

# Resource Recovery and Reuse (RRR): The Role of Research

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RESEARCH  
PROGRAM ON  
Water, Land and  
Ecosystems

Led  
by:





To bring RRR to scale, it needs  
'political will', stakeholder support  
and an enabling financial and  
regulatory environment...

... and education to create  
awareness.



# Research ?

Many of us work on exciting new technologies, service chains, or behavior change, and agree that **research has an important role.**

Yet, we could ask us:

- Do we investigate the right issues?
- Is the research focus shifting?
- And are we game to fit changing needs?

Some reflections with my own bias

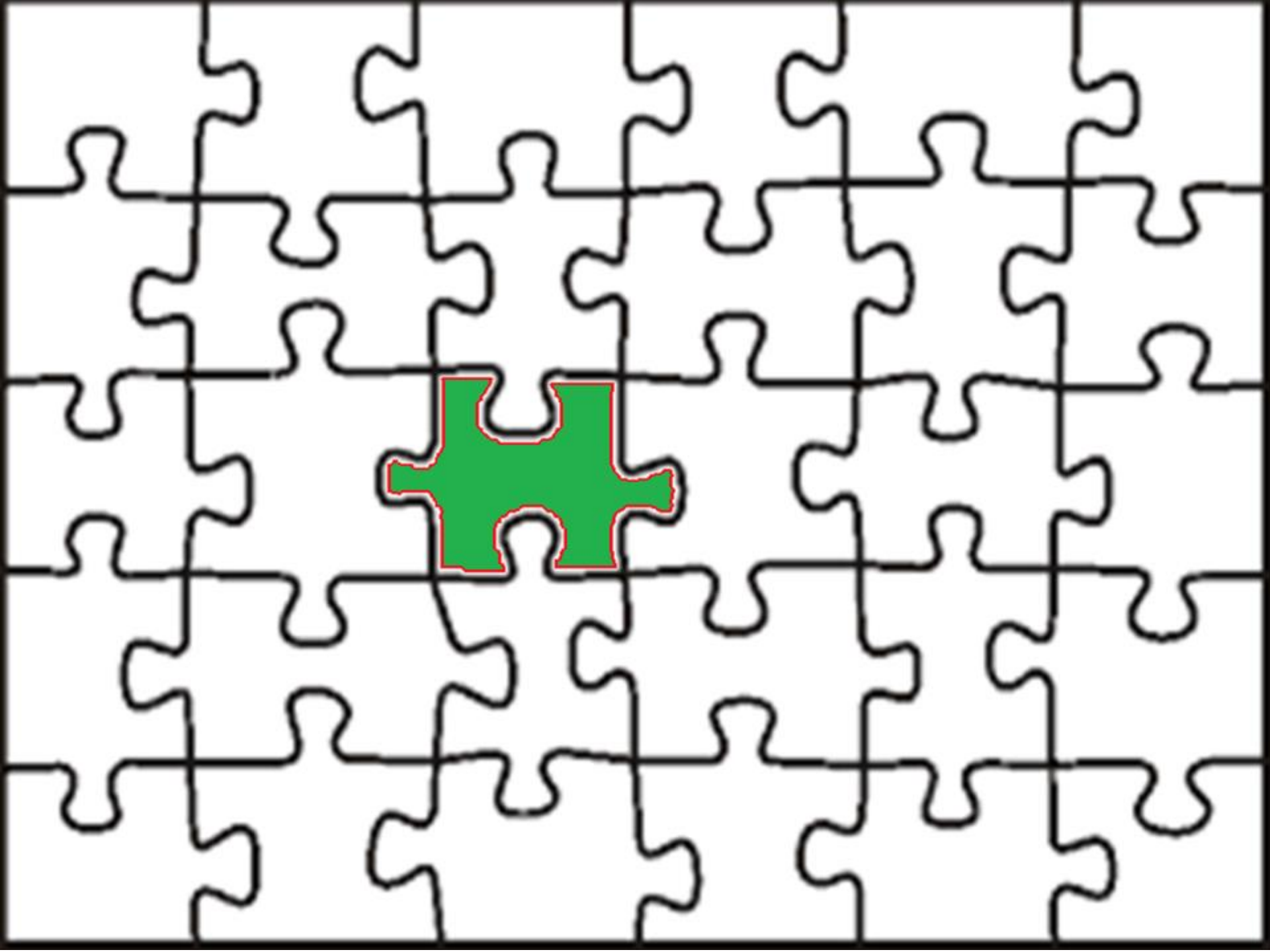




SDG 6.3 ..... and substantially increasing recycling and safe reuse globally

**Planning “treatment for reuse” to expand the area (or volume) of water reuse**







How to turn already existing reuse  
safe?

