

# Business innovations in sanitation for refugees settlements in East Africa

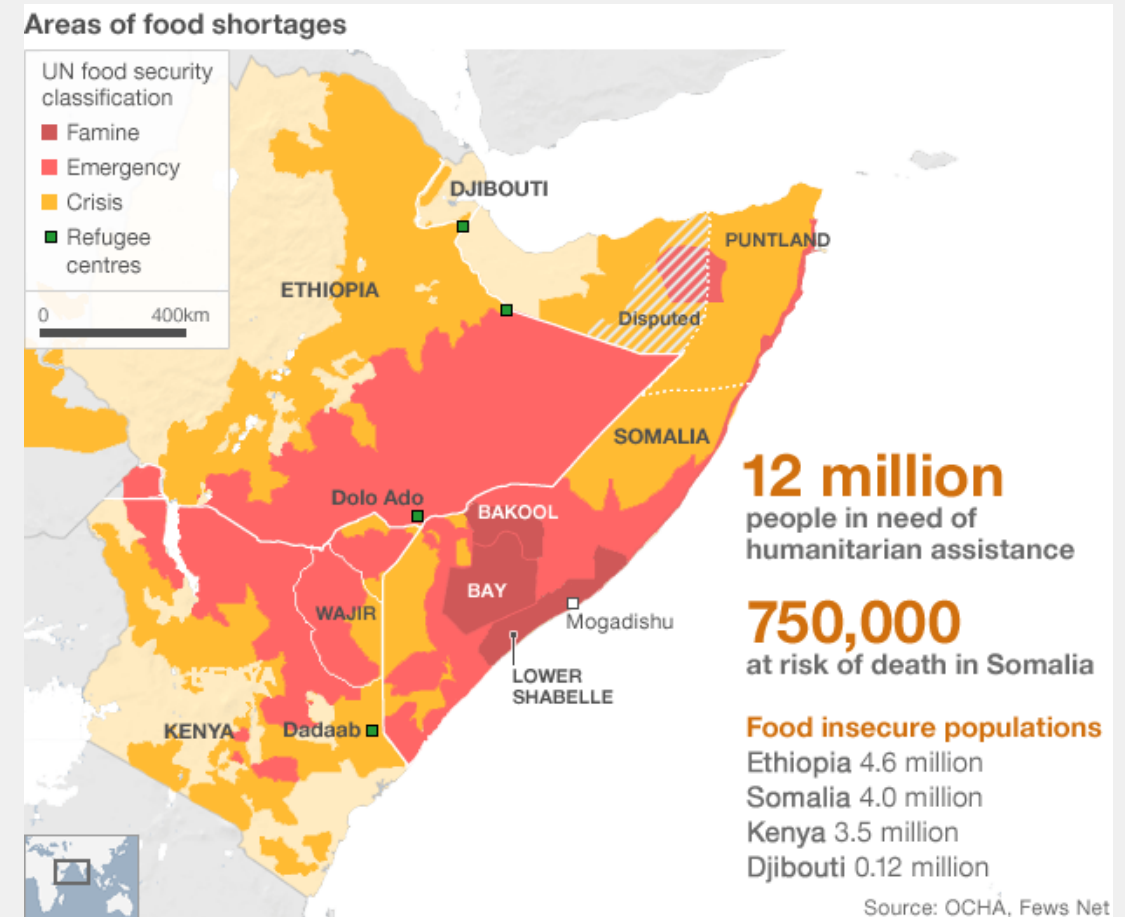
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# Sub-Saharan Africa generates and hosts the world's largest refugee population...

