

TRANSFORMING AND SCALING INCLUSIVE SANITATION

Roshan Shrestha, Deputy Director, Water, Sanitation & Hygiene

OVERALL WSH VISION & STRATEGY

Our strategy consists of four key initiatives, which build on one another towards the goal of safe sanitation for all.

The building blocks of change:
deeply dependent on one another



TRANSFORMATIVE TECHNOLOGY & COMMERCIALIZATION



CITY-WIDE INCLUSIVE SANITATION



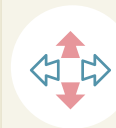
POLICY, ADVOCACY & COMMUNICATIONS

Engage governments to build political will, strengthen policies, regulations, institutions, and increase investments in inclusive sanitation

Enable systems change within public service authorities to deliver inclusive sanitation, in partnership with development & financing partners

Develop & deploy pathogen-killing on-site solutions, stimulate market entry & growth, and drive sustainable, widespread adoption

GENDER & STRATEGIC LEARNING



WSH VISION

Through diverse and equitable partnerships, fundamentally **transform the sanitation sector to reach universal use of sustainable sanitation**, contributing to better health, economic, and gender equality outcomes for the world's underserved



WE FOCUS ON SUB-SAHARAN AFRICA & SOUTH/SOUTHEAST ASIA

3.6B people globally lack access to safely managed sanitation. Our areas of focus are the regions with the greatest need.



WE ARE DEVELOPING A TRANSFORMATIVE TECHNOLOGY PORTFOLIO THAT FOCUSES ON ON-SITE, DECENTRALIZED SANITATION

REINVENTED TOILETS



Household (HRT)



Community (CRT)

OMNI-PROCESSORS



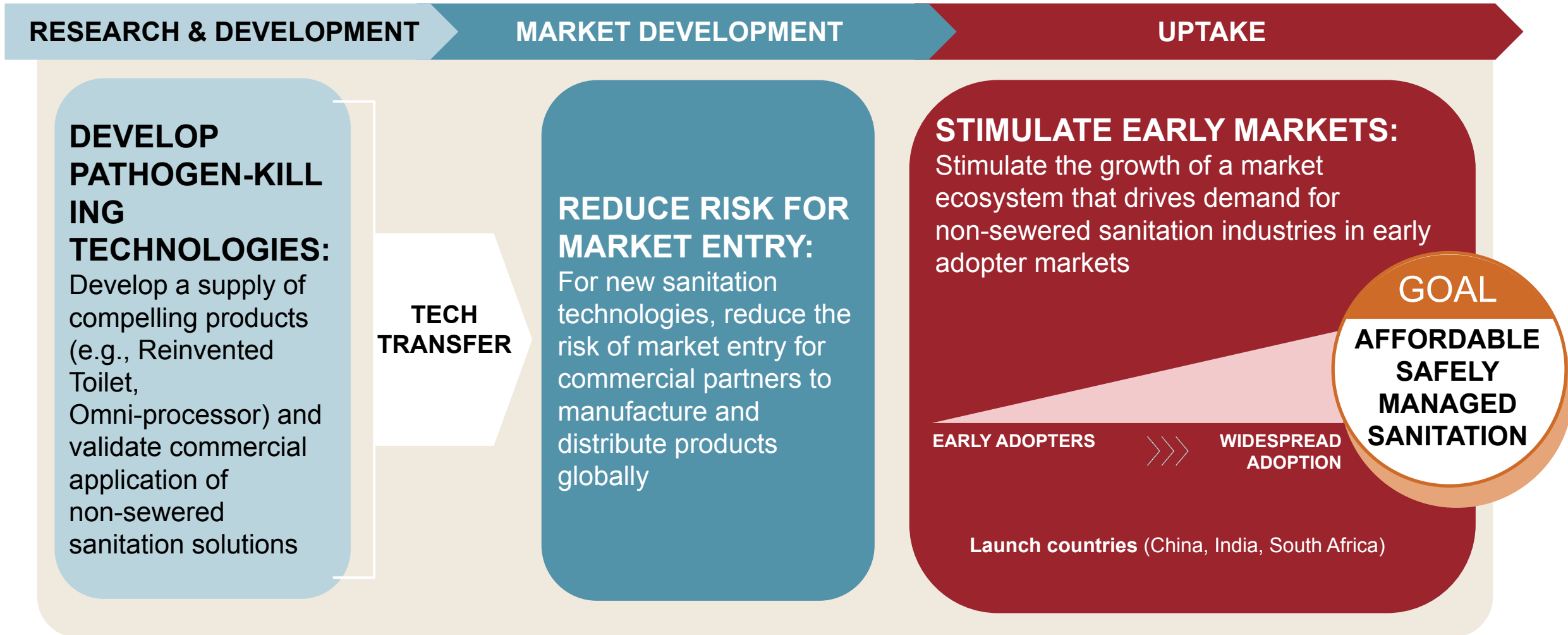
Household scale

Multi-unit scale

Processing



TRANSFORMATIVE TECHNOLOGIES & COMMERCIALIZATION



FOUNDATION-SUPPORTED COMMERCIALIZATION ACCELERATOR PROGRAMS WILL HELP DRIVE POLITICAL WILL AND SANITATION PLANNING

An “RTAP” (RT Accelerator Program) will be set up in key geographies to establish a conducive supply-side and demand-side environment for RT adoption by driving:



R&D to overcome technical challenges and de-risk product and component innovation

Awareness & Perception

- Build awareness and change perception of decentralized sanitation



Marketplace Readiness

- Government engagement to enhance demand for sanitation, value of pathogen removal and water reuse
- Support implementation of international product standards (ISO 30500, 31800)
- Engage DFIs to facilitate awareness, access to financing



Early Adoption

- Identify early adopter opportunities & early market entry requirements
- Develop RT value proposition and economic positioning



Technical & GTM Assistance

- Develop product requirements for identified customer segments
- Assist in pilot and demonstration projects
- Guide GTM strategy and tactics



CITY-WIDE INCLUSIVE SANITATION: A Public Service Systems Approach



CORE CWIS OUTCOMES



EQUITY

Services reflect fairness in distribution and prioritization of service quality, prices, deployment of public finance/ subsidies



SAFETY

Services safeguard customers, workers and communities from safety and health risks by reaching *everyone* with safe sanitation



SUSTAINABILITY

Services are reliably and continually delivered based on effective management of human, financial and natural resources



