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Asia Water Forum 2022

8–11 August 2022 • Online

Focus Area: Universal Water and Sanitation Services

Session Title: Achieving Universal Sanitation

–Baguio Resilient City Tourism Project: Fecal Sludge Management in Baguio City

Schedule: [August 10, 2022 | 3:00 – 4:30 pm]



ADB



Target Outcome: Improved Sanitation Services

- Regular desludging services for 80K+ households (once every 4years)
- Upgrade of the sewage and septage treatment plant for increased treatment capacity and to comply with relevant environmental guidelines
- Additional 15,000 households connected to sewer system
- Improve financial sustainability of the systems
- Strengthen institutions' capacity to deliver services



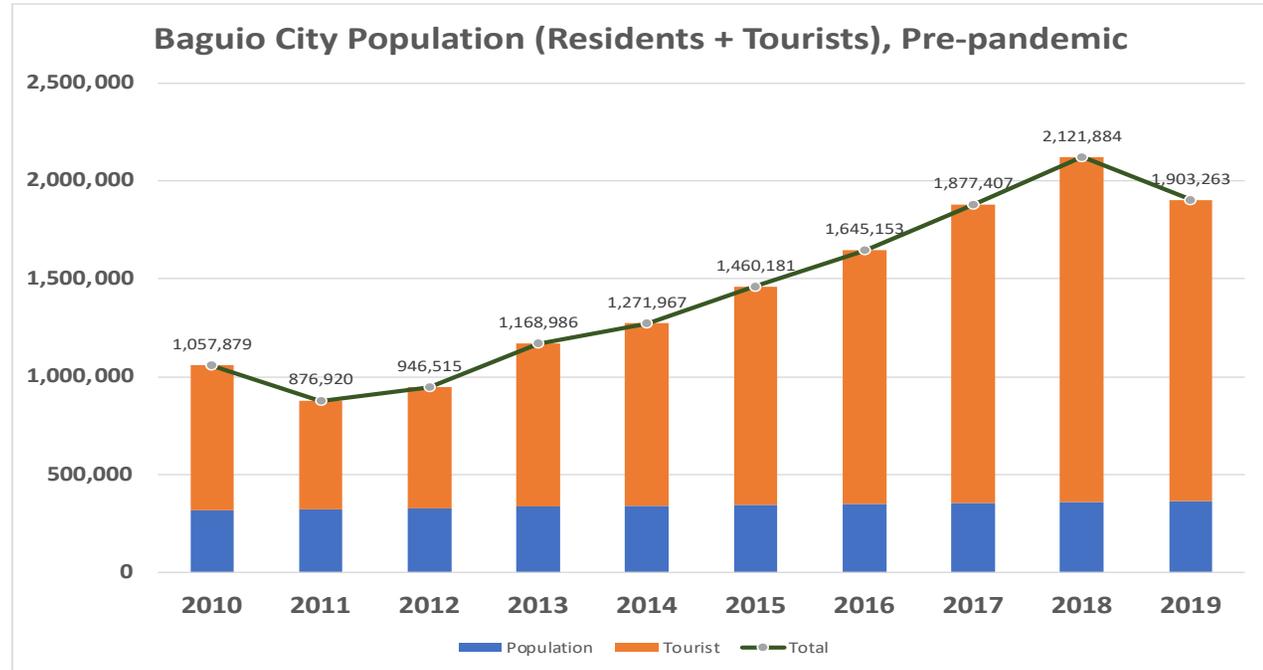
Baguio City – A Mountain Province in the Philippines

Demographic Trends

- 2020 Population = 372,680
- Average household size = 4.3
- No. of household = 80,311

Existing Land Use

- **5,749 hectares** in total.
- **68.58% (39.42 sq.km.)** of urban land uses
- **30.43% (17.50 sq. km)** for forest, watershed and other reservations



Source: Philippine Statistics Authority

Rapid urbanization and hilly topography



- Very few available lots
- Difficulty to access facilities
- Expensive basic services (e.g. water supply, desludging service)

