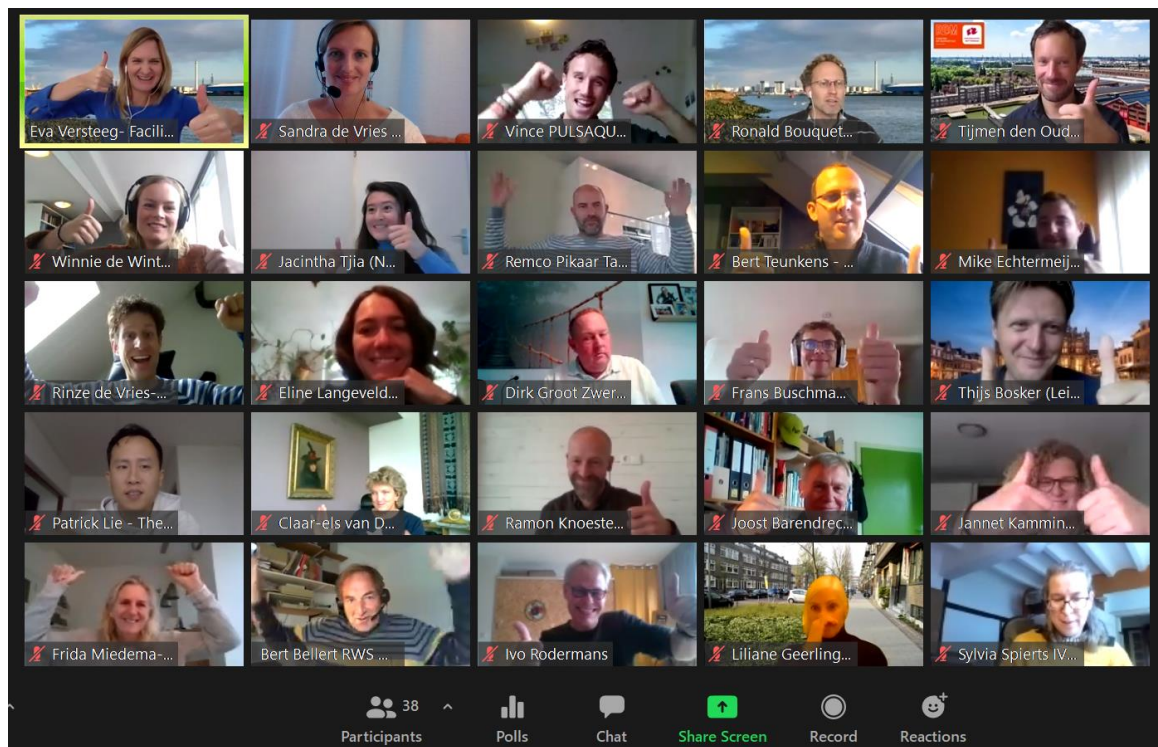


Van de Diepte naar de Oever: Samenwerkingsbijeenkomst plastic afval monitoring in Nederlandse stroomgebieden mbv citizen science

Date: 8 October 2020
Time: 9:30-12:00 CET
Venue: Online (Zoom)



Rijkswaterstaat
Ministerie van Infrastructuur en Milieu



HZ UNIVERSITY
OF APPLIED SCIENCES

TU Delft Delft University of Technology



Colophon

This report was written on behalf of the TU Delft citizen science platform WaterLab, by Mohammad Gharesifard (IHE Delft) and with input from Sandra de Vries (PULSAQUA). The report is written in English for two reasons:

1. At some point, we might want to share this process with our international colleagues, as this is a topic that will be important for any country, not just the Netherlands.
2. The main author's mother tongue is not Dutch and thus English was preferred as common language.

The meeting this report elaborates on is part of a broader research and goal concerning plastics monitoring in the Netherlands with the help of citizen science initiatives and methods. For more information about that, please contact us at waterlab-sc@tudelft.nl

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1. Aim and structure

The main aim of the stakeholder meeting was to bring together the stakeholders that are active in plastic waste monitoring in Dutch river basins, with a focus on using citizen science, to discuss different requirements, methodologies and experiences. The idea was to initiate a collaboration between these stakeholders that can lead to greater impacts through combining data sources, standardizations of methods and approaches and participation of all stakeholders.

