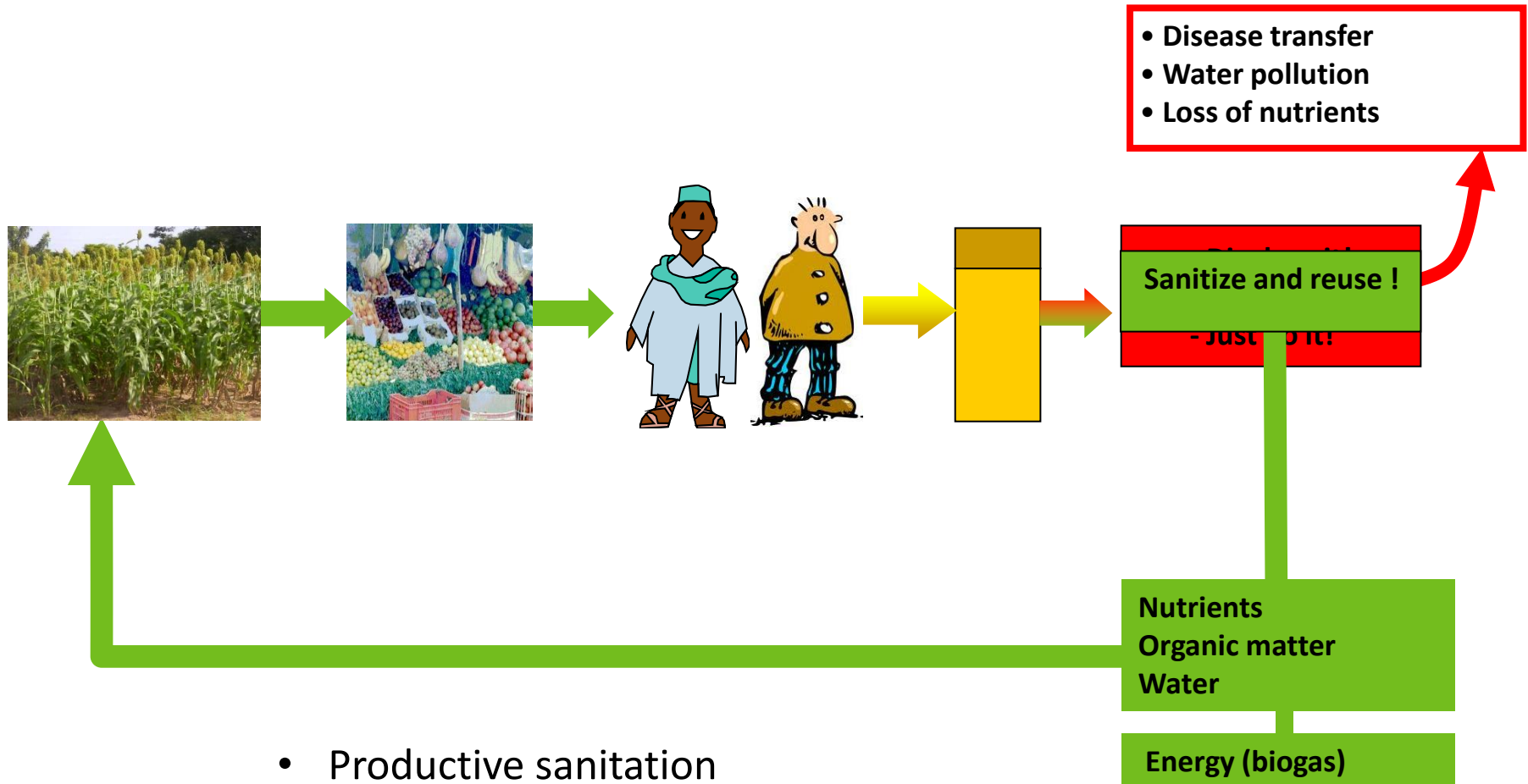


Productive Sanitation in context - recovering what and why?