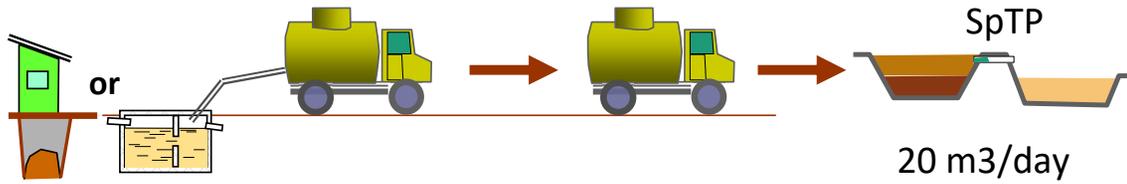




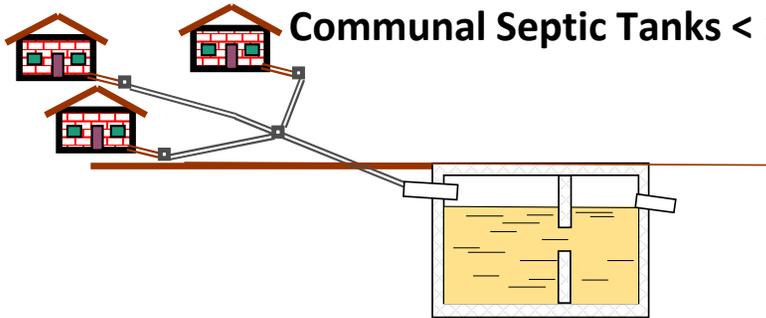
Current Situation – Sanitation Services

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Predominantly septic tanks – 90 % of Baguio residents



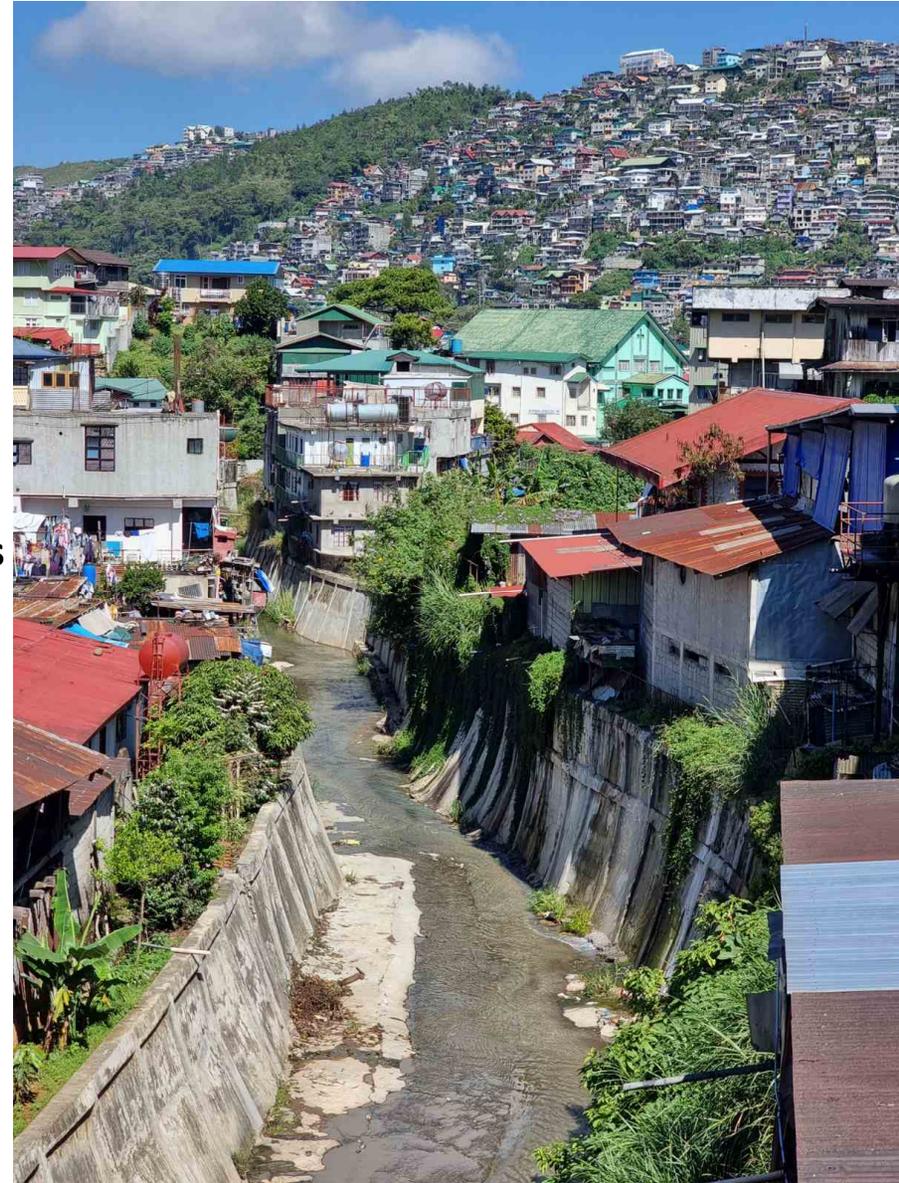
Communal Septic Tanks < 1% of Baguio residents