The current report includes the results of a pre-meeting survey that was conducted to gauge the initial interest of respondents for participation in the meeting (section 2). Report of the activities and results of the Van de Diepte naar de Oever stakeholder meeting (section 3), and the plan for next steps (section 4).

2. Pre-meeting survey for initial gauging of interests for participation

Prior to the meeting a survey was rolled out to gauge the interest of respondents for participation in the meeting, both from an individual as well as organizational points of view. The survey also included one question to assess the interest of respondents in five proposed topics for breakout sessions. The findings of the survey are summarized here after.

Part I – Importance for organizations to participate

Respondents were asked to indicate why it is important for their organization to participate in the upcoming stakeholder meeting on 8 October 2020. 13 out of the 18 respondents provided answer to this question. The other 5 respondents were individuals with an interest in plastic pollution monitoring and/or Citizen Science. Here is an overview of the reasons for participation of organizations:

- Research on Citizen Science as a method for water quality and (macro and micro) plastic pollution monitoring (3/13)
- Positive environmental impact via reducing plastic pollution in a collaborative way (3/13)
- Gaining knowledge and understanding of sources of litter, and what you can do about it (2/13)
- Data collection about plastic pollution (2/13)
 - Data is needed to identify sources of pollution
 - Data is needed for opening conversation with polluters
 - Data is needed to trigger behavioural change
- Data standardization and merging sources of data (2/13)
- Knowledge and data exchange (2/13)
- Networking opportunities (1/13)
- Already established network of volunteers interested in collaboration about plastic pollution monitoring (1/13)



Figure 1 Importance for organizations to participate

Part II – Importance for individuals to participate

Respondents were asked to indicate why it is important for them (personally) to participate in the upcoming stakeholder meeting on 8 October 2020. 16 out of the 18 respondents provided answer to this question. Here is an overview of the reasons for participation of individuals:

- Professional, research or study-related interest about plastic pollution or Citizen Science, e.g. interest in gaining knowledge about initiatives, methodologies, data sources, etc. (10/16)
- Personal interest in contributing to reducing plastic pollution in practice in collaboration with others (5/16)
- Search for opportunities to link policy to citizen science results (1/16)

