Decentralisation – are we on the same page?

Snapshot of participants doing individual concept maps

The term 'decentralisation' is widely used across different disciplines when studying sanitation systems. There are, however, different implicit conceptions of when and how the term should be used. To make these conceptions explicit, a workshop was conducted within the strategic inter- and transdisciplinary research program Wings (Water and sanitation innovations for non-grid solutions). Involving researchers from different disciplinary backgrounds, the workshop did not aim at creating a new definition of decentralisation, but rather at exploring various terminologies that describe 'decentralised sanitation systems' (DSS). Building upon the diversity of expertise present, participants co-developed different frameworks to systematise DSS. This summary presents the methodology used and the key findings from this workshop.

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Introduction

'Water and sanitation innovations for non-grid solutions' Wings is an inter- and transdisciplinary strategic program that consists of four research pillars - Disconnect, Hybrid, Emerging and Informal - that represent four ideal-typical socio-technical system configurations. Various decentralised sanitation system (DSS) terminologies are frequently used within these pillars, including 'non-grid sanitation systems'. Given that such a program brings together researchers from various disciplinary backgrounds who are all interested in the topic of 'non-grid sanitation systems', we assume that ensuring the clarity of key terms is crucial for effective collaboration within the research program.

Wings recognizes the diversity of socio-technical urban water systems and their variety in terms of source separation, decentralisation, and modularization. In order to achieve the above-stated goals pertaining to both fostering clarity of key terms, and of exploring the diversity of DSS, a workshop was organised to capture and characterise the terminology from multiple perspectives.

The term 'decentralisation' has been widely used within the water, sanitation and hygiene (WASH) academic literature in diverse contexts differing with regards to technologies, management, and governance systems. Previous efforts to define the term 'decentralisation' have not yielded a clear consensus within the field. The aim of this workshop is not to add yet another definition for DSS to the scholarly literature. Rather, it is to

a) gather together the wide range of terminologies associated with DSS in different socio-economic contexts,
b) identify the defining features of DSS, and
c) raise awareness among workshop participants of the different perspectives.

Methodology

A novel workshop methodology was developed based on an adapted version of an open-ended conceptual content cognitive map. This was used to explore the full range of existing terminologies that are related to DSS from different disciplines. The half-day workshop structure consisted of several rounds of individual work, group work and plenary discussions. A total of 20 researchers from multiple disciplines (process and environmental engineering, geography, development studies, social science, policy and governance) participated in the workshop. All group work and plenary discussions were recorded as audio files and pictures.

1. To begin with, the participants were asked to write down the terms that they associated with DSS. These terms were collected and displayed. Additional terms were added by the workshop facilitators which were not mentioned, but had been collected in a basic literature review prior to the workshop.

2. Then, participants were asked to create an individual concept map of a DSS. Prior to the workshop, participants were asked to bring a representative picture of a DSS to the workshop. This visual became the starting point for addressing the following questions: (a) What would you consider to be the defining features of a DSS? (b) How might these characteristics be related to one another? (c) Why do you consider each of these characteristics to be important for defining a DSS? The visual was placed in the center of a large piece of paper and the participants wrote their responses to the questions around it. They were also asked to draw arrows to demonstrate the relationship between the characteristics.

3. Next, participants were put into groups of 4–5 participants with the aim of reaching as much disciplinary heterogeneity as possible. In these groups, participants presented their own individual concept maps. Each group then drew a joint group concept map proposing a framework based on these inputs to organise and systematise all the characteristics. (See examples below). The group then used the conceptual frameworks to arrange and locate the terminologies collected at the beginning of the workshop.

4. Finally, each group's output was presented in the plenary. Similarities and differences between group representations of DSS were discussed.


Decentralisation Terminology Box

1. Decentralized sewage treatment plants (STPs)
2. Distributed Systems
3. Small Scale Sanitation Systems
4. Semi Centralized STPs*
5. Modular STPs
6. Community Scale STPs
7. Cluster Sanitation Systems*
8. Local Treatment
9. Household STPs
10. Satellite Treatment Systems
11. Development Scale Systems
12. Non Network Solutions
13. Off-Grid Sanitation Systems
14. Non Sewered Technologies
15. On-site Sanitation Systems
16. Fecal Sludge Management
17. Container Based Sanitation
18. Nature Based Sanitation Systems
19. Omniprocessor *
20. Hybrid Systems
21. District Scale STPs
22. Neighborhood Scale STPs
23. Adaptable Systems
24. Precinct Sanitation Systems
25. Dry Sanitation
26. Disconnected
27. Rural Systems
28. Unconventional
29. Condominial
30. Small Grid Systems
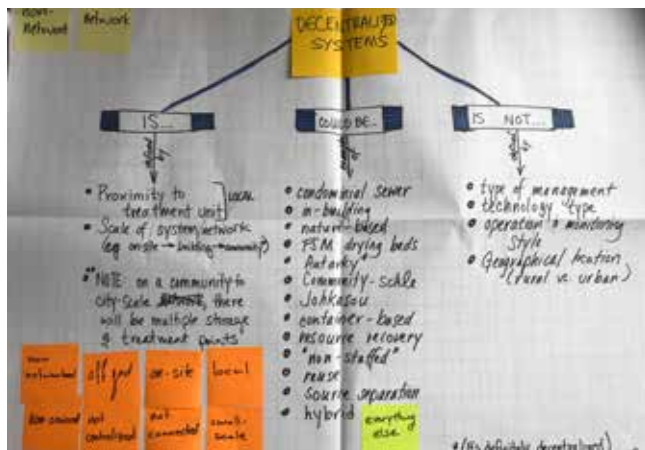31. Local Scale wastewater management system

*Terms that were not identified by the participants, and taken only from literature.