CORE CWIS FUNCTIONS

RESPONSIBILITY

Authority(s) execute a clear public mandate to ensure safe, equitable and sustainable, sanitation services for all

ACCOUNTABILITY

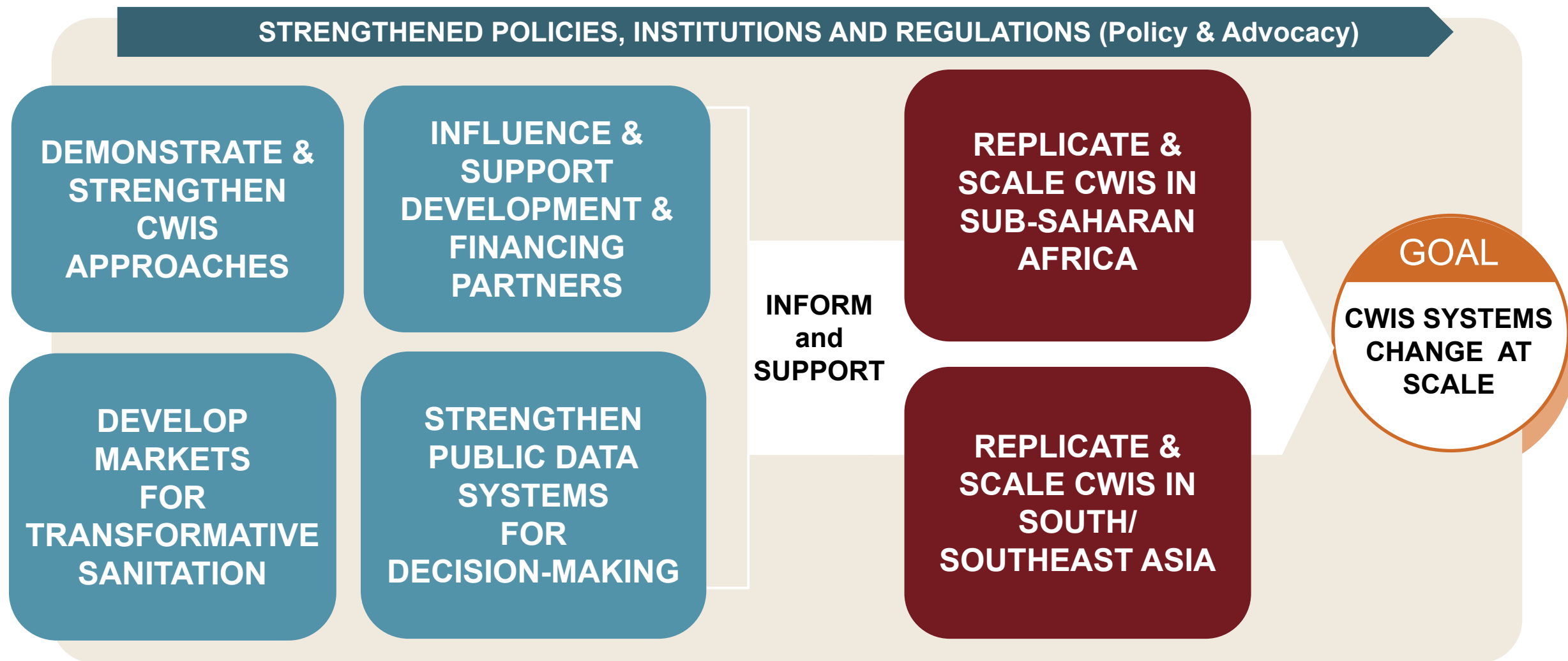
Authority's(ies') performance against mandate is monitored and managed with data, transparency, and incentives

RESOURCE PLANNING & MANAGEMENT

Resources—human, financial, natural, assets—are effectively managed to support execution of mandate across time/space

THE FOUNDATION'S CWIS INITIATIVE: AT A GLANCE

The CWIS initiative focuses on transforming public service systems to achieve inclusive urban sanitation at scale



CURRENT COUNTRIES ENGAGEMENT IN ASIA

Focus Country – India and Bangladesh

- Deeper engagement with national govt, state govt. and municipalities
- Policy and Advocacy intervention
- Demonstration, Replication, and scaling CWIS
- Capacity Building
- Launching technologies (RT and OP)

Moderate Engagement Countries

- **Nepal:** Policy and Advocacy support for CWIS-FSM policy and regulation adoption; measurement and tracking; and capacity building for scaling
- **Indonesia:** Exploring engagement with IsDB for SANIMAS phase 2; Market Assessment of RTs and OPs
- **Pakistan:** Market Assessment for innovative technologies (RTs and OPs)

Engagement Through Partners

- **Other countries in the region:** Knowledge and capacity building of IFIs and regional development/advocacy partners to integrate CWIS in their program; explore market opportunities of RTs and OPs

WSH-SPECIFIC REGIONAL STRATEGY

BUILD AWARENESS OF INCLUSIVE SANITATION TECH

Build greater awareness, knowledge and positive perceptions of transformative sanitation technologies as a critical part of 21st Century sanitation planning for people and communities.

PAC 1 / ICO 1

STRENGTHEN GLOBAL POLICY ENABLING ENVIRONMENT



Ensure high-level advocacy and coordination on inclusive sanitation policy and finance with global and regional UN bodies, national government leaders and NGOs.

PAC 3 / ICO 1

DEMONSTRATE, ENABLE & STRENGTHEN CWIS APPROACHES



Demonstrate what CWIS service delivery looks like at city level by improving the performance of urban sanitation services, and institutionalize systems functions at national level by providing rigorous, professional guidance and tools to promote CWIS norms and practices.

CWIS 1

INFLUENCE GLOBAL DEVELOPMENT & FINANCING PARTNERS ON CWIS



Shift financing and operational priorities within IFIs, local financing institutions and investors away from traditional sewer infrastructure investment & towards scaled adoption of CWIS, Non-Sewered Sanitation (NSS) & innovations that reach the poor.

CWIS 2

COMMERCIALIZE & DEVELOP MARKETS FOR TRANSFORMATIVE SANITATION PRODUCTS



Catalyze uptake of RT and OP via industry and market development efforts, incl. technology & business model demonstrations, RT accelerator platforms, market analysis assessments, risk assessment and mitigation for Commercial Partners, etc.