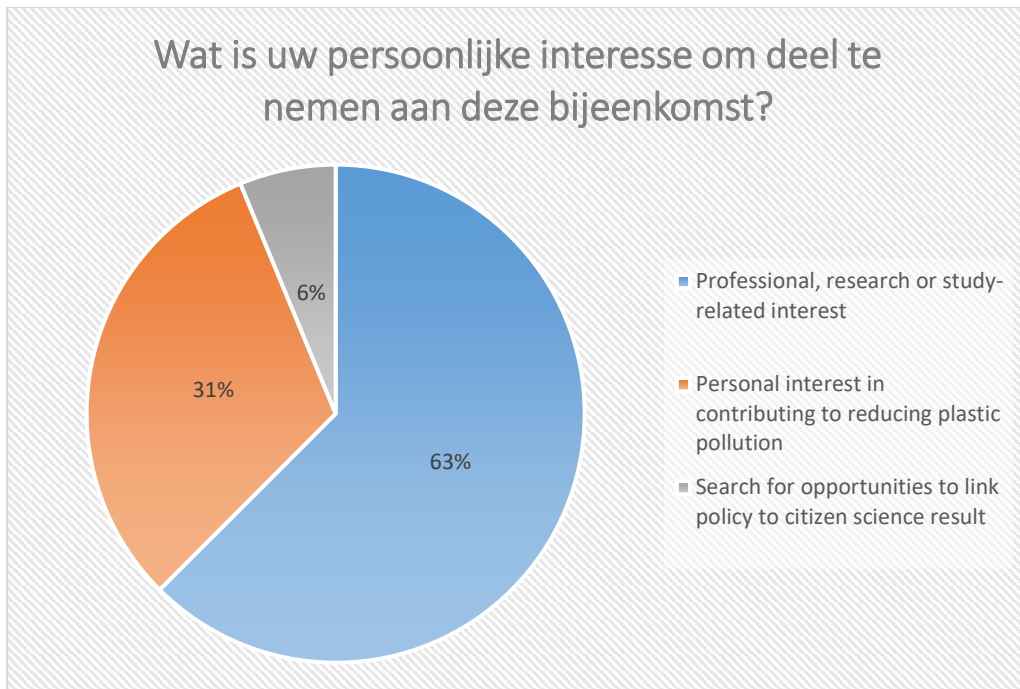


Figure 2 Importance for individuals to participate

Part III – Level of interest in proposed break-out sessions

The following chart illustrates the level of interest in the five proposed breakout sessions. Darker blue colors correspond to higher level of interest and lighter shades of blue correspond to low level of interest. The lightest blue color relates to ‘not indicated’ priorities. Overall, the highest level of interest was in *Onderzoeksmethoden* or Research methods that focuses on discussions about data collection (via citizen science, professionals, scientists) and what is measured (indicators, measurement methodologies). The level of interest in the other four categories was close, with slightly more interest in *Data en interoperabiliteit*, and slightly less interest in the *Roadmap* break-out session.

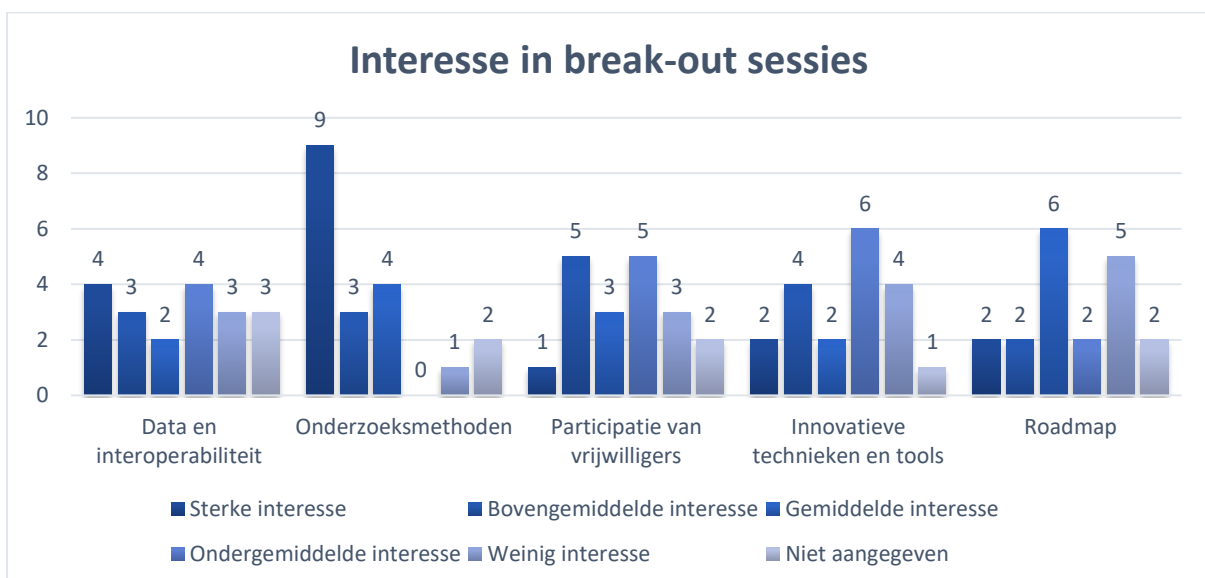


Figure 3 Level of interest in proposed break-out sessions

3. Stakeholder meeting - Van de Diepte naar de Oever

The Van de Diepte naar de Oever stakeholder meeting was held between 9:30 and 12:00 on 8th October 2020. Due to the existing restrictions for holding face to face meeting because of the COVID-19 pandemic, this session was organized online and using the Zoom platform.

Participants

39 participants from 26 organizations registered and participated in the stakeholder meeting on 8th of October. Table 1 provides an overview of the participants, organizations and roles.