STP
8,600 m3/day



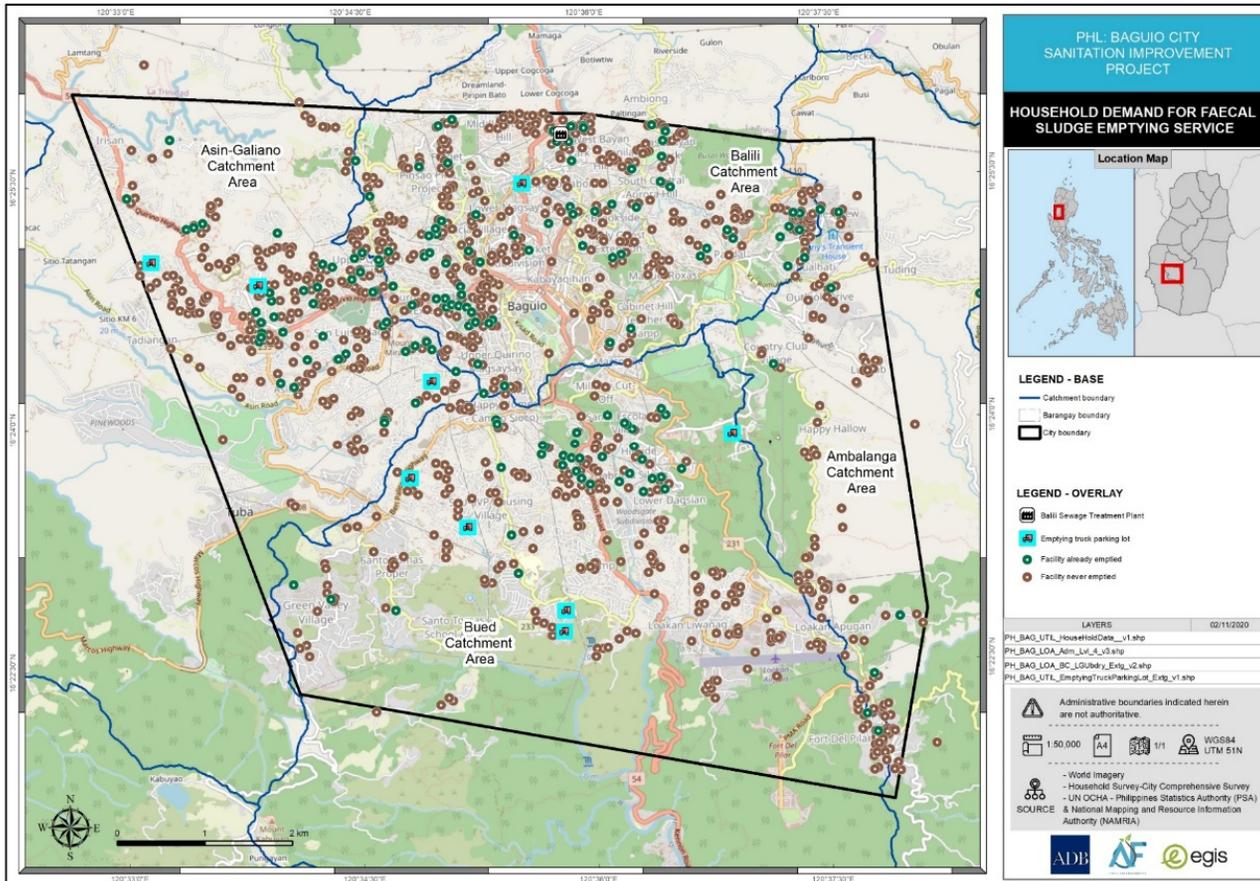
Limited sewer network – 10 % of Baguio residents





