



Linkages between water, sanitation and food production for food and nutrition security - Expert group final report.

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The group investigated how Swedish actors in the water, sanitation and food/nutrition sectors work in a holistic way, how they manage the links between sectors from both a risk and a *resource* perspective, and what opportunities exist for low-middle income countries. The key questions that the expert group explored were;

1. What are the potential benefits of linking water, sanitation and food systems to enhance food and nutrition security?
2. What are the main pathways by which nutrients and contaminants are transferred between water, sanitation, food and humans?
3. What are the main challenges and knowledge gaps to recycling nutrients, while minimizing contaminants in WSF systems?
4. What are the barriers to holistic management?

The group consolidated a loose network of active participants, who, during January to November, 2016, contributed to a number of sector-bridging events and discussions (see below), resulting *policy recommendations* (submitted to the SU Development Research Conference) and a *SIANI discussion brief* (submitted).

Key messages from the discussion brief included that cross-sectoral work is necessary in order to meet the “2030 Sustainable Development Goals” and that:

- 1) WASH is essential for reaching nutrition goals in international development;
- 2) Linking water, sanitation and food sectors has potential advantages for both human and ecosystem health;
- 3) Main barriers to holistic management are silo-thinking and lack of communication;
- 4) Common goals, knowledge sharing and models and examples for cross-sectoral management are needed.

Activities and outputs:

Multi-stakeholder workshop: “*Linkages between water, sanitation and food production for food and nutrition security*” (18th of March, 2016)

Seminars: “*Water and Health*” (13th of June, 2016) and “*Water for sustainable growth*” (1st of September, 2016)

Communication: A joint exhibition “*Water for Health and Nutrition*” at the KTH Water Centre, Dome of Visions (June-August, 2016) and a newsletter (August 2016)

Masters research: Daniel Ddiba was jointly supervised by SEI and KTH on his masters thesis: “*Estimating the potential for resource recovery from productive sanitation in urban areas*” (resulting in a SEI discussion brief and manuscript submitted for publication)

Conferences: A panel was organised by the group at the Development Research Conference (Stockholm University, 22-24th of August, 2016), Daniel Ddiba presented his masters thesis work at the Kampala WASH symposium (Kampala, Uganda, 20-23rd of June, 2016) and at the 22nd SuSanA network meeting (Stockholm, 27th of August, 2016)

Survey and interviews: An on-line survey was sent out to a wide range of actors and in-depth interviews were conducted.

Synergies and added value:

- The seminars were organised together with the newly formed *KTH Water Centre*, which broadened participation and outreach.
- *New collaborations* have developed between individuals at participating organisations and common funding proposals have been and are being prepared.
- Added value for participating Salvation Army *practitioners* from Kenya who were able to participate in a scientific conference (the Development Research conference), where they presented their work and engaged with a wide range of scientists and actors, both from expert group and beyond. The SIANI budget contributed to a small part funding.
- The *joint supervision* of master thesis work led to more exchange between SEI and KTH.
- The active members of the expert group *contributed substantial time* by planning and participating in meetings and seminars, survey design and organisation, while presenters and interviewees contributed their time and expertise on a voluntary basis.

Challenges:

Engaging actors across sectors: We had hoped to engage more actors from food and nutrition sectors, but found this quite challenging. As time proceeded we did manage to make more contact in the nutrition sectors (e.g. via KI and SLU).

Survey: It was a challenge to get answers to our on-line survey (by email). Due to the low answer frequency, we could not do a network analysis. Instead the qualitative survey answers provided valuable information, which in combination with in-depth interviews, literature review, as well as in-sights emerging from workshops and seminars, material for the key messages of the work of the group was gathered.

Time: it was sometimes difficult to combine the contribution of different group members with other pressing duties, especially since the time was voluntary. However, on the whole, by engaging a wide range of people along with a dedicated group of core members who contributed actively at different stages of the process, we still managed to complete the work.

Active contributors to the group: Sarah Dickin (SEI), Kim Andersson (SEI), Daniel Ddiba (KTH), Björn Schulte-Herbruggen (SRC), Ngolia Kimanzu (Frälsningsarmén), Prosun Bhattacharya (KTH), Noubissi Tenku (EcoRelief), George Obondo (Salvation Army, Kenya-East), Mathews Tulombolombo (Salvation Army, Malawi), Arno Rosmarin (SEI), Erik Karlton (SLU), Eva-Charlotte Ekström (Uppsala University), Maritha Hörsing (KTH), Linus Dagerskog (SEI), Tobias Robinson (Tyréns), Arifin Sandhi (SU/KTH) and Viveka Mäkelä (SU).

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