



Goals and Actions for Sustainable Urbanization in Cambodia

City for All! Conference, Phnom Penh



GGGI at a Glance

Maximizing
Impact through
Four Thematic
Priorities:

-  Energy
-  Water
-  Land-Use
-  Green City Development
-  Multi-Sectoral
-  Member Countries



Cambodia Green Cities Program



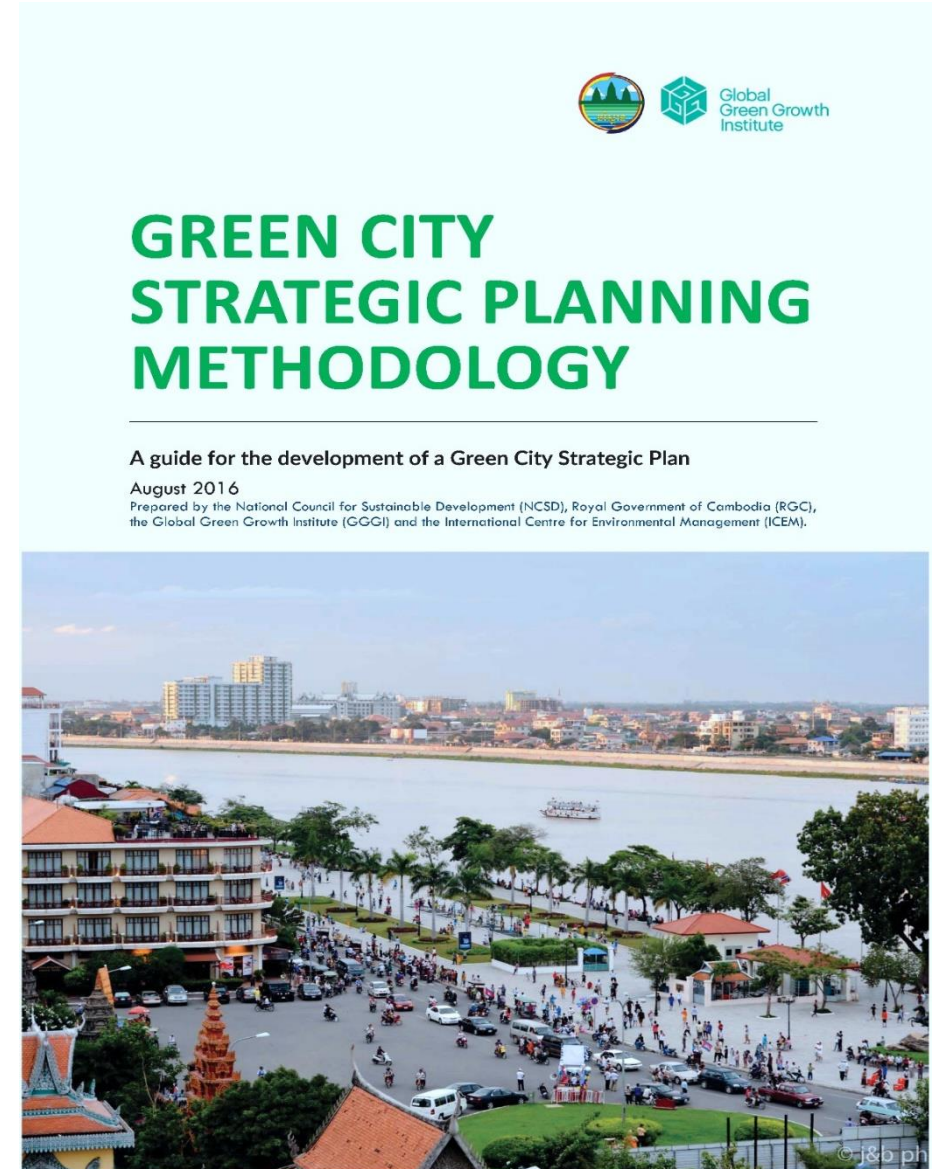
Project deliverables in 2017-18:

1. Develop National Strategic Plan for Green Secondary Cities, jointly with government partners **(2017)**
2. Develop a list of prioritized green growth investment opportunities in secondary cities for submission to potential funders **(2018)**