How to incentivize farmers to adopt on-farm  
'safety measures' despite limited risk  
awareness or tangible benefits?

# Many research needs around the RRR loop



Co-composting  
in Ghana











**FORTIFER**

**MIXED ORGANIC FERTILIZER  
(MANURE)**

- 3-2-1 {
- Bio-sludge
  - Organic Solid Waste
  - Ammoniacal Sulphate/Chickens

Reg. No: PFRD/ PR/ 16/ 000-1

**Net Weight  
50kg**

Improving Soil Fertility & Crop Yield

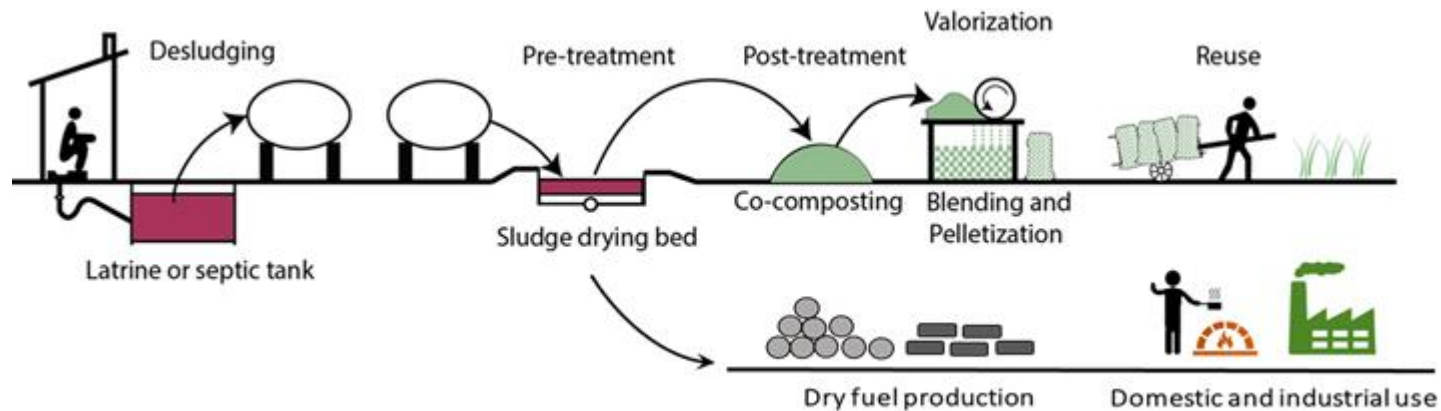
PRODUCED AND MARKETED BY

**EXORA VENTURE**

MADE IN GHANA



# Pertinent research challenges at every step of the RRR loop **but even more across the service chain**



## Example:

- Large variations in design, use and management of OSS systems and the variations in sludge quality influence treatment options and challenge the optimization of the FS reuse value.



# Changing purpose = Shifting research emphasis



A photograph of a modern playground with various equipment including slides, climbing frames, and platforms. The equipment is primarily green, blue, and red. The playground is set on a bed of wood chips and is surrounded by trees and a clear blue sky. A semi-transparent blue box is overlaid on the center of the image, containing white text.

Pilots are research playgrounds.  
You go commercial,  
you survive or die!



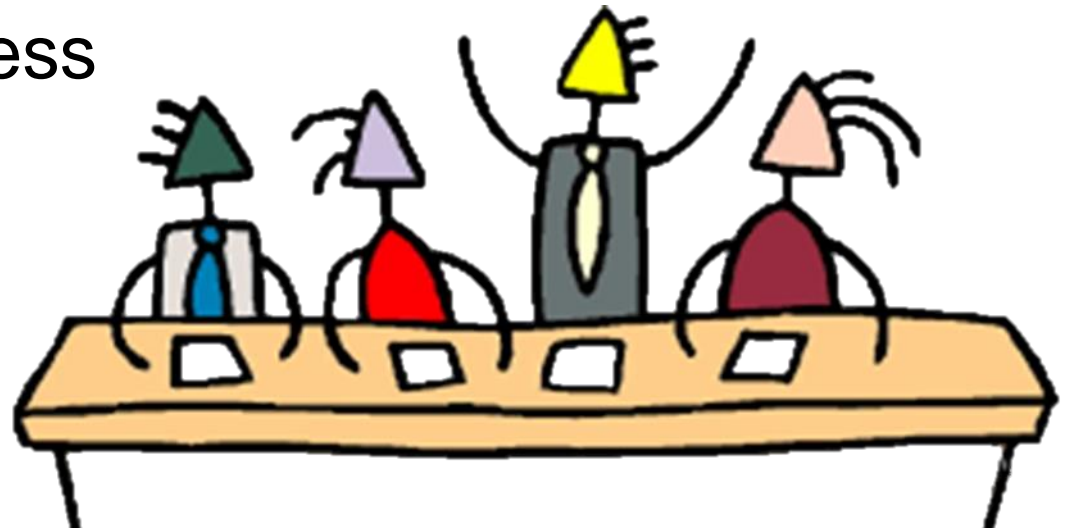
# Research questions more implementation oriented

