



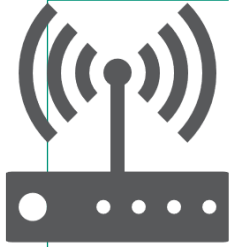
Global  
Green Growth  
Institute

# SMART CITIES PROGRESSING TOWARDS SUSTAINABLE PRODUCTION AND CONSUMPTION

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SPREP CLEAN PACIFIC ROUNDTABLE  
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# For GGGI Green Cities Are:



**SMART & GREEN:** Cities that integrate ICT to enhance the provision of & access to urban services in order to support goals of sustainable inclusive and prosperous urban growth



**RESOURCE-EFFICIENT & BASED ON CIRCULAR ECONOMIES:** Waste-to-resource & circular economy to lower resource footprints. Green cities are transformational & creative: they decouple growth from resource use.



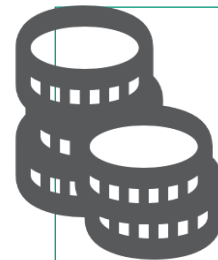
**CLIMATE SMART & RESILIENT:** In pursuing low-carbon pathways in support of Paris, and underpinned by resilient infrastructure, systems & communities



**INCLUSIVE & PRO-POOR:** Green cities must provide livelihood opportunities beyond BAU. Green cities are pro-poor, 'connected', accessible and provide affordable solutions for all



**HEALTHY & LIVEABLE:** With an improved quality of life, cleaner air and accessible green spaces



**PROSPEROUS & BANKABLE:** Cities that are competitive, create opportunity & are attractive for (new) investment

# Drivers Of Urbanization & Waste: NDCs & SDGs



## KIRIBATI NDC

“The *increase in non-biodegradable waste usage in urban areas*, as well as poor waste and sanitation management, result in limited access to unpolluted land and sea, degradation of land and ocean based ecosystems, and numerous isolated occurrences of diarrhoeal and vector borne diseases, *all affecting the resilience of the population and natural ecosystems*”

## VANUATU NDC

“*Prioritizing action incorporating threats and solutions from the ridge to the reef of island communities (e.g. waste management)*”

12 RESPONSIBLE  
CONSUMPTION  
AND PRODUCTION



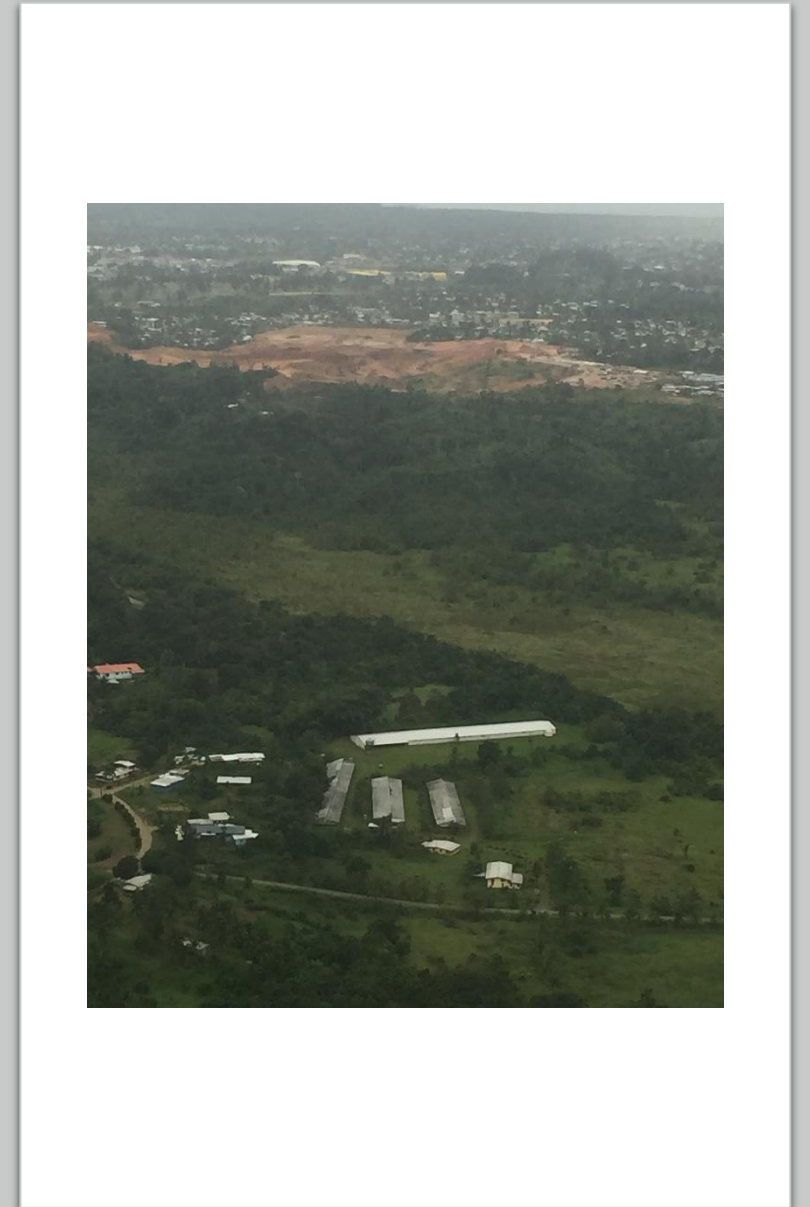
## SDG Goal 12: Ensure sustainable consumption and production patterns