GGGI's Implementation Partners

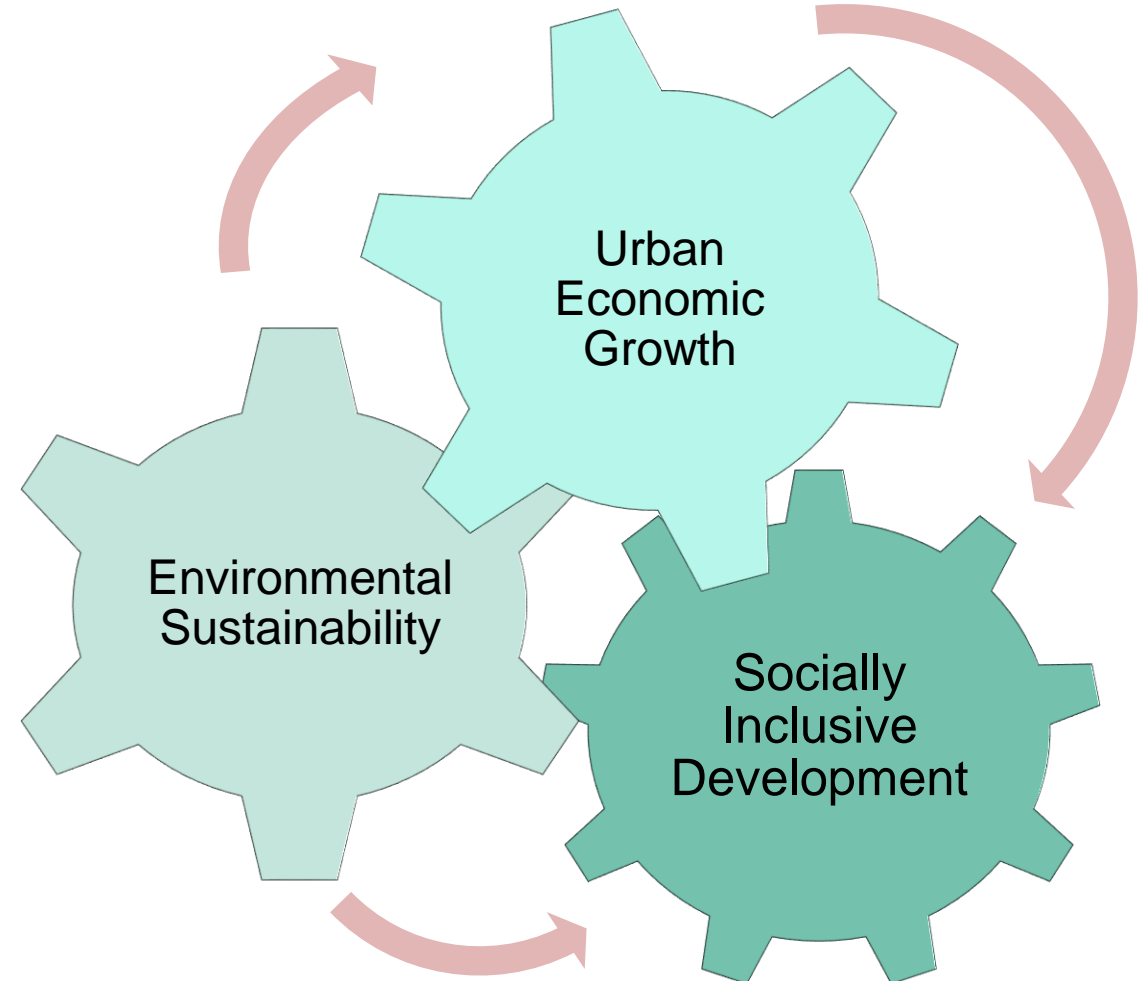


- National Council for Sustainable Development is an inter-ministerial platform to promote the sustainable development with a broad membership.
- Ministry of Interior is responsible for public administration throughout Cambodia's 25 provinces and 186 districts.



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City for All! 2017

Shaping the New Urban Agenda



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Resilient City



Inclusive City



Clean City



**Future
City**



Unprecedented urbanization

- 4.3% urban spatial expansion annually
- 30% of population in urban areas
- expected to rise to an estimated 44% of the total population of around 18.4 million by 2030
- Higher urban population density in Cambodia



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Urbanization risks and challenges

- Slum and squatter settlements
- Traffic congestion
- Flood risk
- Increased pollution
- Rising inequality
- Weak infrastructure
- Inadequate service delivery
- Rising spatial disparities



Rising Urban Challenges



- Multi-dimensional poverty
- Need for financial inclusion
- Need for decent jobs
- Safety and livability