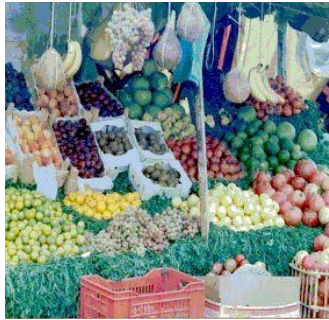


Productive sanitation: Safe recycling for multiple wins



- Productive sanitation
- Ecological sanitation (EcoSan)
- Resource oriented sanitation
-

Fertilizer potential of human excreta (West Africa)



N = 2,7 kg
P = 0,45 kg
K ~ 1,3 kg
Per person
per year



N = 2,7 kg
P = 0,45 kg
K ~ 1,3 kg
Per person
per year



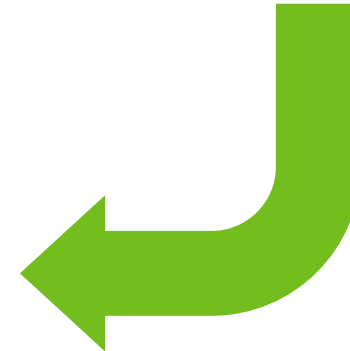
≈



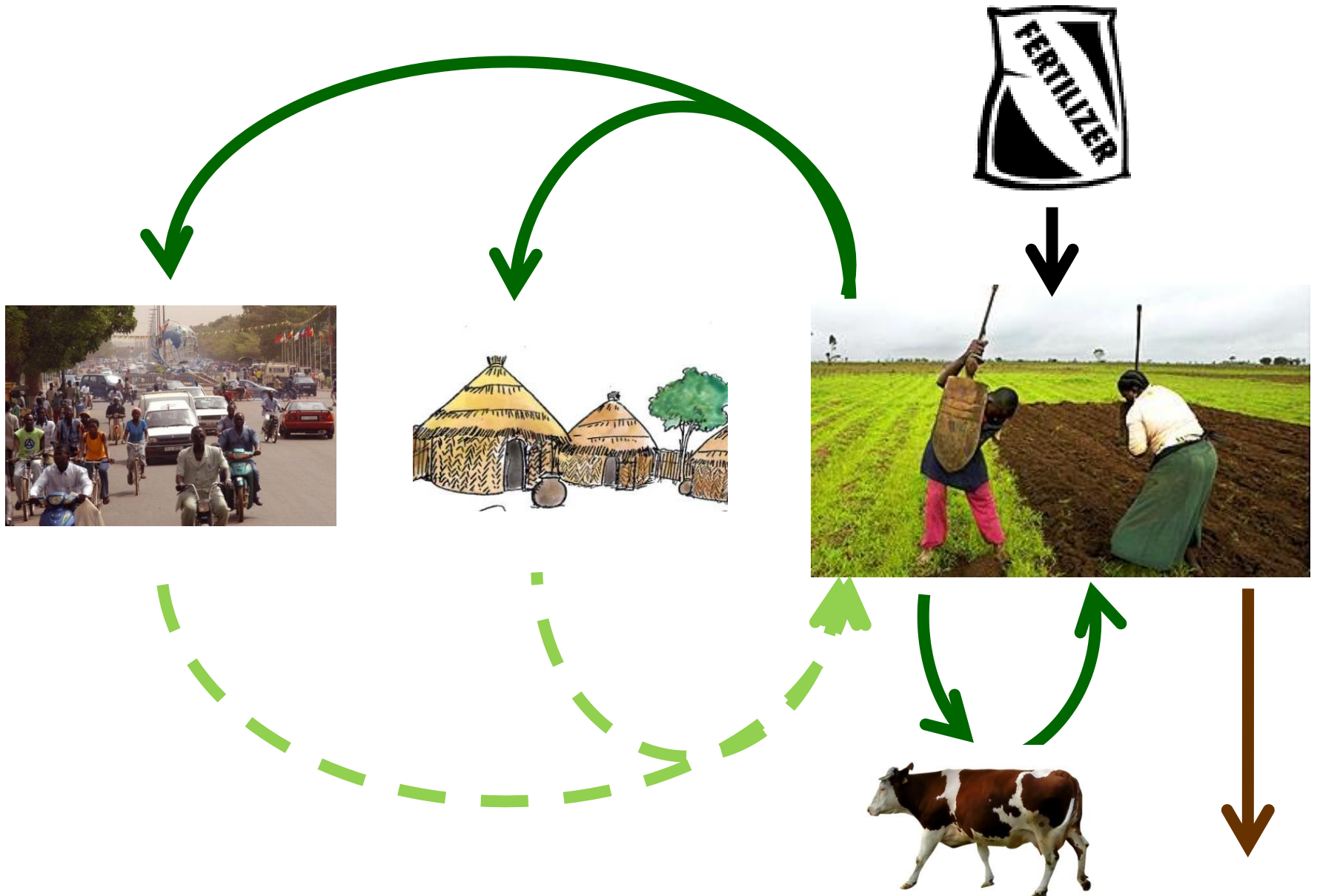
→ 10 kg (~9\$)