Current Situation – Septage Management

Source: Household survey 2020, Amédée Ferré



- **On-demand desludging services provided mostly by private entrepreneurs**
- **Very low demand (13% of HHs ever emptied)**
- **Current emptying periodicity > 9 years**
- **50% of facilities not accessible**

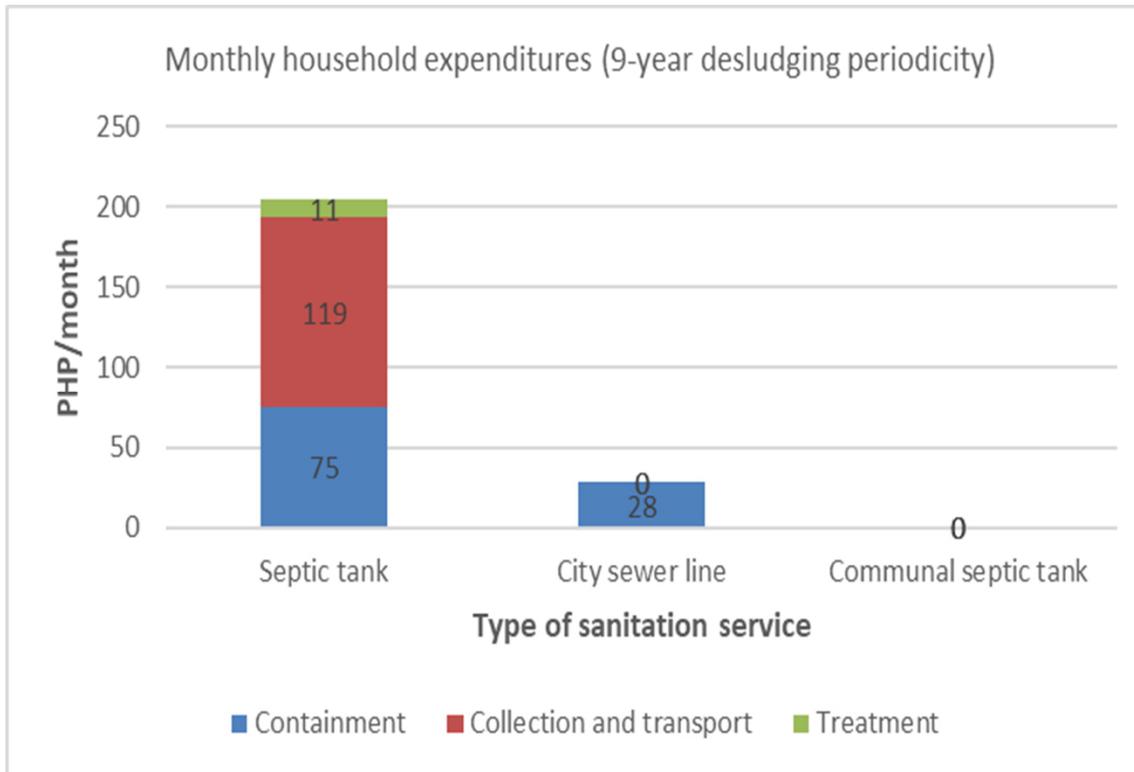
2020 Septage Management Ordinance : **septic tank emptying periodicity = 4 years**