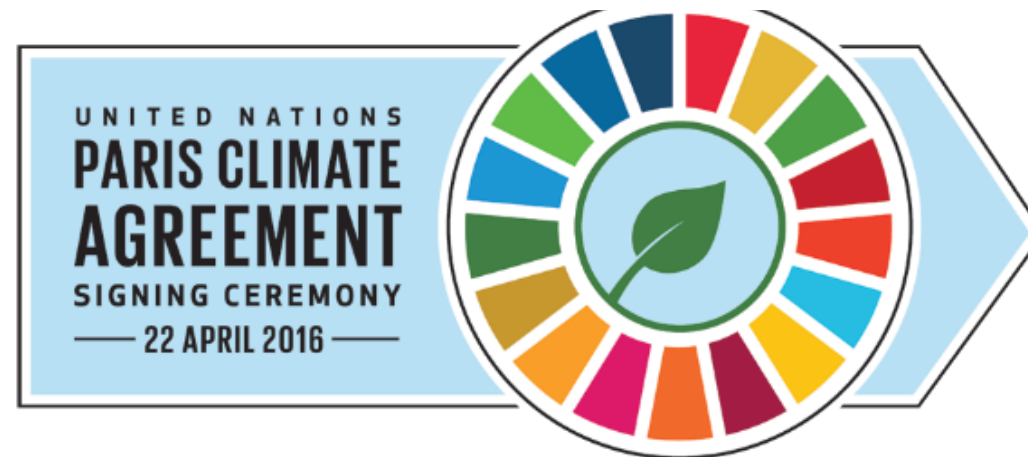
- Disaster planning
- Environmental management
- Sustainable transport
- Resource efficiency



Global Agenda



**FINANCING FOR
DEVELOPMENT**
13-16 JULY 2015 • ADDIS ABABA • ETHIOPIA
TIME FOR GLOBAL ACTION



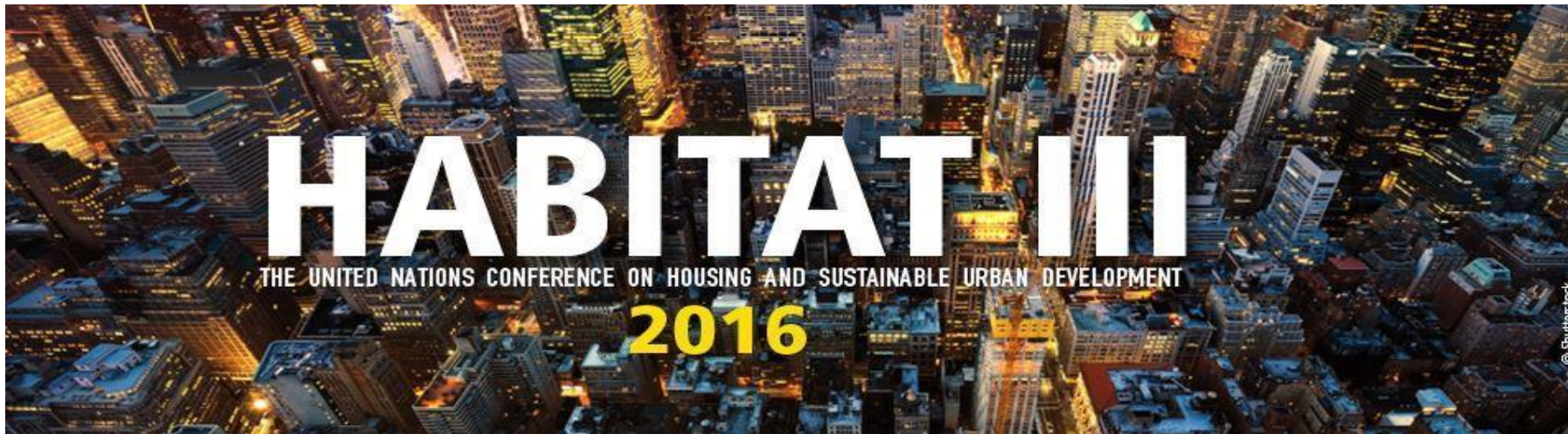
*Central
role of
cities*

New Urban Agenda

Quito Declaration on Sustainable Cities and Human Settlements for All – 2016

Urban paradigm shift

1. Sustainable urban development for social inclusion and **ending poverty**
2. Sustainable and **inclusive urban prosperity** and opportunities for all
3. Environmentally **sustainable and resilient** urban development
4. Building the **urban governance** structure: establishing a supportive framework
5. Planning and managing urban **spatial development**



Multi-Stakeholder Cooperation

- ✓ Importance of coalescing around goals for sustainable urbanization
- ✓ All stakeholders have a role in shaping our cities; public, private, NGOs, academic



*“We call upon **businesses** to apply their creativity and innovation to solving sustainable development challenges in urban areas, acknowledging that **private business activity**, investment and innovation are major drivers of productivity, inclusive growth and job creation....” Quito Declaration – p. 133*

Goal 1. Integrated urban planning and green infrastructure development

1.1 Develop integrated sustainable spatial planning and design, encompassing land-use and neighborhood planning

1.2 Develop sustainable urban infrastructure for sewerage and drainage system, waste water management, solid waste management, water supply, transport and energy supply

1.3 Develop efficient management for hazard risk mitigation, climate change adaptation and disaster preparedness and response.