→ ~ 50 kg extra grain/year



Human excreta recycling in context – nutrient flows



Human excreta potential in context – comparing nutrient flows

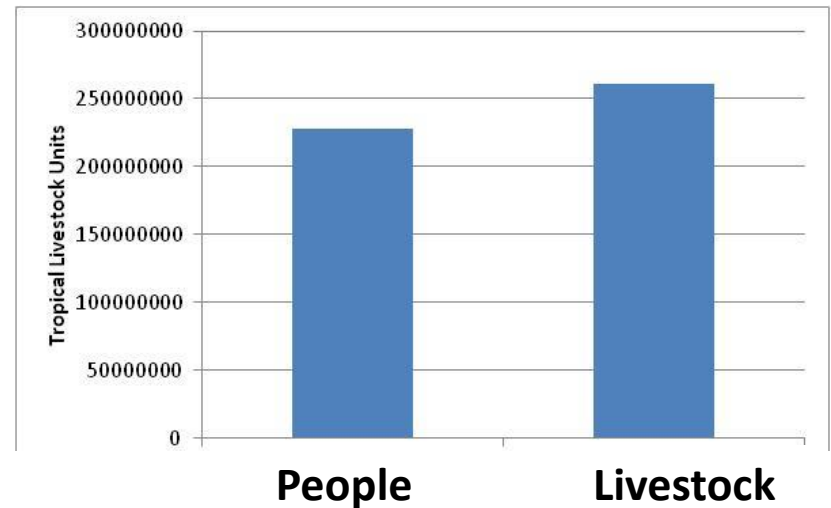
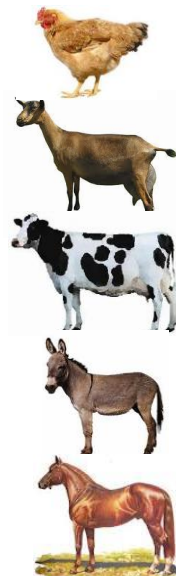
Excreta from 830 million people in SSA ↔ chemical fertilizers ↔ livestock



Annual nutrient flow in human excreta in relation to chemical fertilizer use in SSA