Table 1 list of participants, organizations and roles

No.	Participant name	Organization	Role
1	Bert Bellert	Rijkswaterstaat	Organizer team
2	Bert Teunkens	Universiteit Antwerpen	Participant
3	Claar-els van Delft	St Coast Busters	Participant
4	Dirk Groot	Zwerfinator	Participant
5	Eline Langeveld	Student Universiteit Utrecht	Participant
6	Eric Copius Peereboom	Rijkswaterstaat	Participant
7	Frans Buschman	Deltares	Participant
8	Frida Miedema	Open Universiteit	Participant
9	Hannah van de Kerkhof	Plastic Soup Foundation	Participant
10	Imke Deibel	Havenbedrijf Rotterdam	Participant
12	Ivo Rodermans	Zwerfie Rotterdam	Participant
13	Jacintha Tjia	Noria Sustainable Innovators	Participant
14	Jannet Kamminga	HDSR	Participant
15	Jasper Mik	Rijkswaterstaat	Participant
16	Jim van Belzen	Scouts4Science	Participant
17	Joost Barendrecht	IVN en Schone Rivieren	Participant
18	Lars Verschuren...	Hogeschool Rotterdam	Participant
19	Lea Crijns	Rijkswaterstaat Zuid-Nederland	Participant
20	Li An Phoa	Drinkable Rivers	Participant
21	Liliane Geerling	Zeeland University of Applied Sciences	Organizer team
22	Liselotte Rambonnet	Leiden Universiteit	Participant
23	Louise-Anne Zaat	Rijkswaterstaat	Participant
24	Maarten Erich	By the Ocean we Unite	Participant
25	Michiel Wilhelm	Tauw	Participant
26	Mike Echtermeijer	Hogeschool Rotterdam	Participant
27	Mohammad Gharesifard	IHE Delft voor TU Delft WaterLab	Organizer team
28	Patrick Lie	The Great Bubble Barrier	Participant
29	Ramon Knoester	CLEAR RIVERS	Participant
30	Remco Pikaar	Tauw	Participant
31	Rinze de Vries	Noria	Participant
32	Ronald van der Stad	D66, Gemeente Lansingerland	Participant

No.	Participant name	Organization	Role
33	Sander de Jong	Hogeschool Rotterdam	Participant
34	Sandra de Vries	PULSAQUA voor TU Delft WaterLab	Organizer team
35	Sylvia Spierts	IVN Limburg / LIVES	Participant
36	Thijs Bosker	Leiden Universiteit	Participant
37	Tijmen den Oudendammer	Hogeschool Rotterdam	Organizer team
38	Vince van't Hoff	PULSAQUA voor TU Delft WaterLab	Organizer team
39	Winnie de Winter	Stichting De Noordzee	Participant

Agenda

Table 1 presents the agenda of the meeting. The agenda was shared beforehand (on 1st October 2020) with the registered participants.

Table 2 Agenda of the 'Van de Diepte naar de Oever' stakeholder meeting

9:30 uur	Inloop
10:00 uur	Start bijeenkomst en welkom
10:05 uur	Twee aan twee kennismaking
10:15 uur	Aanleiding en doel bijeenkomst
10:20 uur	Key-Note Pitch van Eric Copius Peereboom
10:25 uur	Break-Out sessie Ronde 1
	<i>Break-out kamer 1: Data en interoperabiliteit</i>
	<i>Break-out kamer 2: Onderzoek en meet methoden</i>
	<i>Break-out kamer 3: Participatie van vrijwilligers</i>
	<i>Break-out kamer 4: Innovatieve technieken en tools</i>
	<i>Break-out kamer 5: Roadmap</i>
11:00 uur	Korte pauze
11:10 uur	Break-Out sessie Ronde 2
11:35 uur	Plenaire terugkoppeling
11:50 uur	Poll
11:55 uur	Afsluiting en vervolg

Introduction and keynote speech

The name of the session 'Van de Diepte naar de Oever' was chosen because we believe in order to be able to organize a national plastic monitoring network, all initiatives and organizations need to step outside of their specialism, comfort zones, or 'island' (Van de Diepte), and come together to achieve a greater impact (naar de Oever). The session started with a welcome and introduction by the facilitator. Next, there was a tour de table and all participants had the chance to briefly introduce themselves, their affiliation and interest in plastic pollution monitoring and/or citizen science. The session continued by providing a brief background and introduction of the purpose of the meeting. Eric Copius Peereboom was the keynote speaker and his presentation was on the route to monitoring litter / macroplastics in rivers. Figure 4 presents a route to national and structural monitoring of litter/plastics. It

starts with stating a basic problem, i.e. despite the urgency of the topic and the increasing attention of (international) policy agenda there are no common policy frameworks, goals or standards for monitoring of plastic pollution at the national level. This calls for participation of all stakeholders involved and standardization of monitoring methodologies and producing data that is interoperable.