Draft National Strategic Plan for Green City Development (2018-2030), GGGI and the Royal Government of Cambodia



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Goal 2. Green Local Economy

2.1 Develop renewable energy and energy efficiency in cities and towns

2.2 Strengthen eco-tourism in cities through human resources development and protection of natural assets

2.3 Develop an enabling environment for green businesses and enterprises, including in handicrafts, manufacturing and organic products, including for industry, building and households

Draft National Strategic Plan for Green City Development (2018-2030), GGGI and the Royal Government of



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Goal 3. Urban Social Inclusion

3.1 Provide equitable access to infrastructure and basic services for all, particularly the disadvantaged communities

3.2 Increase education and employment opportunities for the urban poor

3.3 Engage all stakeholders, in particular, the marginalized groups in the development decision of the cities

Draft National Strategic Plan for Green City Development (2018-2030), GGGI and the Royal Government of Cambodia



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Goal 4. City Governance

4.1 Improve city's financial capacity to implement green city projects

4.2 Strengthen institutional capacity and human resource at the city level

4.3 Promote information, knowledge and best practice sharing among cities

Draft National Strategic Plan for Green City Development (2018-2030), GGGI and the Royal Government of Cambodia



Practical Action 1. Affordable Land and Urban Housing

Ensuring affordable land and housing for the urban poor

Thailand – land titling and rental cooperatives

The Community Development Organizations Institute (CDOI) uses various ownership structures including cooperative land ownership and long-term leases to community cooperatives to allow low-income communities to secure land titles. The collective approach also discourages speculators from purchasing individual housing units from the poor to sell to higher income groups. CDOI finances its programs using a mix of its own funding, government subsidies and pooled savings from its residents.



Thailand's Baan Mankong ("Secure Housing" in Thai) Community Upgrading program began in 2003

Practical Action 2. Protected Blue/Green Corridors

Introduction of zones to safeguard and protect blue/green corridors in cities

Landscape Performance Benefits

ENVIRONMENTAL

- Provides flood protection for up to a 200-year flood event and can sustain a flow rate of 118mm/hr.
- Reduces the urban heat island effect
- Reduced small-particle air pollution by 35%

SOCIAL

- Contributed to 15.1% increase in bus ridership and 3.3% in subway ridership in Seoul
- Attracts an average of 64,000 visitors daily.