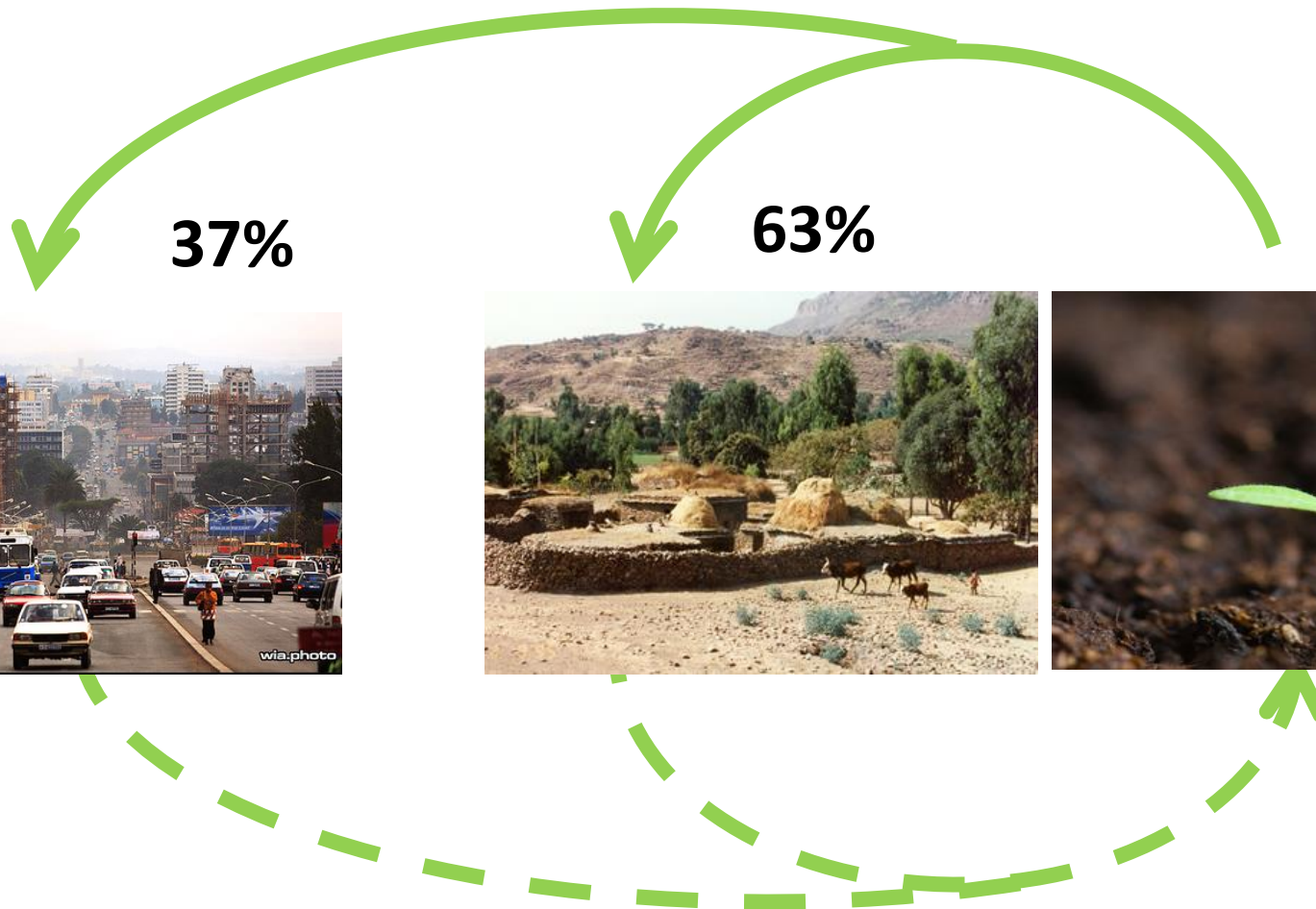
N	P ₂ O ₅
2,0	1,4

Source: Dagerskog et al. 2014



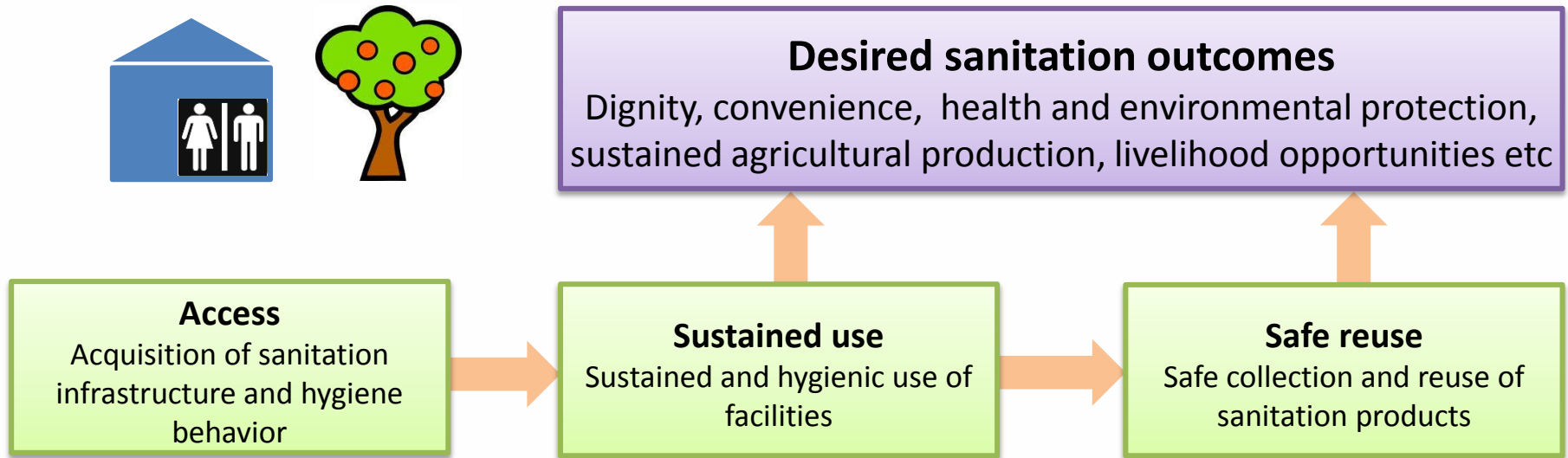
Estimate from TLU comparison
(for humans based on 40 kg/person)

Closing the rural and urban loops – SSA



- Rural majority in SSA is projected to remain for another 25 years (UNDESA, 2012).
- 75% of the extremely poor (<1.25 \$ per day) in SSA live in rural areas
- 62% of the rural population is extremely poor (IFAD, 2011).