- What kind of PPP contract and business model will be the most sustainable (e.g. waste reduction and/or compost sale based)?
- **What is in the local context the best mix of finance?**
- How to reduce transaction costs in accessing carbon credits?
- **How to manage the compost certification and approval process?**
- What do we know about (i) different market segments (size, location, perceptions, demand), and (ii) competing products & providers?
- **Which hook to use in a competitive marketing strategy?**
- How, when, and how much enriched compost to apply on crop A, B, C, on soil X, Y, Z, under climate 1, 2, 3 ?
- **What is our economic impact to lobby for support?**
- How to increase cost recovery and when will we break even ?



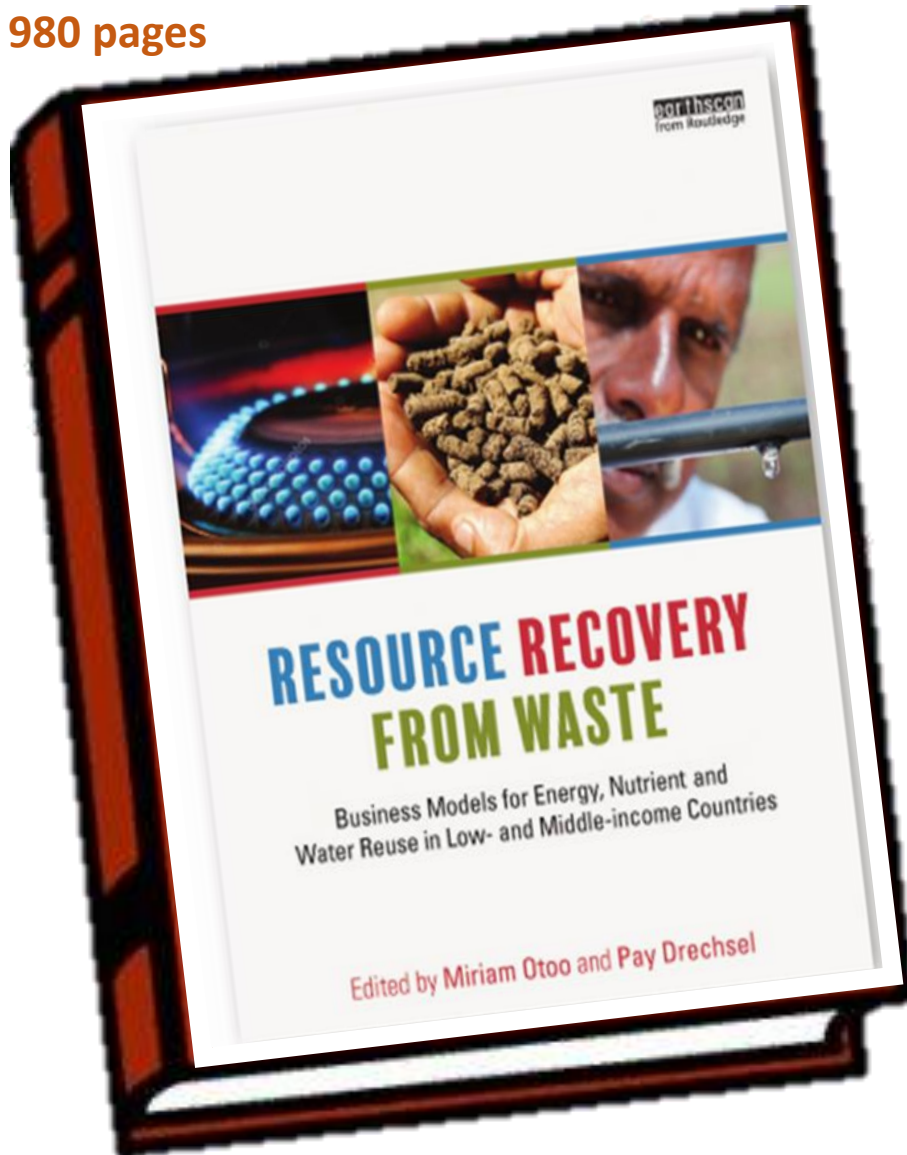
# Are we fit for the game: do we have the right research capacity?

- How many (i) engineers, (ii) social scientists, and (iii) economists do we have in the room?
- How many soil fertility specialists?
- How many institutional and PPP experts?
- How many business developers and finance experts?



# New research output

Dec. 2017  
980 pages



# Thank you