ECONOMIC

- Increased the price of land by 30-50% for properties within 50 meters

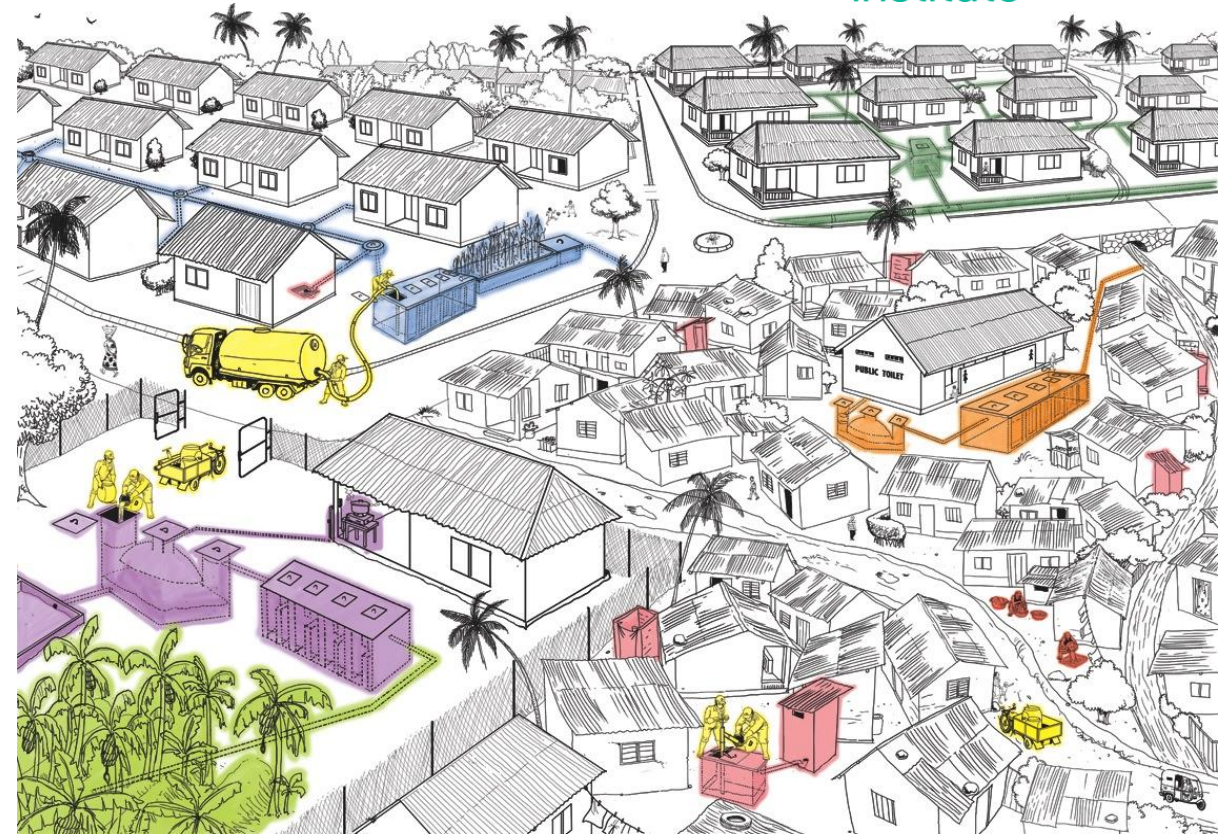


Cheonggyecheon Stream Restoration Project, Seoul

Practical Action 3. Decentralized sanitation systems

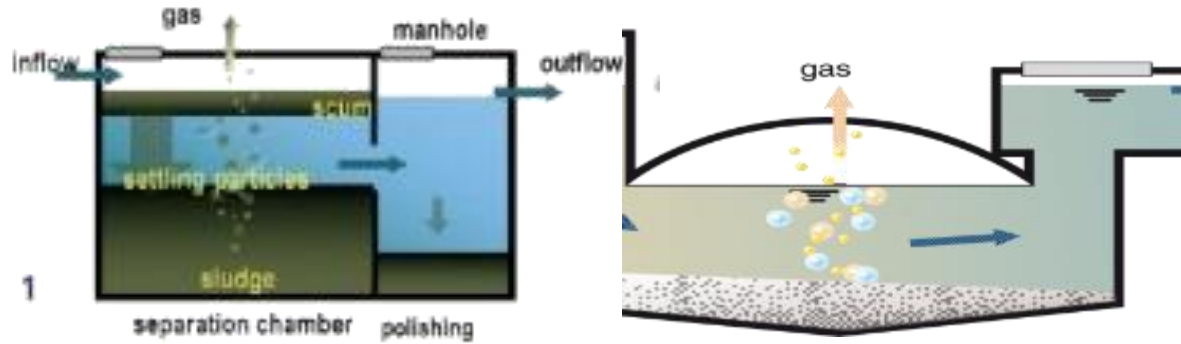
Introduction of village-level Decentralized Wastewater Treatment Systems (DEWATs)

- Providing treatment for both, domestic and industrial wastewater at affordable price
- Fulfillment of discharge standards and environmental laws
- Wastewater pollution reduced by up to 90%
- Providing treatment for wastewater flows up to 1000 m³ / day
- Reliable and long lasting applications
- Materials/ inputs used for construction are locally available
- Minimal maintenance and long de-sludging intervals
- Low operation and maintenance costs
- Resource efficiency and non dependence on energy



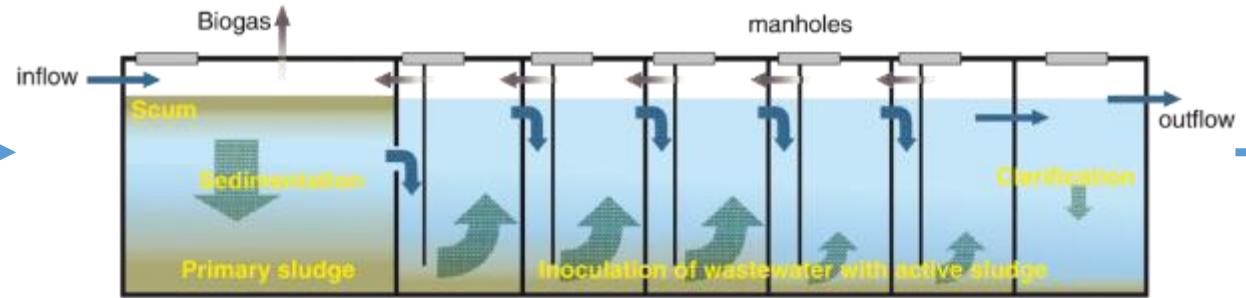
Options for clustering of decentralized wastewater treatment systems in urban areas at village and household level (BORDA, 2017)