Limits to present rural sanitation efforts



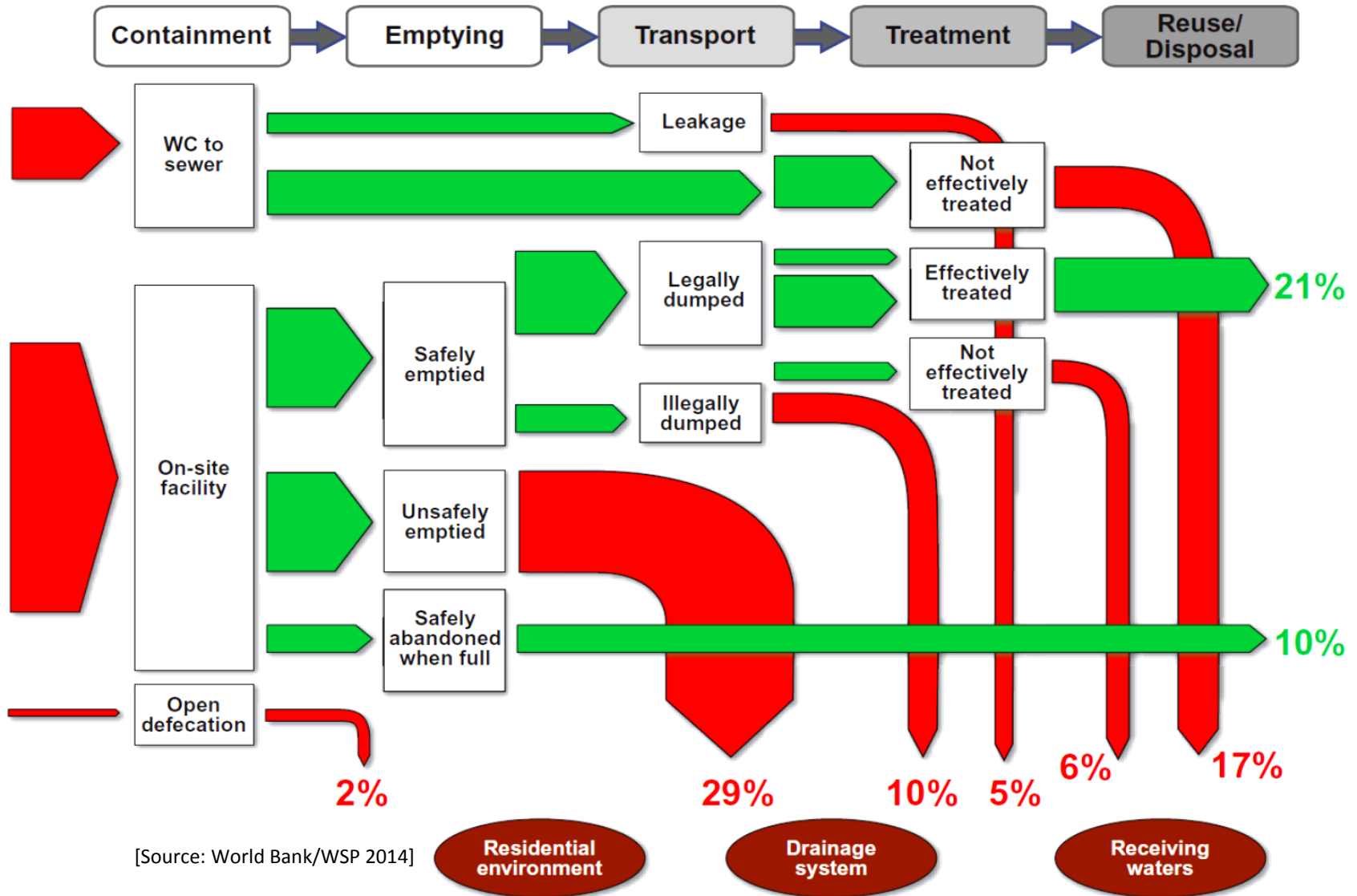
→ **Narrow focus of conventional sanitation interventions in rural settings**

