside local authority area	Factories	Town and cities	Housing area	Tourist attraction					
		1	2	3	4	5					
5	River/Dam/ Groundwater Water Use (25%)	Nil	Non Potable - Not Critical	Non Potable - Critical	Potable Water						
		No usage	No / minimal body contact	Anything involves body contact (tourism / recreational, aquaculture / ablution)	For drinking purposes						
		1	2	4	5						
6	River water quality (15%)	Class V	Class IV	Class III	Class II	Class I					
		None of the rest	Irrigation	Extensive treatment required for water supply & fishery	Conventional treatment required for water supply & fishery Recreational use with body contact	Treatment not required for water supply & fishery					
		1	2	3	4	5					
							100		100		500

PRESENTATION OUTLINE

- TONE SETTING - SNAPSHOT IN A GLANCE
- EVOLUTION OF REGULATORY LANDSCAPES
- PRIVATE SECTOR PARTICIPATION
- POTENTIAL TAKE AWAY POINTS

Take Away Points #1

- Rely on DATA & FACTs – opinions leave it at coffee table
- Effective, sufficient and meaningful consultation with all the stakeholders in drafting and implementation of policies.
- Depoliticize segments that are politically sensitive. Unload the pressure of political masters.
- Create vibrant environment to attract private sector participation. There is not a single problem a government faces can be resolved by government alone. Leverage to accelerate growth.
- Identify industry and sectoral champions. Essential to drive forward
- Starting some where is better than not starting at all..

Take Away Points #2

- Procedures are not regulatory objectives and outcomes
- Strategic structural changes at organizational and institutional levels
- Power MUST BE with responsibility & accountability – hold government agencies and regulators accountable
- Allocation of skills and resources must be appropriate to the entities, roles and responsibilities. Reassign or second officers to relevant agencies. Don't reassign the tasks and functions to the preferred agencies.
- **Enforcement!!!** compound someone is good and sending someone behind bars is better
- Constant... constant... constant.... competency building

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Thank You

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