DEWATS – Cluster Treatment Modules



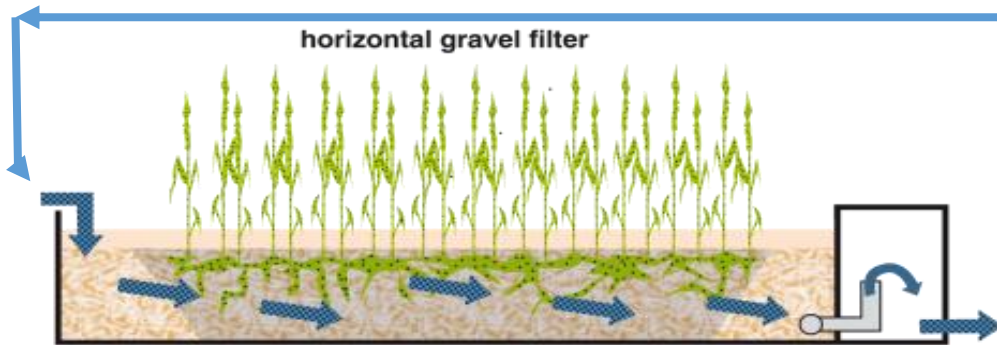
1. Biogas settler/Septic tank

(pre-wastewater treatment or intermediate settler for Solid-free Sewer, underground construction)

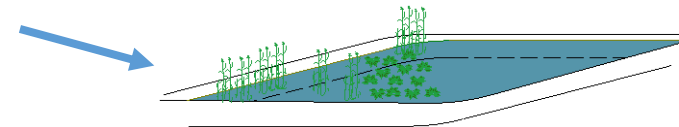


2. Anaerobic baffled reactor –

ABR (core wastewater treatment module)



3. Planted gravel or Sand filter (post wastewater treatment module)



4. Maturation pond (post wastewater treatment module)

Practical Action 4. Pedestrian areas, cycle pathways

Investment in pedestrian areas, cycling pathways and promotion of eco-friendly vehicles

Expected urban benefits:

- Improved walking environment
- improved local air quality
- greater public space

Proposed expansion of pedestrian areas:

- Expansion of the riverside improvement to redevelop roadways as pedestrian areas
- Pedestrian areas in Phnom Penh would ideally be close to the night market, river front, Royal Palace and other tourist attractions
- Parking regulations are enforced and adequate parking provision made such that all sidewalks are easily passable by pedestrians
- Need for redesigning infrastructure to enhance area for pedestrians and commerce



Construction of the Riverside Park and pedestrian walkway from Preah Ang Dongkoeu to Preah Konlong achieved 65% of completion as of 14 June 2017. City Hall aims to complete the entire project, which will connect from Diamond Island to Chroy Changvar Bridge, just before the upcoming Water Festival.

Practical Action 5. Green Building Design standards

Promotion and construction of energy efficient and resource efficient buildings

- Green Building Design will result in reduced energy consumption, reduced water consumption, more efficient use of natural resources, and an improved living environment for residents of Cambodia.
- ***Cambodia aims to develop its own Green Building rating system and certification process***
- As an example of the expected impact of the green building standards, for a large Phnom Penh apartment condominium with 12 floors and 96 residential units, the following energy and water reductions are achievable (vs. BAU) using the green building design measures:
 - ✓ Energy: 67% reduction
 - ✓ Water: 27% reduction
 - ✓ Building materials: 33% reduction



Example of a green building in Phnom Penh (2017)

Practical Action 6. Sustainable Infrastructure

Investment in infrastructure for the long-term, including public transportation, resilient roads

- Transport – roads, bridges, ports, railways, trams, terminals, airports, rapid bus transit systems
- Energy – power (generation, transmission, distribution), natural gas (generation, transmission)
- Water/waste – water supply, waste/sewerage treatment, waste to energy
- Communications – cable network, mobile network

“Sustainable infrastructure refers to the designing, building, and operating of these structural elements in ways that do not diminish the social, economic and ecological processes required to maintain human equity, diversity, and the functionality of natural systems.”

(CRC Research, 2017)



Study for the development of a tramway network in Phnom Penh (developed with French support) and study for a development of a sky rail through the Phnom Penh Urban Transport Master Plan (JICA)

- **Building Climate-resilient infrastructure:** Apart from

Practical Action 7. Community-based waste management

Strengthening solid waste management responsibilities and practices at the local level and introducing recycling

Community-based solid waste bank program for municipal solid waste management improvement in Indonesia: a case study of Padang city

- Indonesia has a regulation *UU No. 18/2008* which changes the paradigm from waste dumping to recycling.
- Community-based waste recycling through the solid waste bank (SW bank) program, led to improvements in the local MSW management in Indonesia.
- SW bank program is a unique organization developed among Indonesian communities to facilitate citizen participation in solid waste recycling. The banking system is adopted, and the community deposits the wastes instead of money.
- Improvements are project to result in the higher recycling achievement of 33.66 % and lower GHG emissions of around 96.594 Gg CO₂eq.