→ **Limited sustainability/scalability of productive/ecological sanitation efforts**

Urban opportunities:

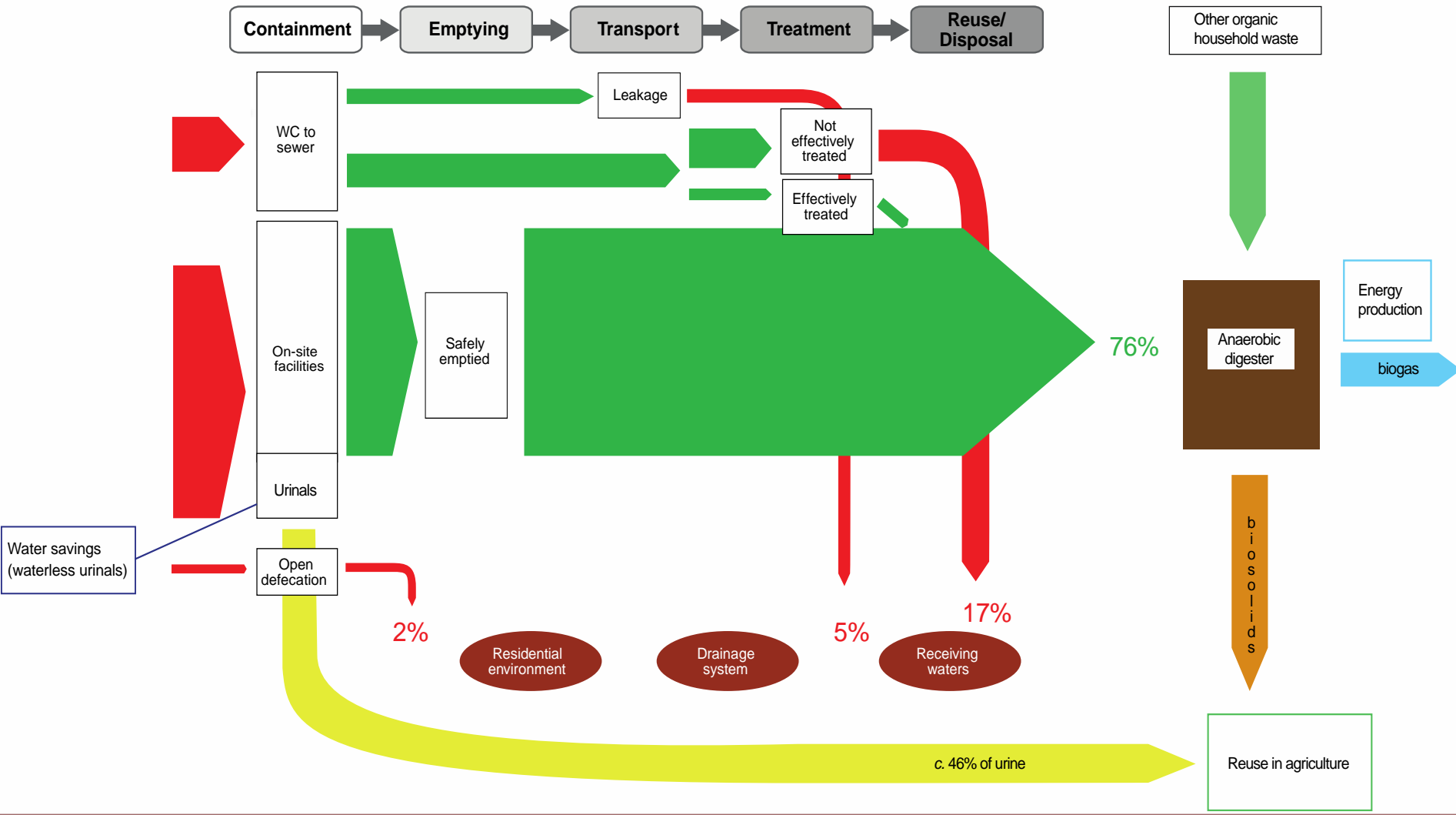
Faecal Waste flows in Dakar, Senegal – present status

The green arrows show “safe” flows, while the red arrows show unsafe flows, in which pathogens and other contaminants are released into the environment.