“Encourages **sustainable use of natural resources** and minimizing use of toxic materials, and their safe disposal, including specific policies and international agreements on the management of toxic materials”

Source: UN, SDGs

# Urbanization, Waste & EbA Nexus

- Greater competition for land, thus negative impact on ecosystems.
- Limited services in informal settlements, coping mechanisms (unmanaged disposal of waste) leads to:
  - *Polluted water systems; flood control; poor inshore water quality*
  - *Loss of livelihood – impact on fisheries*
  - *Encroachment of vulnerable ecosystems, waste dumping in mangroves and oceans*
- P-SIDS generated over 1.16 million tons of solid waste in 2013; projected to be 1.59 million tonnes per year by 2025 – not all managed properly



# Impact On EbA

DEGRADED MANGROVES & BLOCKED WATERWAYS

= UNDERMINES CLIMATE RESILIENCY

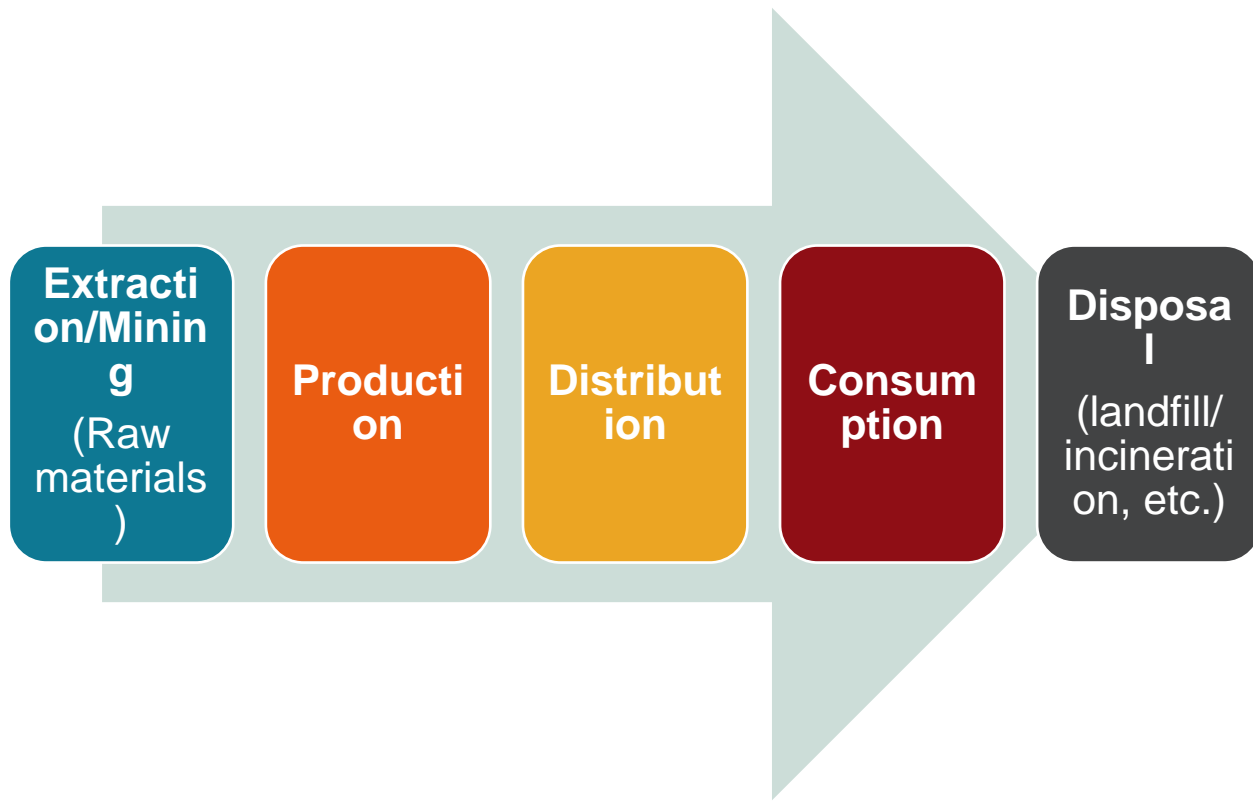




## What is circular economy?

“A circular economy describes an ***economic system*** that is based on business models which replace the end of life concept which reducing, alternatively reusing, recycling and recovering materials in production/ distribution and consumption processes, thus operating at the micro level (products, companies, consumers), meso level (eco-industrial parks) and macro level (city, region, nation and beyond), with the ***aim to accomplish sustainable development***, which implies creating environmental quality, economic prosperity and social equity, to the benefit of current and future generations”

- Definition by Kirchherr, et al, 2017



Conventional supply chain



Closed loop supply chain

# Comparing linear and circular economies

**Nudge Economics:** how can we change behaviors to achieve circular economies and improve waste management?



# Drivers of circular economy

Population growth and  
Urbanization

Environmental accountability

Ecosystem degradation

Technological improvements

Supply and price risks

Consumer pressure



# Stakeholders and their roles in promoting circular economies

Public sector (government)	Private sector (corporations, SMEs)	Civil society (Consumers, advocacy groups, etc.)