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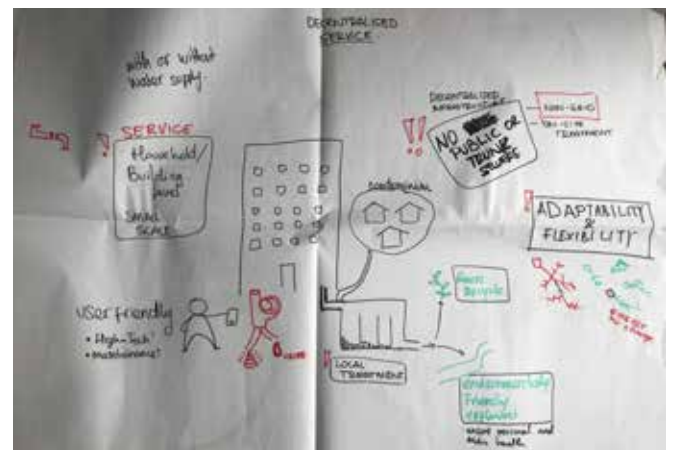non-grid solutions
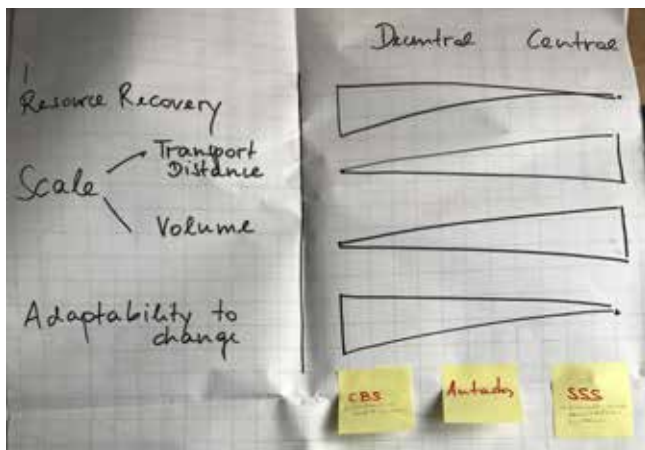
A conceptual framework based on three key characteristics
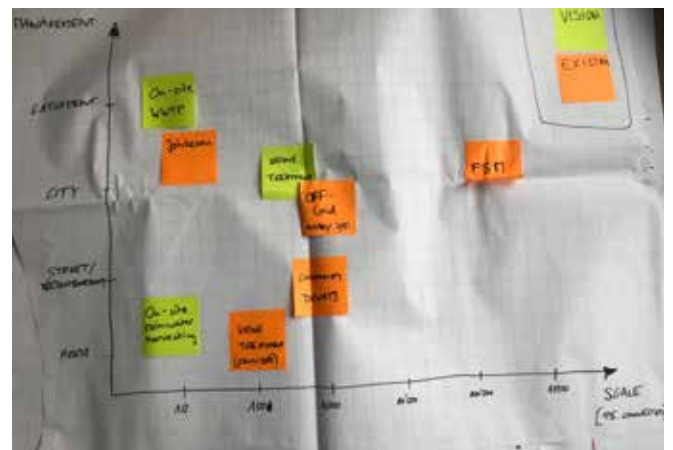
Arrangement of various DSS terms within a proposed framework

Defining decentralized systems by 'what it is', 'what it could be' and 'what it is not

Concept map with rich picture elements

Preliminary Results

Over thirty different terminologies associated with DSS were identified. In groups, participants also created concept maps and frameworks based on key characteristics of DSS in order to better understand the concept of decentralisation. Among the four groups, two groups focused on conceptual characteristics while the other two went on to develop initial frameworks with examples of DSS terms placed within them. From the concepts and frameworks developed, three main similarities emerged:

1. Scale of treatment – population equivalence, volume, and geographic scale (e.g. household, neighborhood, city and catchment).

2. Proximity of source to treatment – distance between the waste generation and the treatment plant. It could also mean the length of the sanitation value chain i.e., the distance between source and reuse.

3. Adaptability/modularity/flexibility – the ability of systems to be modified as per need.

Two other key characteristics that all groups discussed were resource recovery and management. However, participants had conflicting views regarding the relative importance and uniqueness of these characteristics.

The concept maps and the plenary discussions revealed that physical attributes (technology, operation & maintenance) and normative attributes (sustainability) contributed to the identification of key characteristics. Additionally, DSS was interpreted differently by various participants to mean either treatment, management or the sanitation value chain itself.

Conclusion

This workshop allowed participants from diverse disciplines to explore the wide range of existing terminologies used for describing DSS and exposed them to key characteristics and attributes beyond their own disciplinary backgrounds. Participants concluded that in order to better understand DSS, it is necessary to move from "what it is not" to "what it is". This workshop identified key characteristics that could help systematize various DSSs by drawing upon diverse concept maps elaborated by experts from different disciplines. However, the range of these key characteristics still needs to be further defined to better understand the terminologies used for describing DSS and decentralisation itself. This opens up an interesting perspective for further research.

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