

## **Day 2 - Wednesday Nov. 3rd**

### **Chat Conversation**

#### **Social Change and Cultures of Urine Nutrient Reclamation**

*Moderator: Jamina*

*Presenters:*

**Aurélie Joveniaux, Bernard de Gouvello, and Fabien Esculier**

**The project of urine diverting in the Saint-Vincent-de-Paul district (Paris 14e, France) – Presentation and perspectives**

- **From Abe Noe-Hays:** What method/technology will be used for concentrating the urine in the new Paris development?
  - **Response from Fabian:** urine nitrification/concentration treatment has been identified as suitable by the actors but the public command of the effective process is not made yet
- **From Prithvi Simha:** can you tell us more about your dialogue with the City of Paris and how they were convinced on the use of urine for green spaces.
  - **Response From Fabien & Aurelie:** 1) OCAP program sensibilized the City of Paris to urine source separation in a context of interest for the subject by some actors of the Paris (waste-)water community since 2013 2) green spaces were chosen by the city of Paris notably because they can internalize the value chain and concentrated urine is not yet marketable today in France
    - **From Prithvi Simha, SLU:** Thanks Fabien - when you were sensitizing your stakeholders, did you find that it was a few key actors within the City of Paris that liked the concept of urine separation? And they pushed the program forward?
    - **From Fabien Esculier & Aurélie Joveniaux / OCAP:** In Paris, the interest arose from elected politicians and their cabinet and they were powerful enough in the community to push the project forward despite multiple barriers
- **From Rebecca Nelson:** I appreciated Kim's point about sharing solutions yesterday, but also Fabien's implied tweak that we should share a set of solutions and fit the specifics to the particular contexts
- **From Matthew Liles:** Who regulates the treatment process? We are struggling to find a pathway for this in MA. To clarify my question, is there a municipal department that oversees the treatment, monitors the safety of the fertilizer?
- **From Shrikant Navrekar:** Is the end product in liquid form? Does it pose any problem in transport?
  - **Response from Fabien & Aurélie:** 1) yes the urine-based fertilizer should be liquid ; 2) logistics was a crucial reason downtown Paris to choose concentration but approx. 1 truck every 2 months was considered acceptable for urine-based fertilizer transport
- **From Tatiana Schreiber - Rich Earth:** Can you say more about the "principle of reversibility"? In what way did you mean?
  - **Response from Fabien & Aurelie:** All projects we have studied include the possibility to shift to conventional flush toilets connected to the sewer
- **From Merilee Karr PHLUSH:** The history of source separation in France is fascinating. How can we learn more about this?
  - **Response from Fabien & Aurélie:** We did and do quite a lot of work on history of source separation. Most of it is in French, see [www.leesu.fr/ocapi/bibliotheque](http://www.leesu.fr/ocapi/bibliotheque), including my thesis and E. Adler's thesis. One recent article in English about Paris: [https://doi.org/10.1007/698\\_2019\\_407](https://doi.org/10.1007/698_2019_407)
    - **From Merilee Karr PHLUSH:** Fabien, thank you for the historical links. I consider

history to be detective work.

- From Fabien & Aurélie: OCAPI in English: <https://www.leesu.fr/ocapi/presentation/ocapi-program/>
- From Carol McCreary, PHLUSH: Technocrat leadership works in France. I agree with Prithvi that follow technical people, but walking closely behind them.
- From Raymundo Acevedo: Fabien, can you share with us some of the flyers / info / campaign you handled to people in Paris to inform them about this urine diversion system? Thanks!

#### **Prithvi Simha**

##### **Why we need more technology developers to take part in socio-technical systems research on urine recycling**

- From Carol McCreary, PHLUSH: Did you show Jordan sample were reluctant to hand wash with clean water separated from urine? Wouldn't Muslim hygiene culture affect these attitudes?
- From Aurea Heusser: Is there a publication out where we can see the data and graphs you just showed?
  - Response from Prithvi: yes, the global survey of consumers (<https://doi.org/10.1016/j.scitotenv.2020.144438>) and the farmers (<https://doi.org/10.1016/j.scitotenv.2017.01.044>) are published and you can also use our raw data (<https://data.mendeley.com/datasets/kccc8m9pn9/1>), but the Jordan study is still ongoing but I thought it was interesting to still share
- From Ole Ersson: surprising about negative perceptions of urine recycling in India given the history of Ayurvedic human urine consumption . Any comment?
- From Asfak Patel: Yes Dr. Prithvi. My startup on water recovery and fertilizer production from human urine is just rejected just because who will accept this water and fertilizer.

#### **Hayley Smith**

##### **Social-Ecological-Systems Framework to Assess Adaptive Capacity for Regenerative Sanitation System**

- From Merilee Karr PHLUSH: Hayley, you give us a very clear model of how to build a cross-domain model. Very big picture. Thanks.
- From Raymundo: Hayley, thank you! your schemes reminded me of this diagram of the 4 levels of thinking model (page 14): [https://www.wwf.org.uk/sites/default/files/2016-10/LPR\\_2016\\_summary\\_spread%20low%20res.pdf](https://www.wwf.org.uk/sites/default/files/2016-10/LPR_2016_summary_spread%20low%20res.pdf) . All 4 levels should be changed, the point is where to start or put the emphasis in.

#### **Tatiana Schreiber, Shaina Oppenheimer, and Julia Cavicchi**

##### **Nested risks and responsibilities: Perspectives on fertilizer from human urine in two U.S. regions**

- From Shaina Opperman: Leveraging integrative research for inclusive innovation: Urine diversion and reuse in agriculture <https://doi.org/10.1525/elementa.408>
- From Shaina Opperman: Nested risks and responsibilities: Perspectives on fertilizer from human urine in two U.S. regions <https://doi.org/10.5304/jafscd.2021.103.016>
- From Shaina Opperman: Urine Diversion Learning Case: <https://www.learnigala.com/cases/urine-diverting-toilets>
- From Hayley Joyell Smith\_ PHLUSH: This is a great diagram! Excellent work. Will this be published? Can we use this diagram for our own communication and educational purposes?
- From Carol McCreary, PHLUSH: Tatiana, How do focus groups and dialogue groups differ? How do you create a guide for the latter?
- From Merilee Karr PHLUSH: Your interviewees' concerns about corporations (Big P?) making money from their excreta echo conflicts about profit-making from DNA, Henrietta Lacks' cells, or developing-world products like neem oil. If urine is harvested more easily from some groups, and used to benefit other groups, conflict may ensue.
- From Hilda Maingay: Interesting that people did not want anyone to make money from urine. However sewage treatment plants are big money, with lots of lobbyists on every level.
  - From Rebecca Nelson: Would people be willing to see the provision of sanitary services

as the payoff to the donor population?

- **From Lynn Broadus:** There are many biosolids products (made from human excreta) that are sold to help off-set costs of treatment. I am presuming that the people who have concern re: urine sale are unaware of that.
  - **From Tatiana Schreiber - Rich Earth:** Regarding people's concerns about what happens to their urine: this is a good reason for dialogue groups. It gives us an opportunity to talk about how this relates to other uses of biosolids, for example, have a conversation, and perhaps alleviate some of the concerns, or figure out together ways to do this that don't feel exploitative.
- **From Shawn Shafner:** Is there some element of focus group / dialogue bias? By which I mean, if you give people the time and space to think about the problems and questions, they'll think of as many things as they can because they want to impress each other, the interviewer, themselves with their intellectual capacity. But that some of these concerns are more philosophical than practical?