CWIS 3 / TTC 4 & 5

REPLICATE & SCALE CWIS ACROSS SOUTH / SOUTHEAST ASIA



Contribute to country policy advancement, institutional & human capacity development, sector coordination, increased investment in CWIS-type projects and strengthening of key regional platforms.

CWIS 4 / ICO 2

STRENGTHEN PUBLIC DATA SYSTEMS



Establish sanitation data and measurement mechanisms and ownership to inform service delivery, accountability & financing decisions, and to track progress against SDG 6.2 commitments.

CWIS 6

ADDRESS GENDER INEQUALITIES IN SANITATION



Address gender inequalities in sanitation by mainstreaming gender internally in the WSH strategy and investments, and externally in partners, national sanitation policies, and programs.

GSL 2

Proposed revision of BOWs

BOW 1: Advance policy for FSM, CWIS and innovative tech

AGENDA SETTING

Engagement with National Govt. & relevant departments, regulatory authorities, policy-makers and development partners

- National Urban Sanitation Policy (NUSP) with FSM & CWIS frameworks launched, adopted, funded and implemented by select states
- Build champions for CWIS and Innovative tech (govt. stakeholders, industry & sector leaders, development partners) through strategic communication plan
- Institutional, regulatory & data systems to implement, scale-up and monitor CWIS (and FSM) in place (national and select states)
- IIT Palakkad established as Global Sanitation Center of Excellence driving engineering, optimization, standards, and cutting-edge research for innovative sanitation tech.
- Enable work on standards, codes, and guidelines for wastewater and biosolid treatment, aligned to ISO standards, to drive adoption of innovative tech.
- Establish network of labs for quality assurance, monitoring and evidence generation for new tech
- Empanelment of Innovative tech in Govt. technical committees/ platforms (e.g. PSA, NEERI, CPHEEO)

BOW 2: Build capacities to scale & sustain FSM, CWIS and adopt innovative tech

CAPACITY BUILDING

Ecosystem capacity development – engaging with state govt., training institutions, WSH anchor partners, IFIs, donor agencies, project management/ design consulting firms

- QA mechanisms and capacities embedded within states to ensure 500 FSTPs + 200 co-treatment plants are effectively operating at >50% utilization
- Odisha state scale up CWIS and 2 additional states initiate replication of CWIS in xx cities
- 5 universities and training institutions have FSM & CWIS courses & trainings integrated in their programs
- \$\$ of IFIs (ADB, WB, AIIB, JICA) projects are aligned to CWIS and promote adoption of innovative tech
- Enabling environment (regulatory and procurement systems) set up in early adopter select states (TS, TN, OD, MH - TBD) and xx pilots set up for OPs/RTs
- xx PMCs, institutions have capacities to provide consulting support to govt. / private sector on designing projects with RTs/OPs
- 3-4 domestic institutes for inclusive sanitation have institutional capacities & sustainable operating models
- Gender COE functional, serving as a resource for state govts and anchor partners

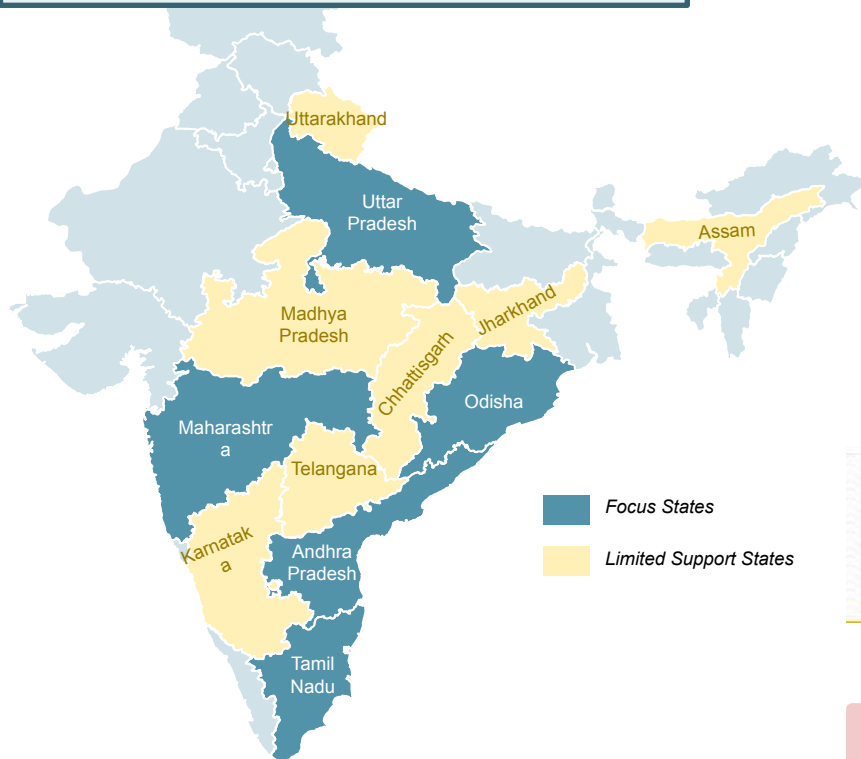
BOW 3: Stimulate Innovative tech adoption (OP and RT) in India

COMMERCIALIZATION OF TECHNOLOGIES

Engagement with Private sector manufacturers, commercial players, industry bodies/ associations, private sector buyers, priority segment stakeholders

- Technical pilots and field demos in priority segments + feedback/ data for product refinements and certifications/ clearances
- At least 3 CPs each for RT and OP supplying units in the market (CPs can be standalone and/ or consortium of partners)
- 5 OPs operational for Govt.-funded projects by 2025; At least 100 RTs in priority segments set up
- Establish industry-wide product/ plant specifications for commercialization and scalability
- xx\$ of financing mechanisms/ options set up (to buy-down risk, to incentivize CPs and for project-specific working capital)
- Engage industry bodies and private sector buyers to build salience of innovative tech
- Establish aftersales/ servicing market to sustain operation of technologies

Our partnership extends with multiple states across the country through intensive technical support units in 5 states and additional lean support in 7 states

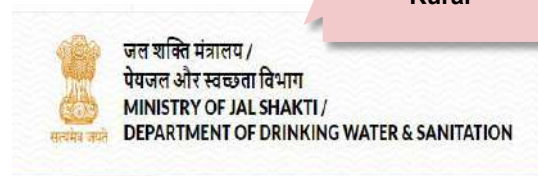


Partnerships with central ministries and departments



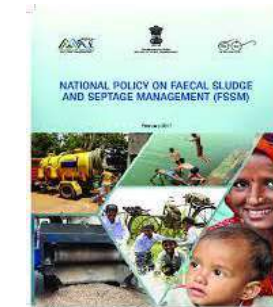
Program Management Unit supports SBM Urban at MoHUA