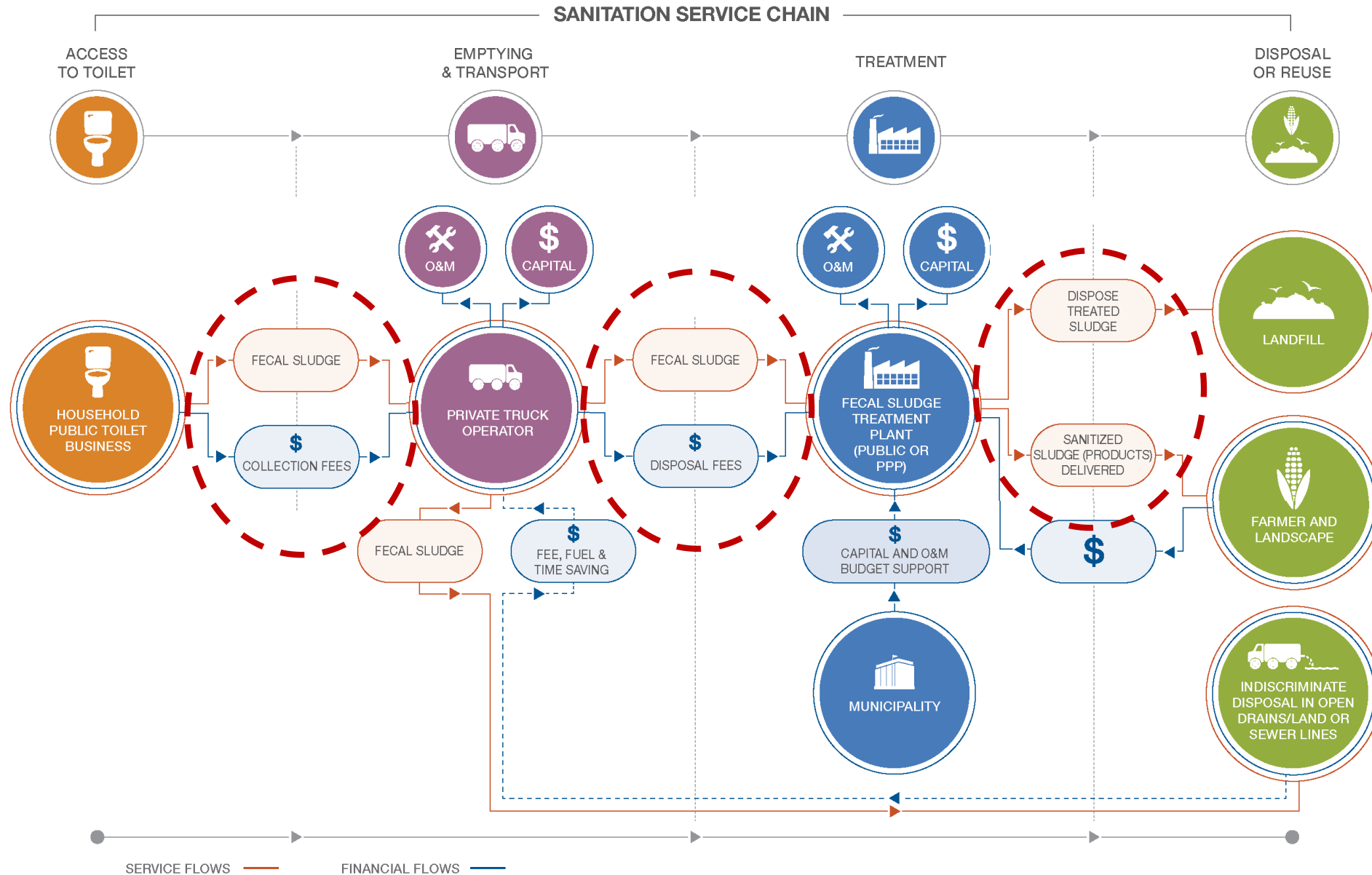
- Over 4 million refugees hosted in region (2015), eq. to 25% of total refugee population under UNHCR.
- More than 50% (2.7 million) were hosted in the East and Horn of Africa region (UNHCR 2016).
- Kenya hosts 554,000 refugees of which more than 60% was female and 70% children (UNHCR 2016).
- **Refugee populations exponentially increasing due to continued civil and political unrest in neighbouring countries!**



# The Challenge we face...

- Limited access to toilets.
- Main FSM solution = dig pit latrines.
- Sanitation programmes designed around pit latrines face the problem of rapid sludge accumulation.

# What really happens when the pit is full?



## Here comes the sludge!

- Less than **10% of wastewater** in the region finds a sewer and even less gets treated.
- Pit latrines dominate in refugee settlements and most host communities, but without treatment plants, this is what happens when the pit is full.
- Thousands of tons of organic human waste, rich in carbon, nutrients and energy “wasted” daily → **missed opportunity!**



# Dwindling resources in refugee settlements and host communities!



- Extreme population pressure → **competition for soil, land, water and wood energy.**
- Increased soil fertility depletion, water shortage and deforestation.
- **Gender-specific challenges** to access alternative resources → greater food insecurity and poorer livelihoods.
- **Circular thinking** offers solutions linking sanitation and natural resource management!





## Circularity – a game changer for sanitation:

### • Key requirements:

- Need the right technology and **business model!**
- Sales and cost recovery in support of the sanitation service chain and/or to incentivize private sector engagement in fecal sludge management.
- One that can **recover opex** or even **capex**, and **avoid waste disposal costs.**
- Catalyzes **small business creation** with great potential for rebuilding livelihoods of women and youth.

## ❖ Case Example: Sanivation, Kenya

- Sanivation installs modern container-based toilets for free and charge a monthly fee to service them.
- Convert collected waste into **cost-effective, clean fuel** (briquettes).
- User-focused, and **vertically integrated** sanitation services covers entire sanitation value chain.
- **License model to refugee camps** – work with implementing partners to design, build, and train local staff and refugees.
- **Catalyze policy development** – 2016 Env't. Health and Sanitation Policy (achieve universal access to basic sanitation, while prioritizing technologies with greater emphasis on RRR and safely managed sanitation systems).





## ❖ Social enterprises in waste-based energy production

- **Scale:** Small (<300T/ year) and medium (300–1,500 T/year).
- **Investment cost:** USD 30 – 450K (depending on scale).
- **Organization type:** Private or cooperative, PPP.
- **High replication potential:** no sophisticated financing and technology requirements.
- Beneficial to **women and youth** using fuel with less indoor air pollution than firewood; time savings for girls in fuel collection which can be used for education.



RESEARCH AND



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RECYCLING



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INSTITUTIONS AND  
ENERGY INTENSIVE  
INDUSTRIES

# Conclusions

- **Resource recovery and reuse** is as relevant in refugee settlements as in host communities, although the enabling environment might only be emerging.
- With economic and social benefits, **financial gains should not be ignored**.
- Support implementation and scaling of **gender-responsive RRR options**.
- Community-based pilots established, **analysed for viability** and scaling potential.
- Particular attention to **roles and technology preferences** of men, women and youth in RRR product production.
- Build **stakeholders' capacities** on technologies and business strategies.



The case studies were selected from these publications.

Thank you.