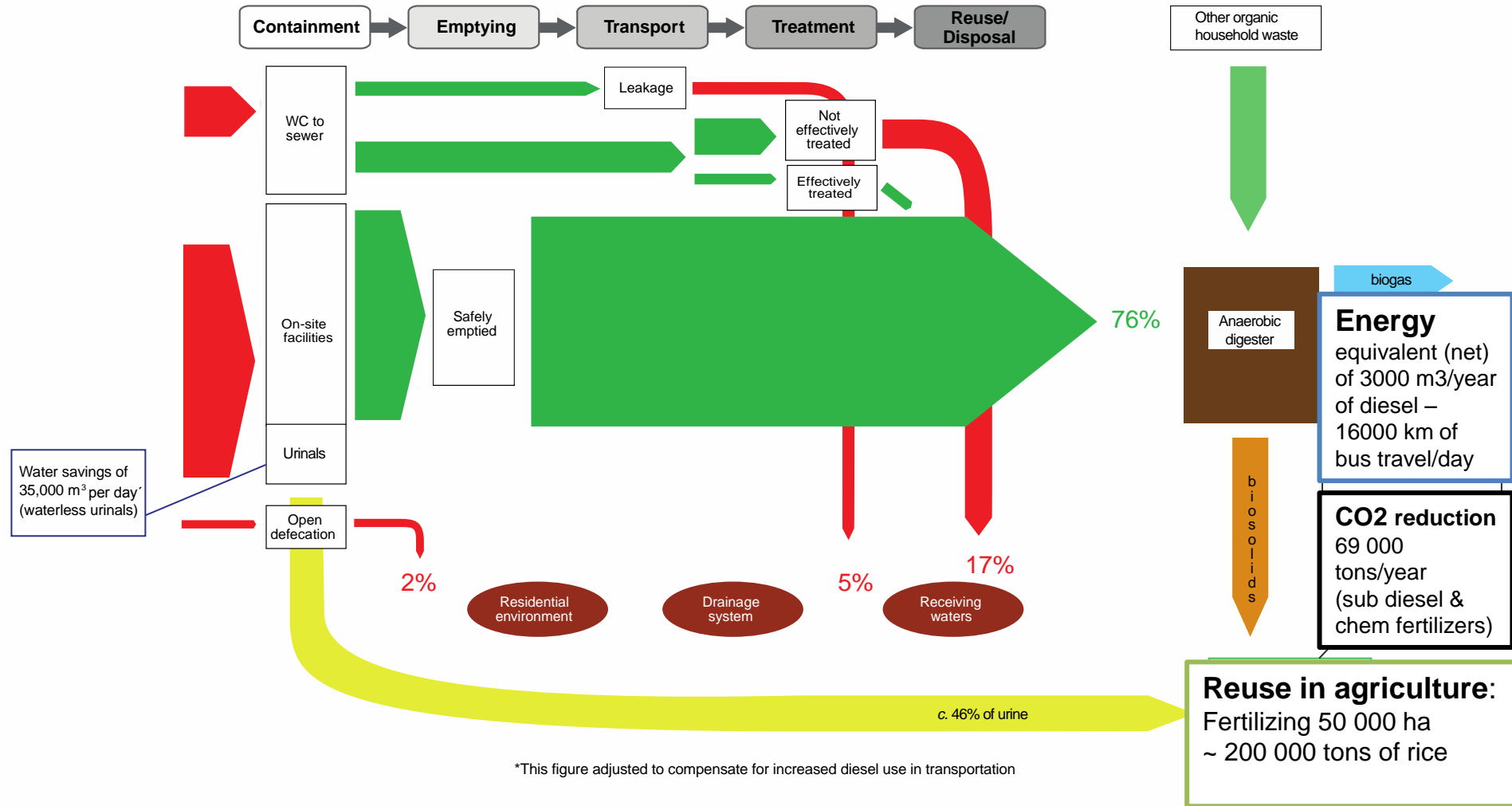
[Source: World Bank/WSP 2014]