Lean support to DDWS on SBM Rural



Center of Excellence being set up with Hon' Principal Scientific Advisor of India

Successes in India driven by national and state governments



National Policy on FSM was issued by Ministry of Urban Development in February 2017 and has been adopted by 20 states in India

SBM 2.0 launched in October 2021 – prioritizing treatment of wastewater and fecal sludge beyond access to toilets

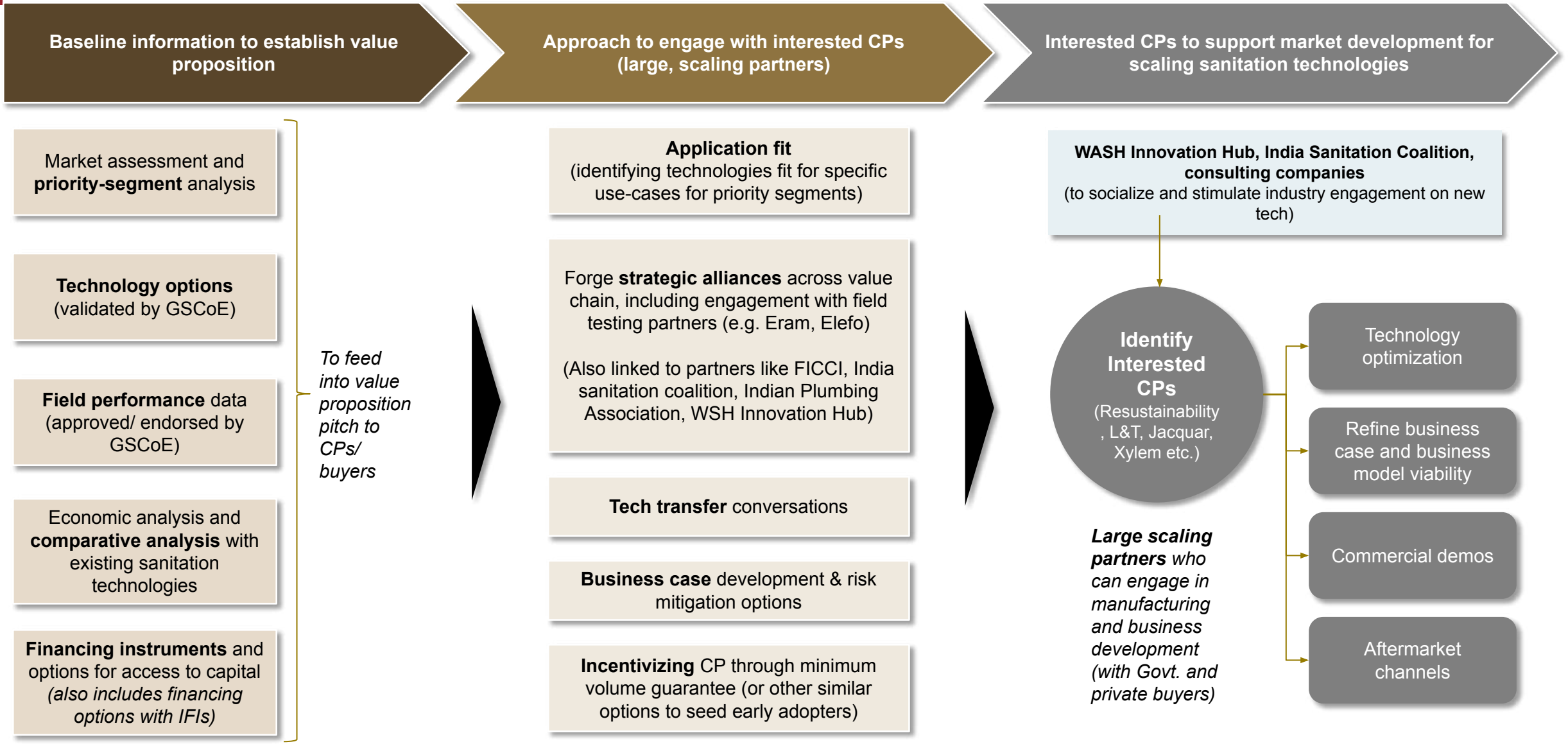


Over 350 Fecal Sludge Treatment Plants (FSTPs) Operational in cities and towns of India