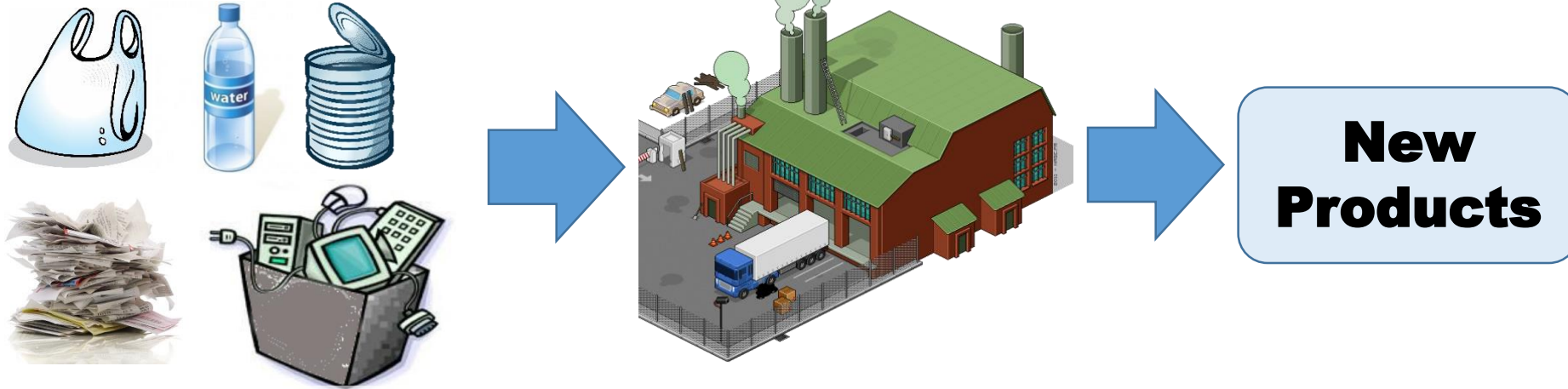
Communal collection points



Waste separation

Solution to Proper Solid Waste Management

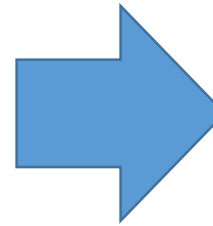
Solution to Reuse/Recycle



Recyclable Materials



Organic Materials



Compost

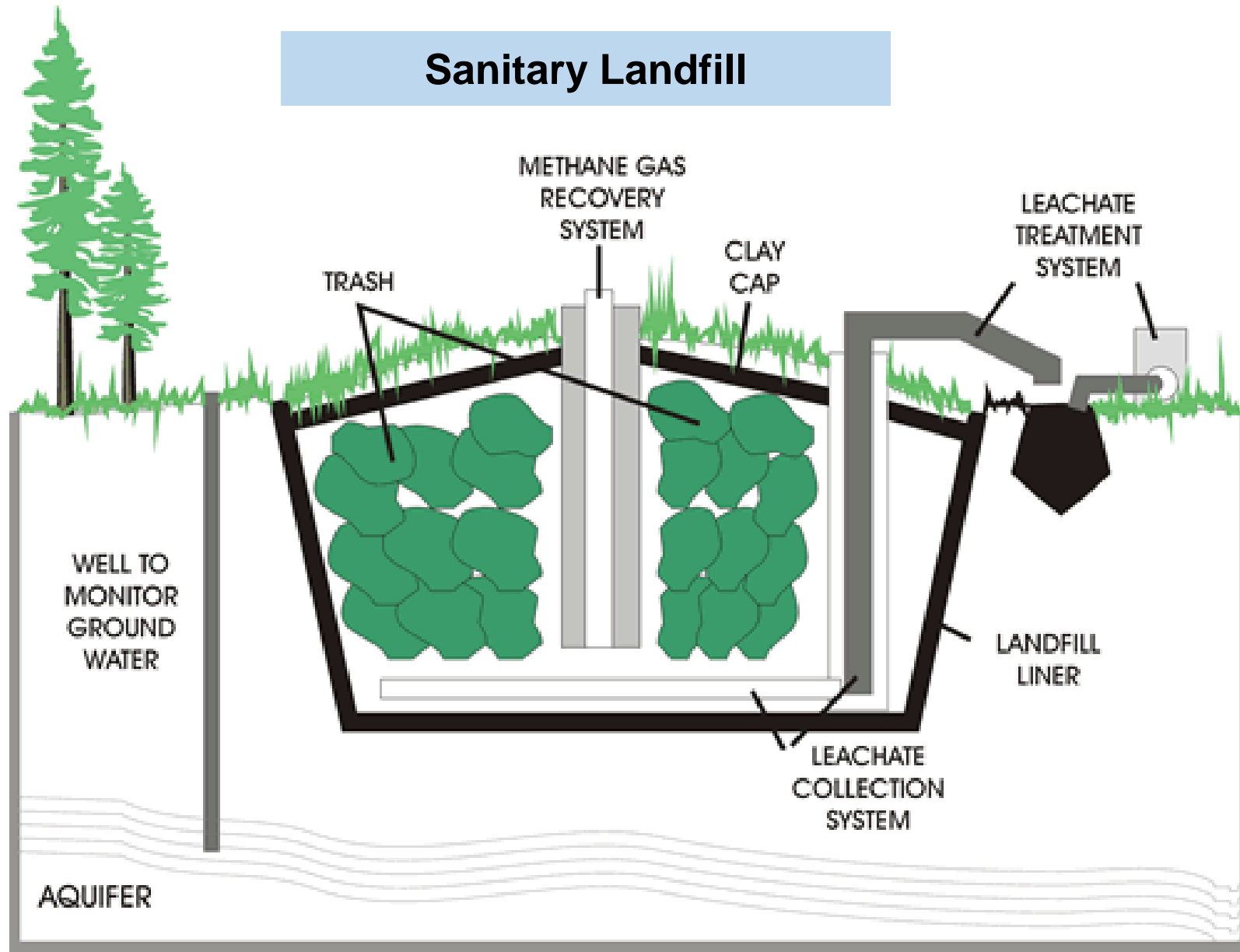
Solution to Proper Solid Waste Management