Serious threat for public health and environment



Current Situation – Inequity Between Service Users

Source: Household survey 2020, Amédée Ferré



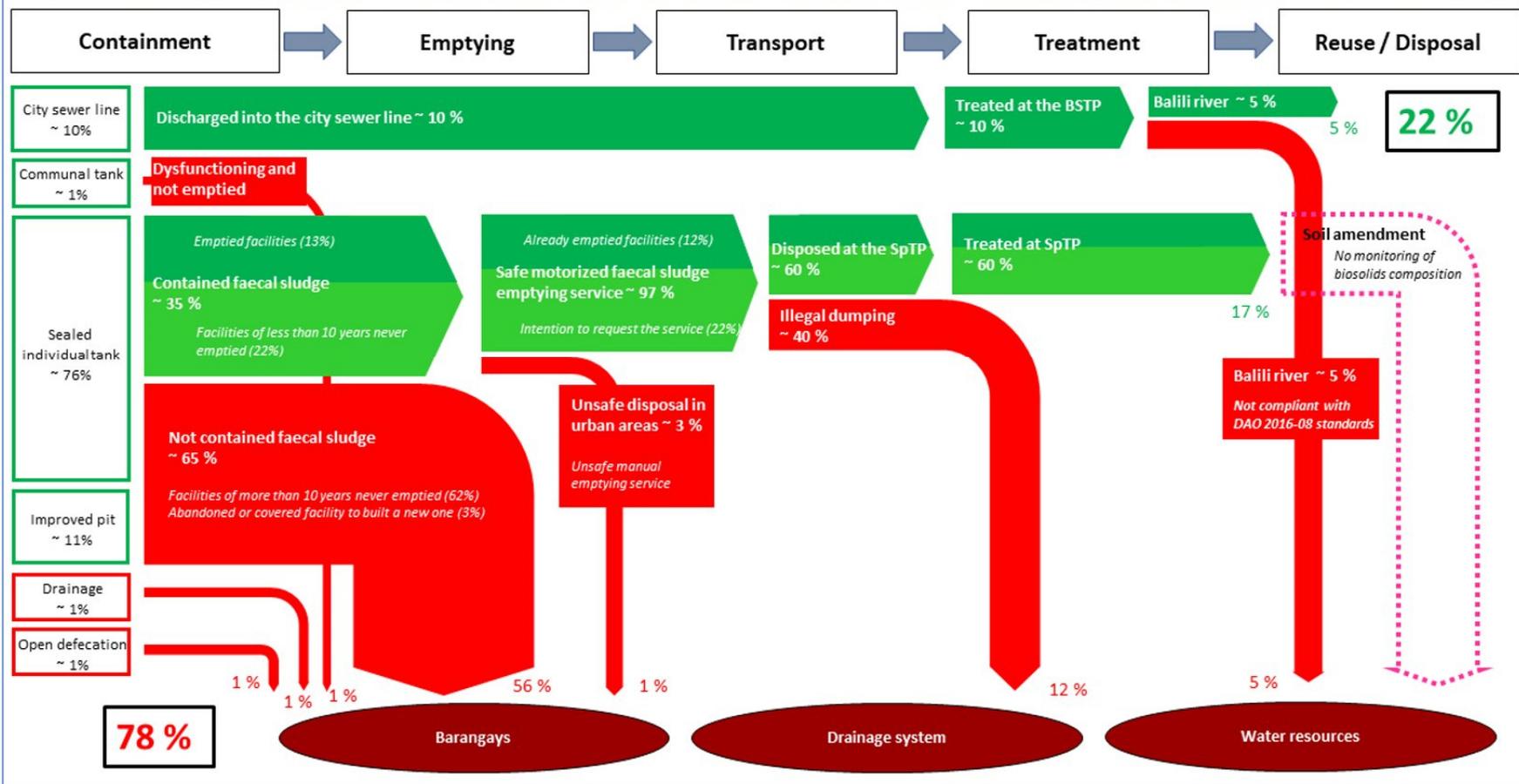
- **Sewerage service free of charge for HHs** (*commercial establishments pay through the business permit*)
- **Minimal sanitation fees collected from a small percentage of the population** (HHs who avail the desludging service)
- **Onsite sanitation services are 7 times more expensive** than sewerage services
- Lack of budget to provide universal and efficient sanitation services