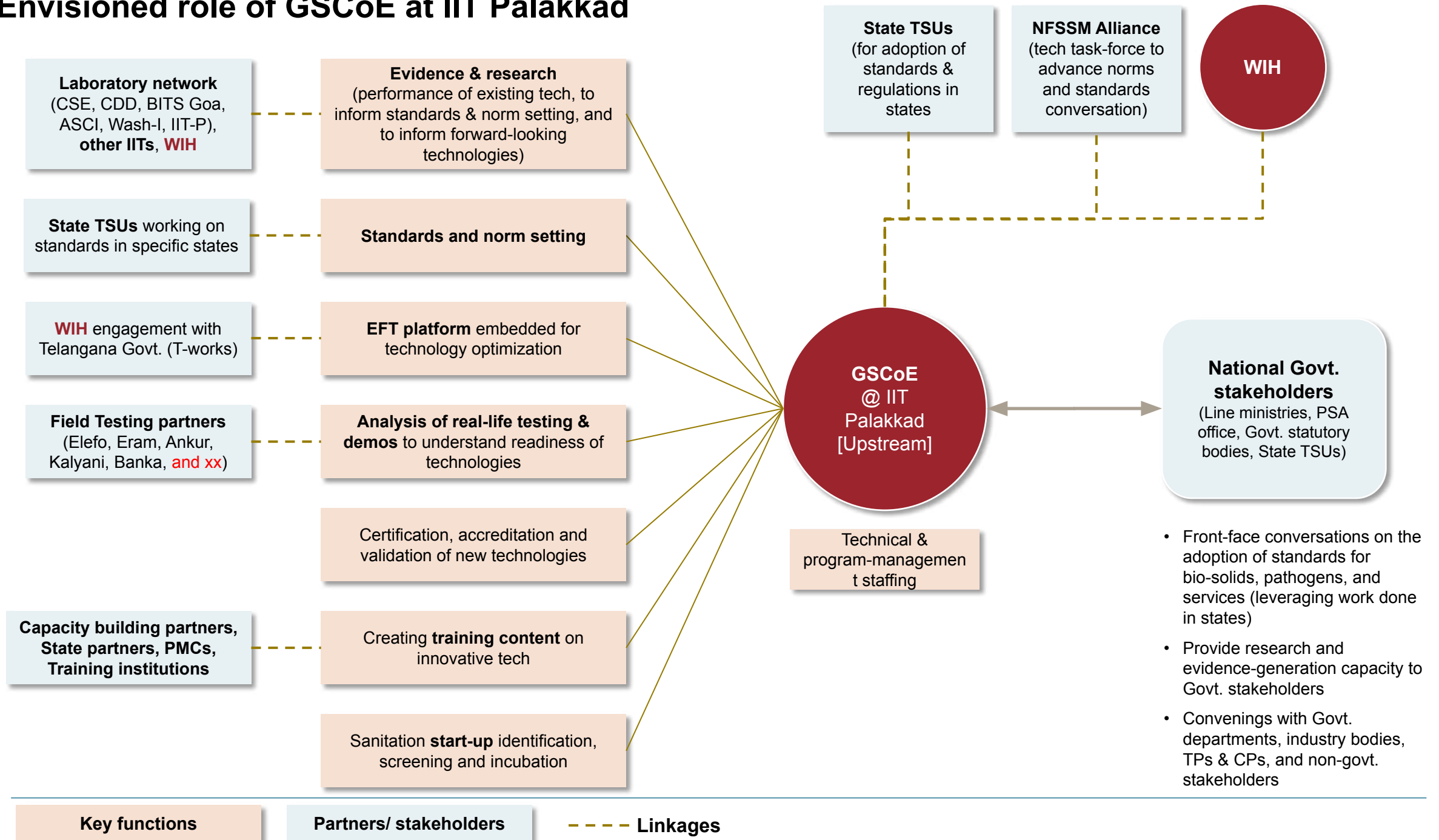
National and select state governments focusing on safety and welfare of sanitation workers