Taking a Nexus approach with *Productive sanitation* in Dakar

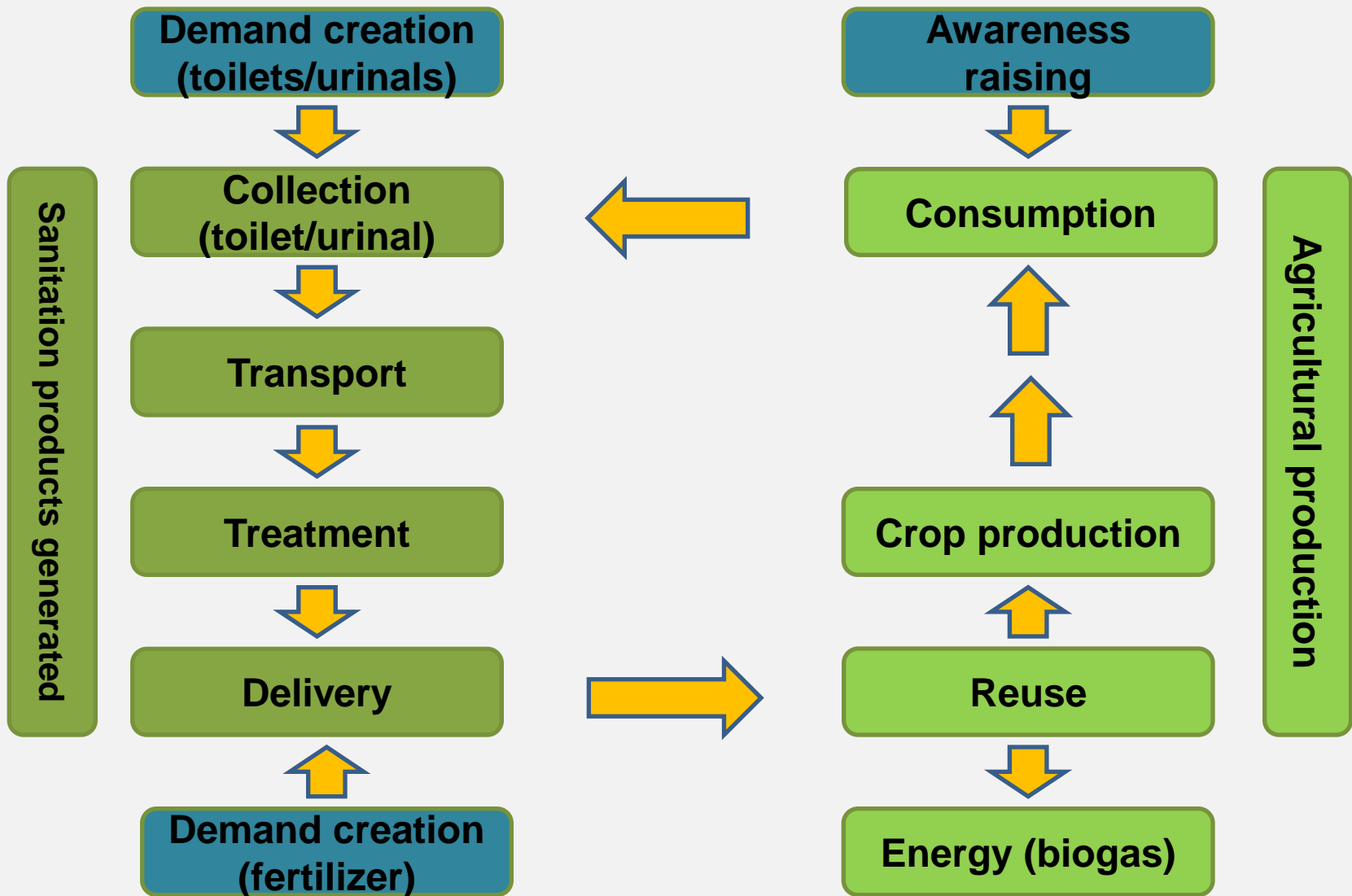


Adding the numbers:

Quantifying potential nexus benefits of productive sanitation in Dakar



Productive sanitation value chain



LEGAL/INSTITUTIONAL FRAMEWORK

Conclusion

Opportunities

- Rural → Ex. collaboration of WASH + agriculture extension
- Urban → New business models for resource recovery emerging
- SDG → Beyond toilets!

Challenges

- Sustainability of interventions?
- Institutionalization to enable scale?



THANK YOU – MERCI!!!