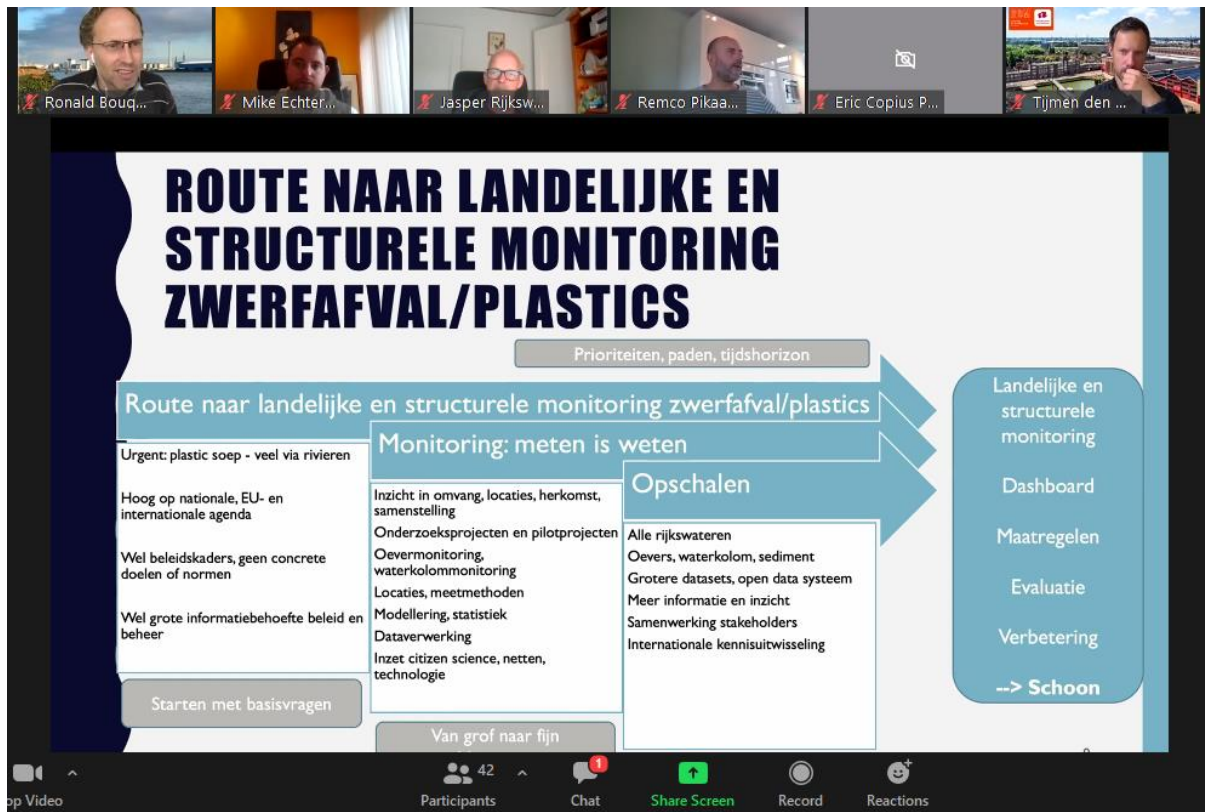


Figure 4 Screenshot of the keynote speech by Eric Copius Peereboom

Breakout sessions (Rounds 1 and 2)

Participants were directed to breakout rooms to engage in an interactive and productive dialogue on five pre-defined topics, namely (1) 'data and interoperability', (2) 'research and measurement methods', (3) 'participation of volunteers', (4) 'innovative techniques and tools', and (5) 'road map' (see Figure 4 for further details). Discussions in breakout rooms were organized in two parts, with a short break in between. The main aim of the first part was to discuss possible topics and content per breakout session and the second part was dedicated to come up with concrete actions per breakout group. Participants were assigned to the breakout sessions based on their previously indicated preferences. Participants could choose to attend the same breakout room in the two rounds, or switch to a different breakout for the second rounds.

1	Data en interoperabiliteit (Richt zich op discussies over data delen, data validatie, combineren van verschillende datavormen, opzetten van een landelijke database, datakarakteristieken en opslag, etc.)
2	Onderzoeksmethoden (Richt zich op discussies over gegevensverzameling (via citizen science, professionals, wetenschappers); wat wordt er gemeten (indicatoren, meetmethodieken)? etc.)
3	Participatie van vrijwilligers (Richt zich op motivaties voor participatie, het perspectief van vrijwilligers over de verschillende meetmethodieken, communicatie en informatie delen, en hoe breed kunnen vrijwilligers participeren in het monitoren, etc.)
4	Innovatieve technieken en tools (Richt zich op discussies over innovatieve meetmethoden zoals drones, AI, remote sensing, smartphone gebruik, etc.)
5	Roadmap (Welke impact willen we bereiken met een dergelijk monitoringsplan, hoe verzekeren we budget/continuïteit/mandaat, hoe gaan we hier komen, etc?)