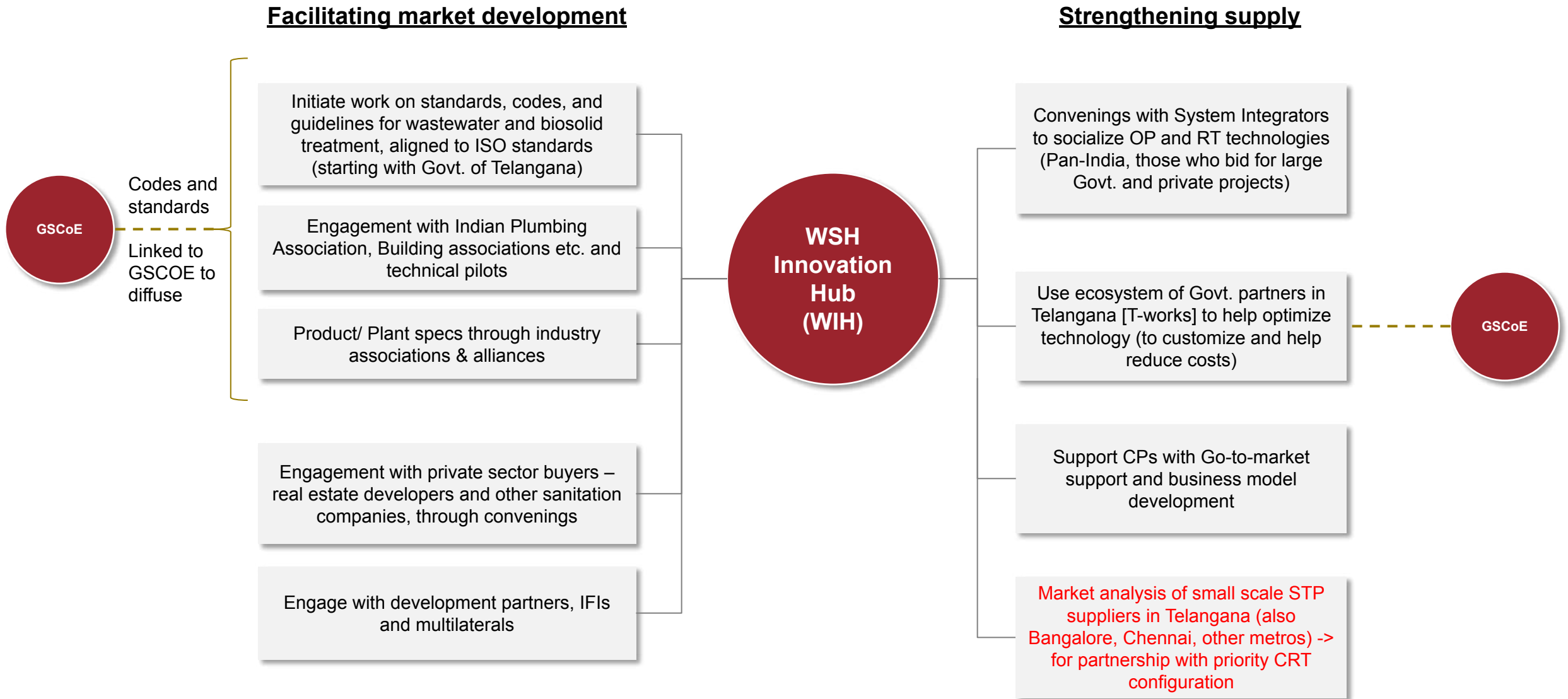
Operational chain for TTC supply



Envisioned role of GSCoE at IIT Palakkad



Envisioned role of WSH Innovation Hub



State-level diffusion of transformative tech. adoption

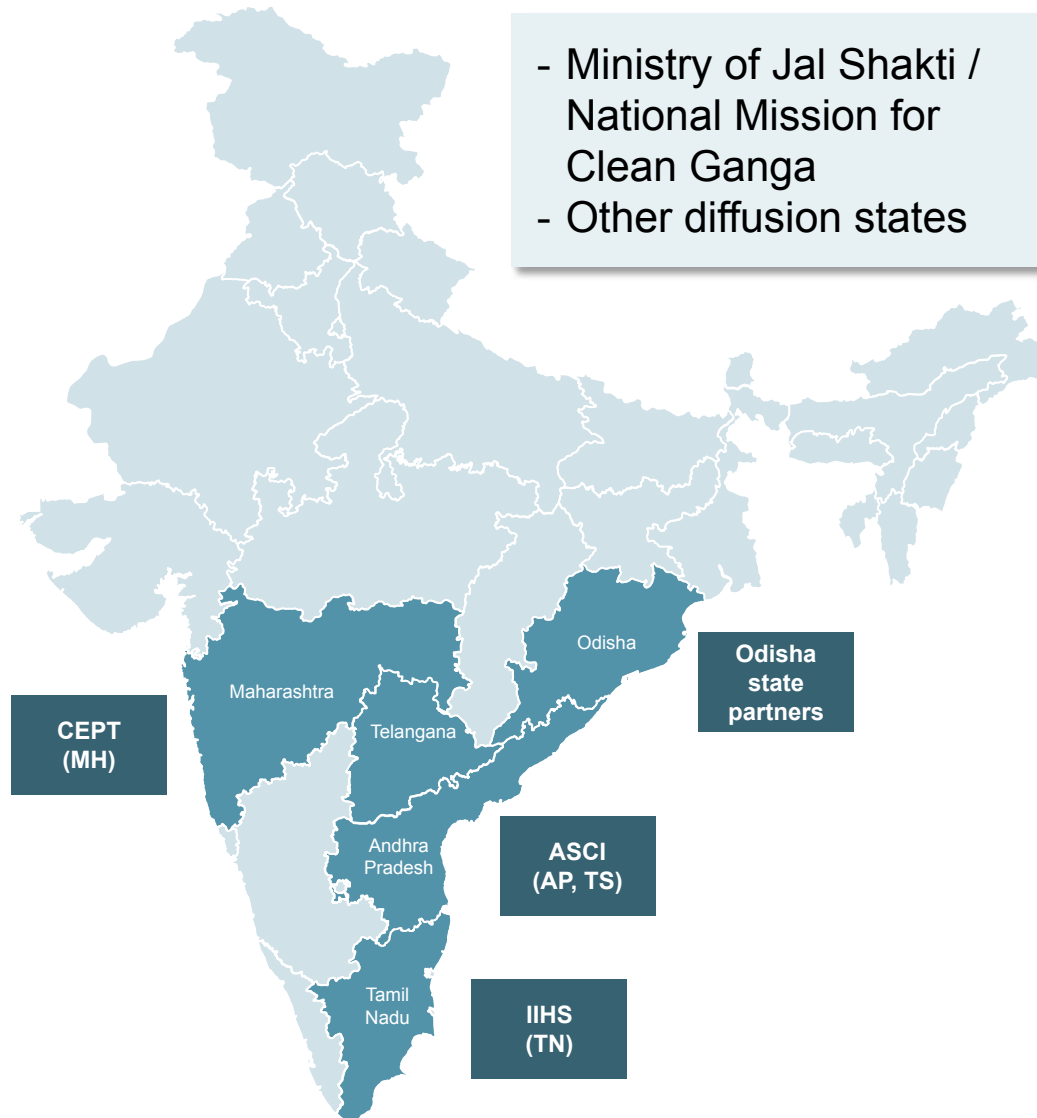
GSCoE
@ IIT
Palakkad

- standards and norms
- data/analysis : tech.
performance / validation

Diffusion through TSU / Focus State Partners

- Engaging with State Govts
- Enable state-level adoption
of standards / regulations
- Supporting procurement
guidelines
- Leveraging resources
available through Govt.
programs/ missions and IFIs
- Support govt. pilots

- Ministry of Jal Shakti /
National Mission for
Clean Ganga
- Other diffusion states



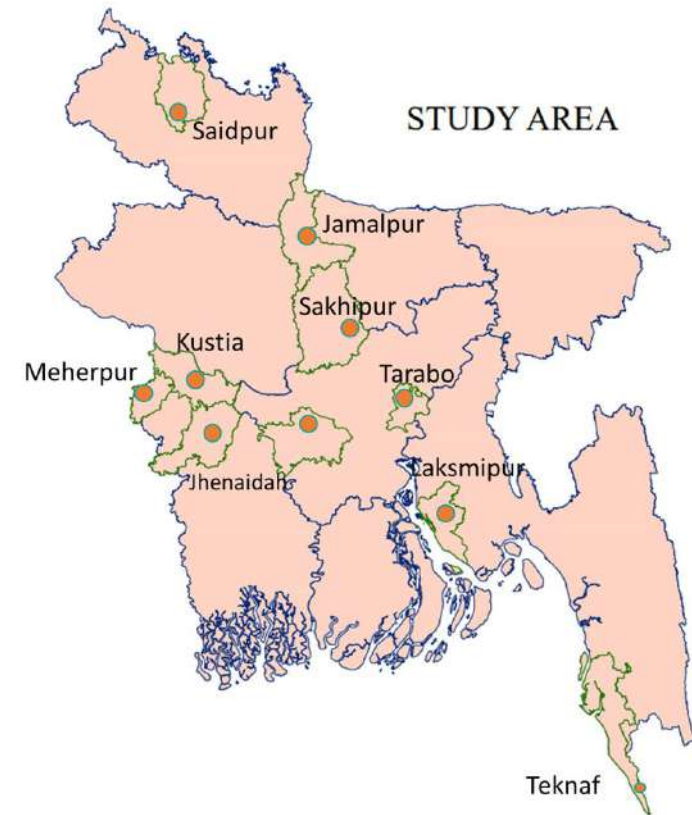
Capacity building of institutions to support project designs

- PMC: IPE
Global, CDD
- CB Hubs:
GWSC etc.
- System
Integrator:
Atlas/VAPCOS

CWIS MENTOR CITIES IN BANGLADESH

- ITN BUET and partners established have established Ten towns (Lakshmipur, Faridpur, Meharpur, Saidpur, Shakhipur, Khusita, Jhennaidah, Jamalpur, Taabo and Teknaf) as learning centers for CWIS in Bangladesh.