<ul style="list-style-type: none"> <li>• Decouple economic growth from resource consumption.</li> <li>• Job creation.</li> <li>• GHG emission reduction.</li> <li>• Improved air quality</li> </ul>	<ul style="list-style-type: none"> <li>• Develop new business opportunities (e.g. products, partnerships, etc.) as service models encourages long term relationships.</li> <li>• Positive branding</li> </ul>	<ul style="list-style-type: none"> <li>• Support through waste sorting, packaging return, etc.</li> <li>• Benefit from reducing ecological footprint, economic savings.</li> <li>• Benefit from new jobs.</li> </ul>



# Barriers to creating circular economies:

## Social

- Awareness gap
- Brand loyalty, hard to switch product
- Social norms around recycling and material reuse

## Technical

- Need to develop business case.
- Requires investment for research and development of new technology.
- Knowledge, material sharing between companies may be challenging.

## Financial

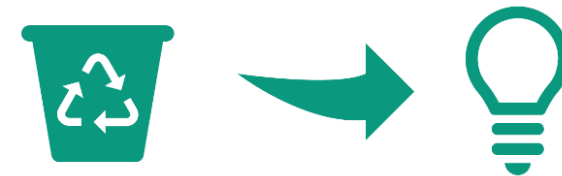
- High Transition Costs
- Upfront cost – need for financing options
- Product pricing
- Economic viability of recycling

## Institutional

- Regulatory Structures need to change
- Leadership to drive change
- Changing Linear Mindset

# Link To Smart/Low Carbon Cities

- Waste sector has high potential to **incorporate technology** and be valorized
- If **valued correctly**, there is potential to: (a) reduce waste; (b) reuse waste and (c) generate employment
- Although **emissions from the waste sector** are small in Fiji, proper **management** and **waste to energy** could potentially reduce GHG emissions in the long run
- Using **technology to manage waste**, especially in public spaces



# Next Steps

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- How to overcome this challenge?
  - Transition **towards circular economies**
  - Minimize waste generation, Increase recycling systems
  - Better waste collection services, even in informal settlements
  - Awareness and capacity building
  - Organic waste management
  - Decentralized infrastructure (offset transport footprint)
- Policy: an enabler or a barrier?
  - ECAL increase from 10 Cents to 20 Cents is a positive step.

# Thank You

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