Figure 5 Description of the breakout sessions

Given the size of the group, and based on participants' interests in the topic, the breakout sessions included 6-8 participants (Figure 6). A fixed moderator was assigned to each breakout room to help steer the conversation and ensuring interactive and lively discussions among the participants. In addition, an assistant was present in the session for capturing the discussions. The discussions and points raised by the participants was captured using MindMeister that allows for creating mind maps. This provided a visual representation of different points per topic and allowed for making hierarchies and connections to make the reach discussions easier to document and understand. The detailed results of the discussions in the breakout rooms are presented in Figures 7 to 12.

After the breakout sessions, the moderators or one of the participants form the five breakout rooms reported back the main points of discussion to the larger group.



Figure 6 Screenshot of the breakout room number 5 (Roadmap)

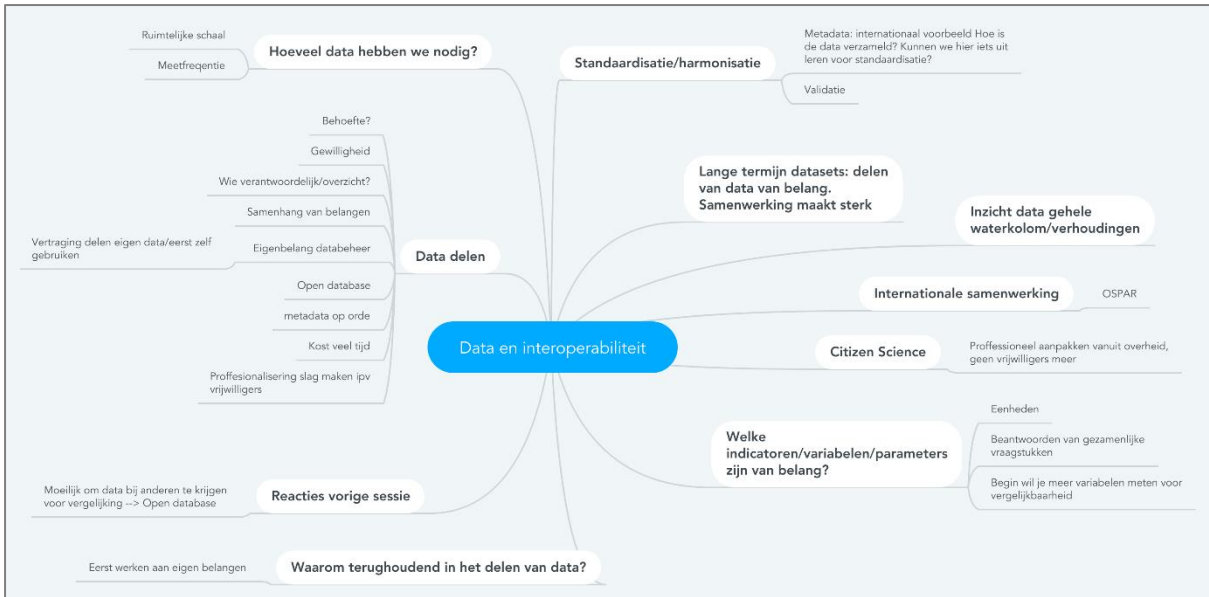


Figure 7 Mind map of the discussions in breakout number 1 – data and interoperability