Mentor Cities: CWIS Score (out of 600)



Summary of key Asia-regional hubs (1/3)



Summary of key Asia-regional hubs (2/3)

Key functions and operational areas	India	Bangladesh	Nepal	Indonesia
Laboratory networks	CSE, CDD, BITS Goa, ASCI, Wash-I, IIT-P	INT BUET	ENPHO	ITB, AIT
	... CSE (Global South Alliance)			
Academic partners to strengthen research & evidence ecosystem	IIT-P, BITS Goa, CEPT University, Manipal University	KUET, RUET, CHUET	KU, PU, TU	...
	... GSGS			
Community Engagement	FANSA India CFAR; UMC; Seva	FANSA Bangladesh	FANSA Nepal	UCLG
	... TBD - FANSA			

Summary of key Asia-regional hubs (3/3)

Key functions and operational areas	India	Bangladesh	Nepal	Indonesia
Market development, and engagement with technology partners/ manufacturers	WIH	...	...	...
Work on standards & norms, Testing & validation of technologies	GSCOE/IIT-P	...	NBSM	...

INFLUENCE & SUPPORT DEVELOPMENT & FINANCING PARTNERS

We partner with key development partners to influence urban sanitation finance

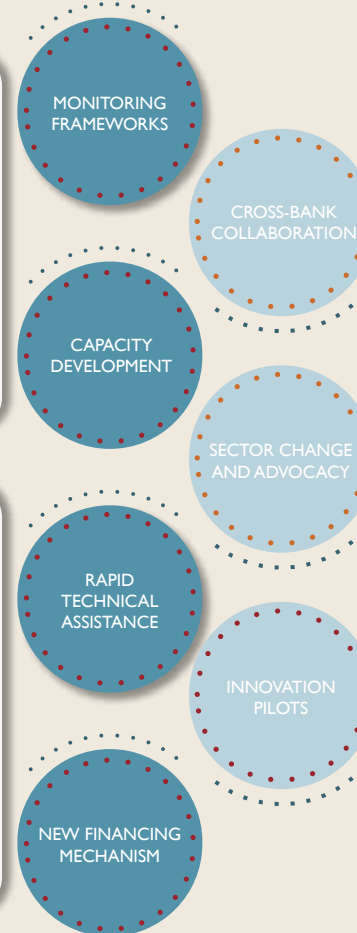
GOALS

- 1 **Urban sanitation lending practices are shifted** within 5 priority DFIs through progressive improvements to operational systems & monitoring, and increase in CWIS-aligned projects
- 2 **Priority UN, development and other global partner institutions adopt CWIS frameworks and tools**, institutionalizing inclusive sanitation as a priority element of their policies, strategies, operations and programs.

HOW WE'LL GET THERE

- Track SDG6 and adoption of CWIS at the project level
 - Incorporate CWIS into banks' operational guidance, sectoral strategies, and capacity building programs
 - Build awareness for innovative technology and identify / plan for reference projects
- Mainstream CWIS into key policies, programmatic guidance and operational processes for priority UN agencies
 - Support national data systems strengthening and city service plans
 - Strengthen coordination through DFIs / UN agencies / bi-laterals working groups to accelerate CWIS adoption, financing, and systems strengthening

PRIORITIES



PARTNER SUPPORT THROUGH TA HUBS

TA Hubs provide assistance to development banks and other development partners in the **planning, designing and implementation of CWIS-aligned projects**.

-  Improve quality of project preparation & implementation
-  Accelerate project cycle timelines & remove pain points
-  Incorporate innovation to drive adoption of RTs & OPs
-  Build networks of qualified, experienced firms to bid on projects
-  Provide consistent metrics & knowledge sharing

Global Water and Sanitation Center to support IFIs and Govt



CITY WIDE INCLUSIVE



SANITATION (CWIS)



NETWORK OF EXPERTS

Available resources within the I/NGOs & specialized organizations in South & Southeast Asia & globally pooled together as **'technical partners'**



ENGAGING VARIOUS DEPARTMENTS, ALUMNI & NETWORK

- COMPUTER SCIENCE AND INFORMATION MANAGEMENT (CSIM)
- REMOTE SENSING AND GIS (RS & GIS)
- URBAN INNOVATION AND SUSTAINABILITY (UIS)
- ENVIRONMENTAL ENGINEERING AND MANAGEMENT (EEM)
- WATER ENGINEERING AND MANAGEMENT (WEM)
- CLIMATE CHANGE ASIA
- ARTIFICIAL INTELLIGENCE CENTER
- GEOINFORMATICS CENTER
- AIT ENTREPRENEURSHIP CENTER
- **AIT SOLUTIONS**
- AIT EXTENSION



AIT
Asian Institute of Technology

AS A **CENTER OF EXCELLENCE**

- TECHNICAL ASSISTANCE HUB (TA HUB)
- CAPACITY BUILDING
- ADVOCACY
- IMIS PLATFORM
- RESEARCH
- MARKET DEVELOPMENT

AS A SERVICE PROVIDER TO

REGIONAL CLIENTS

BANKS



DEVELOPMENT PARTNERS
& GOVERNMENTS

REGIONAL INITIATIVE - TA HUB

Influencing close to
\$1B in CWIS-inclusive investments

FSM / NSS INTEGRATION



- Develop a Comprehensive Faecal Sludge Management Program for 18 municipalities for Integration into Wastewater Master Plan in Kathmandu Valley

CWIS IN SANITATION INVESTMENT PLANNING



- Pilot and demonstrate a 'municipality-wide' model for local WASH service delivery – managing wastewater and FSM through CWIS approach [PROJECT PREPARATION]

CWIS MAINSTREAMING



- technical advisory to Madhya Pradesh Urban Services Improvement Project Phase II is to guide **the integration of the CWIS principles** into the sanitation system planning with inclusion of non-network sanitation solutions

LEVERAGE
\$100M (ADB) – Sanitation Component and overall
\$270M (WASH)



61-TOWN PRE-FEASIBILITY



- Integration of CWIS components
- Development of GIS dashboard for planning and monitoring for FSM and SWM services
- Developed a technology catalogue for FSM and SWM in Bangladesh

FOLLOW UP INVESTMENTS

POTENTIAL FUNDING / INVESTMENT LEVERAGE:
\$66M

INVESTMENT PROJECT PREPARATION – 10 TOWNS



- Supporting IsDB funded Lives and Livelihood Project
- Assisting the bank in shaping investments in the 10 selected towns

POTENTIAL FUNDING / INVESTMENT LEVERAGE:
\$200M

INVESTMENT PROJECT PREPARATION – 25 TOWNS



- (pipeline project)

POTENTIAL FUNDING / INVESTMENT LEVERAGE:
\$50M+ - Sanitation Component

30 TOWNS PROJECT – IMPLEMENTATION SUPPORT



- TA to World Bank in shaping the project to be CWIS-inclusive – across 30 towns

POTENTIAL FUNDING / INVESTMENT LEVERAGE:
\$300M estimated

SANIMAS EVALUATION



- critically assess the success of the SANIMAS approach and the feasibility of introducing the SANIMAS model as a sustainable approach for providing decentralised sanitation in future SANIMAS investments.