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Solution to Disposal

Sanitary Landfill



Practical Action 8. Heritage protection and green spaces



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Promotion of urban heritage protection and expansion of public green spaces

Proposed actions for Phnom Penh:

- Cultural heritage sites and buildings in Phnom Penh are preserved and renovated, including the National Stadium, the old Police Station, and the Renakse Hotel.
- Regulations are enacted and enforced to protect and renovate key cultural heritage buildings and sites.
- Tourist fees or other user fees, is established to preserve cultural heritage buildings and sites.
- Public parks, gardens, and green/blue corridors are significantly expanded throughout the city.
- Some existing public areas are redesigned and reconstructed to include more shade trees, biodiversity, permeable surfaces and rain capturing vegetation to manage rain runoff.

Benefits:

- Increased tourism and local economic development
- Greener and more attractive urban areas, cooler urban environment, improved flood control.



Yangon Heritage Trust works closely with the municipal authority, Yangon City Development Committee (YCDC) and other stakeholders to support the drafting of Myanmar's first urban heritage conservation law. YCDC responded by creating an official list of [189 heritage buildings](#).

Practical Action 9. Community disaster-resilience plans

Development of community-based disaster resilience plans and early warning systems

- Unplanned urban development is increasing flood risk for the urban poor
- Peri-urban areas are the most vulnerable to hazards
- Communities prefer living with floods than relocating far from their livelihoods
- Microfinance loans may increase resilience but potentially at the risk of long-term vulnerability
- The urban poor are highly vulnerable to a mega-flood disaster

Actions to be taken:

- Mainstream DRR into holistic urban planning strategies
- Implementation of laws that protect communities against development-induced flooding
- Expand green spaces, wetlands and extend drainage and flood protection infrastructure to peri-urban areas
- Strengthen mechanisms for community-based DRR

'Urbanizing Disaster Risk: Vulnerability of the urban poor in



A recent study exploring the disaster risks of Phnom Penh was conducted by People In Need (PIN) at the Sangkat level for the entire city (2016)

Practical Action 10. Creating jobs for the urban poor

Promoting pro-poor job creation and providing decent jobs

Trends and challenges for employment in East Asia:

- New markets and new job opportunities, but new requirement for skills
- Demand for skilled labor is rising, with low-cost labour becoming less of a requirement
- Growing prevalence of informality among the urban poor, with wage differentials between informal and formal workers
- Labor force participation increasing amongst women

In Thailand, a national network of home-based workers and NGOs led lobbying efforts to legalize social protection policies for its constituents. In 2011, the government of Thailand passed the Home Workers Protection Act, which mandates fair wages (including equal pay for men and women) for workers completing orders for industrial enterprises for their homes. The law also obliges enterprises to provide a contract and establish a committee providing workers with access to courts in the case of labor disputes.



WIEGO (*Women in Informal Employment: Globalizing and Organizing*) provided support to HomeNet Thailand in its long-running campaign to advocate for a law to protect Thailand's homeworkers. The Homeworkers Protection Act provides for protection of wages, occupational health and safety, and responsibility of employers toward homeworkers. The legislation could impact as many as 2 million workers in Thailand.

Thank You

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Fiona Lord is the Global Green Growth Institute's Country Representative in Cambodia, leading GGGI's programs focused on green city development and national green growth planning. Prior to moving to Cambodia, in 2011 to 2014, she worked at the Australian Department of Foreign Affairs and Trade and AusAID. In 2008 to 2011, Fiona was a Senior Policy Officer at the Australian Department of Climate Change, where she provided policy advice for Australia's international engagement on climate change. She has a Masters in Environmental Management and Development, and a Bachelor of Law and Environmental Management.