For zooming into the details visit: <https://www.mindmeister.com/1646065009>

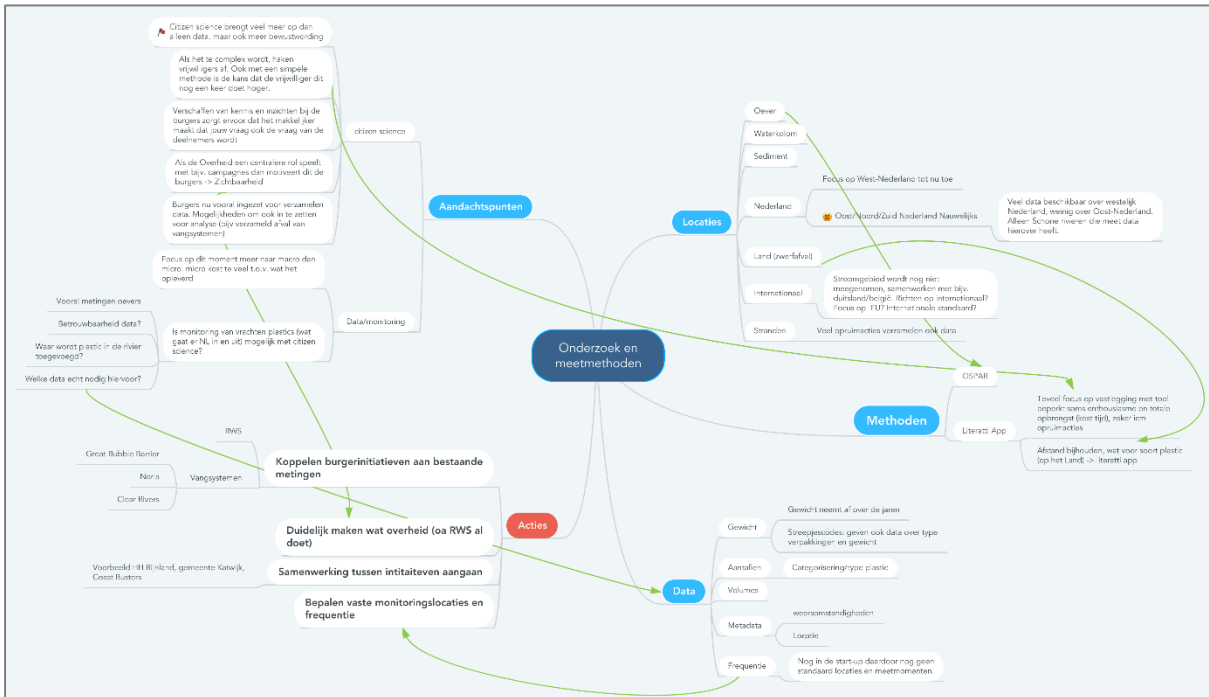


Figure 8 Mind map of the discussions in breakout number 2 – research and measurement methods

For zooming into the details visit: <https://www.mindmeister.com/1641396202?t=MsIVk7PiUx>