Ambition 2019-2030:

10,000⁺

sanitation professionals educated by

100⁺ academic institutions.

GLOBAL
SANITATION
GRADUATE
SCHOOL

BILL & MELINDA
GATES foundation

FSMA



unicef



UTEC

TU Delft

eawag
aquatic research

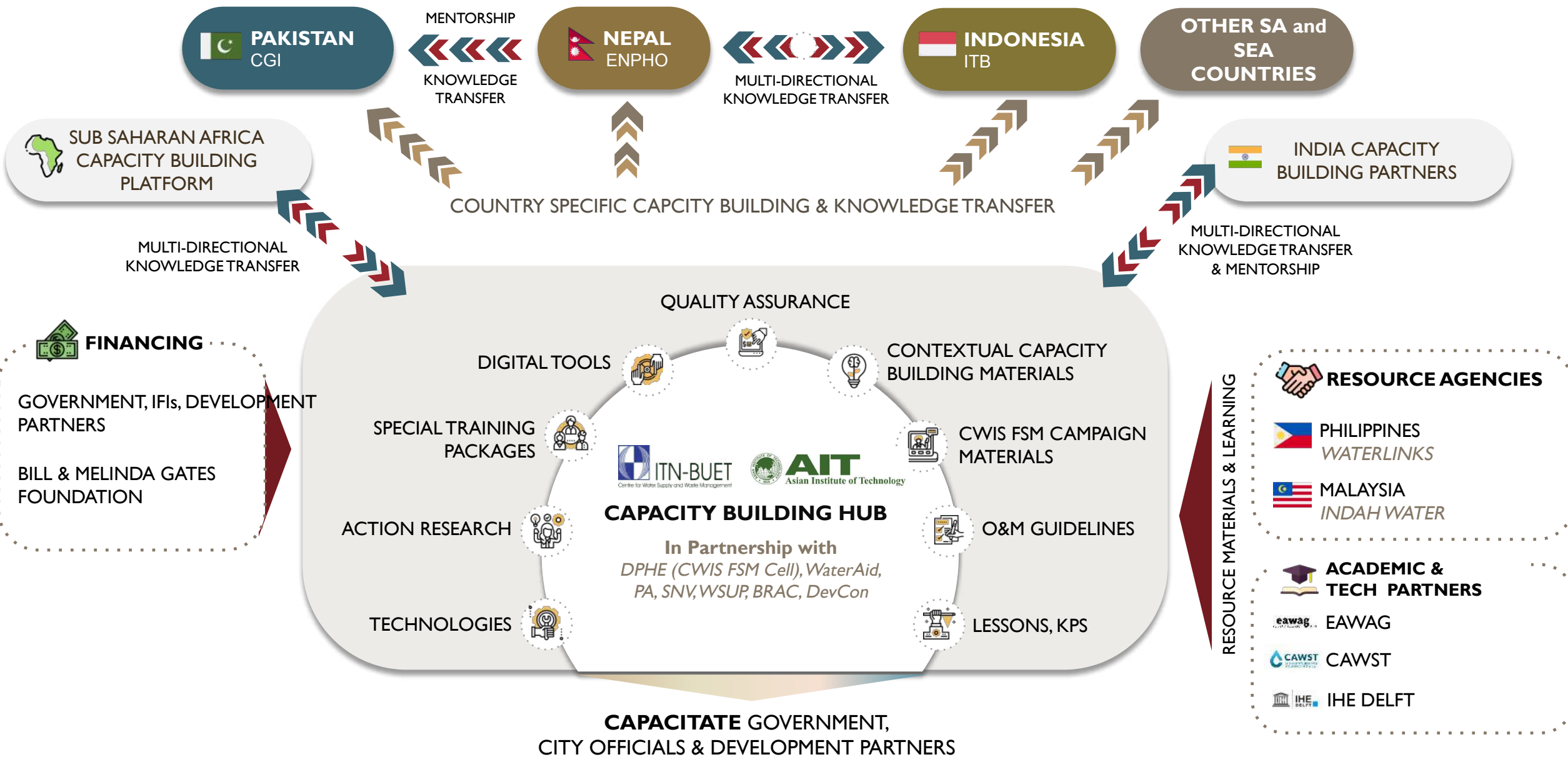
香港科技大学
THE HONG KONG
UNIVERSITY OF SCIENCE
AND TECHNOLOGY



CEPT
UNIVERSITY



SCALING CWIS: REGIONAL CAPACITY BUILDING HUB



THESE LEARNINGS AND BEST PRACTICES ARE NOW BEING DISSEMINATED TO THE SOUTH ASIA REGION TO SCALE INCLUSIVE SANITATION OBJECTIVES



Disseminating knowledge and learnings from India to South Asia by fostering a **regional collaboration** towards **cross learning and sharing**

Knowledge Dissemination



Workshops and convenings

Curate **workshops, convenings, working groups** at a South Asia level, aggregate knowledge and share **learnings, case stories, and challenges** on CWIS



South to South Exposure Visits

Curate **exposure visits** that enable stakeholders to learn from and share implementation approaches based on the gaps and thematic area of focus



Institutional Capacity Building

Advisory and mentorship support towards **strengthening the Communities of Practice** to scale CWIS



Codifying Learnings & Best Practices

Support local partners towards curating **knowledge products / media narratives** to build thought leadership and allow replication

Thematic areas



Inclusion

Access, equity and empowerment of marginalized groups



Private Sector Engagement

Enhanced participation by developing an enabling ecosystem, via model contracts, ease in payments, etc.



Capacity Building

Training and building curricula for capacitating govt., administrative officials, and other stakeholders



Monitoring & Evaluation

Data collection and tracking for quality assessment & policy creation



Climate Change

Building city resilience by planning and adapting towards climate change



Collaborative Platforms

Building collaborative systems for a holistic approach to service delivery for sector outcomes



Sanitation Tours

LEADERSHIP DEVELOPMENT FOR

CITY-WIDE INCLUSIVE SANITATION

Learning visits for the achievement of
sanitation goals and SDG 6 in South Asia