Current Situation: Almost 80% of the City's wastewater is unmanaged

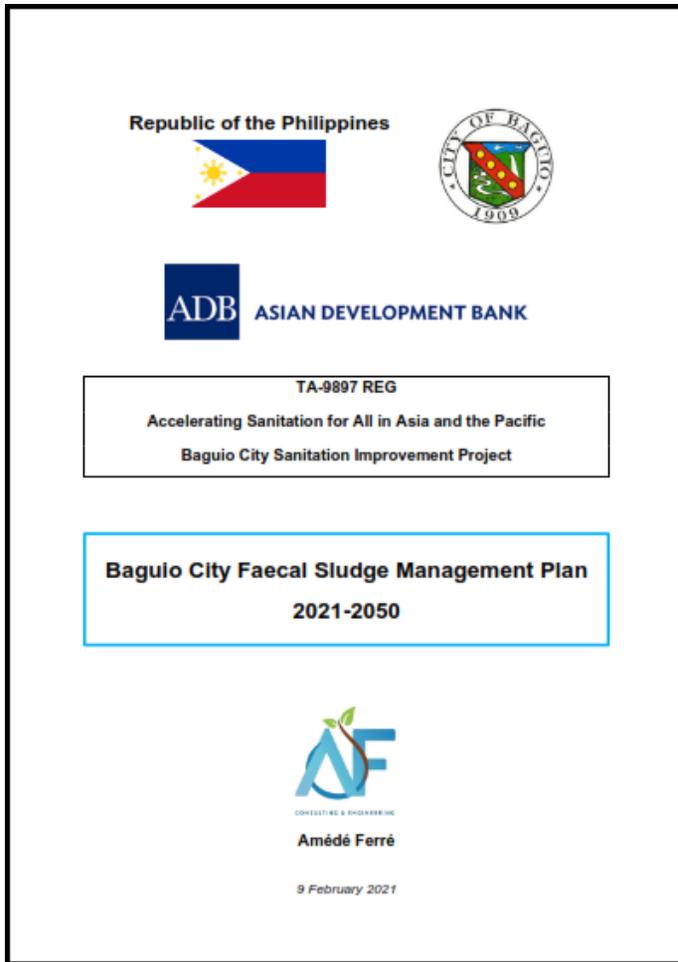
Baguio 2020 – Faecal Sludge Flow Diagram (SFD)



Source: Amédé Ferré



Long Term Planning to Achieve Universal Sanitation – Baguio City FSM Plan



- **Objective** → guide Baguio City’s interventions to deliver faecal sludge (septage) management services in an **efficient, equitable, and sustainable** way to improve environmental and public health.
- **Action Plan – Budget**
 - Immediate actions 2021
 - Short term 2022-2025
 - Medium term 2026-2035
 - Long term 2036-2050
- **Technical Assistance** to support and initiate **implementation** (*started in October 2021*)
- **Officially approved by the City** : City Resolution Numbered 579 (2021)



Multi-pronged Approach to Achieve Universal Sanitation



Complementary efforts by the City

- 100% community-based monitoring system completed – reflects actual septic tank/sewer connection info per household
- City Ordinance on Septage Management, 2020
- Ongoing efforts towards a Smart City





City progress toward universal access – Baguio City Resilient Tourism Program

To be implemented between 2022 and 2026 (*Feasibility Study Conducted by Egis 2020 - 2021*)

Hard infrastructure	“Soft” infrastructure
<ul style="list-style-type: none"> • New 12,000 m³/day Balili STP (40% increase) <ul style="list-style-type: none"> - demolish existing STP - 80 m³/day septage (400% increase) - Sludge dewatering and drying on site • Rehabilitated Balili sewage network (5% increase) <ul style="list-style-type: none"> - replace 11.3 km of main sewer - connect 33% of Balili catchment (for 2025 - approx. 14,415 HH) 	<ul style="list-style-type: none"> • Regional Sanitation Plan and Biosolids Reuse Strategy • Sanitation Compliance Manual • Consolidated and strengthened sanitation function • Capacity development <ul style="list-style-type: none"> - asset management - management information system - compliance • Position tracking system for desludging operators





Moving forward and take away

- **Advantages**

- Presence of mobile service providers, Smart City Command Center, community-based monitoring system data, relative awareness on desludging need
- Long-term and trusting partnership between ADB and the City
- Comprehensive activities: infrastructure + governance + finance
- A champion (City Mayor) with committed staff
- Having other working examples as benchmark
- Any improvement is a huge improvement

- **Challenges**

- Massive and extremely fast development in the City which limits their potential to secure land for sanitation facilities use.
- Uncontrollable influx of tourists because of its proximity to nearby provinces
- Multiple entry points to the City makes imposing tourist fees difficult
- The hilly configuration of Baguio make it extra difficult logistically to perform the service
- Decentralized system: Autonomy not always balanced with resources and capacity