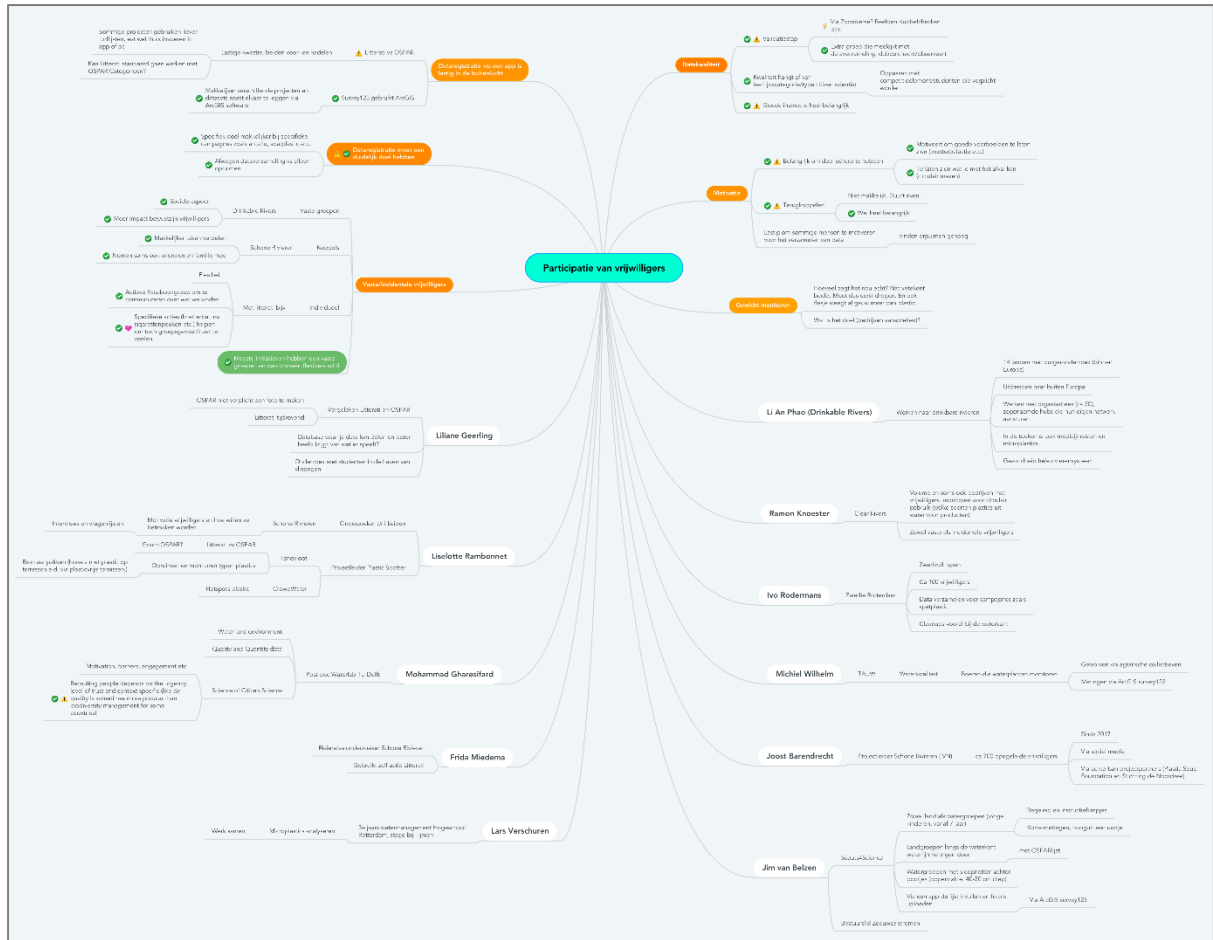


Figure 9 Mind map of the discussions in breakout number 3 – participation of volunteers

For zooming into the details visit: <https://www.mindmeister.com/1648380956?t=C57yuoPI1m>

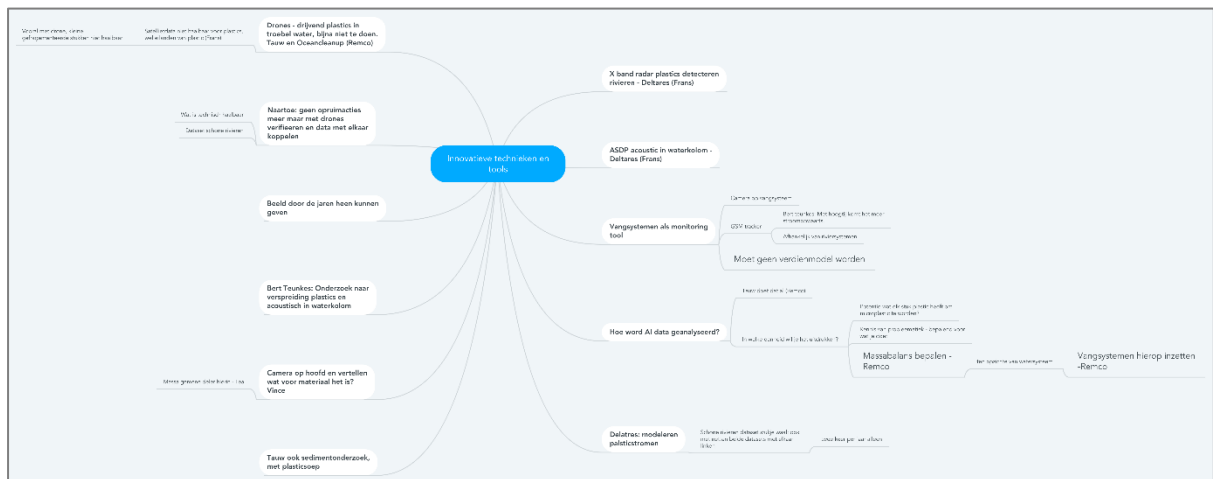


Figure 10 Mind map of the discussions in breakout number 4 (part 1) – innovative techniques and tools

For zooming into the details visit: <https://www.mindmeister.com/1647391989?t=D2t7EISRib>

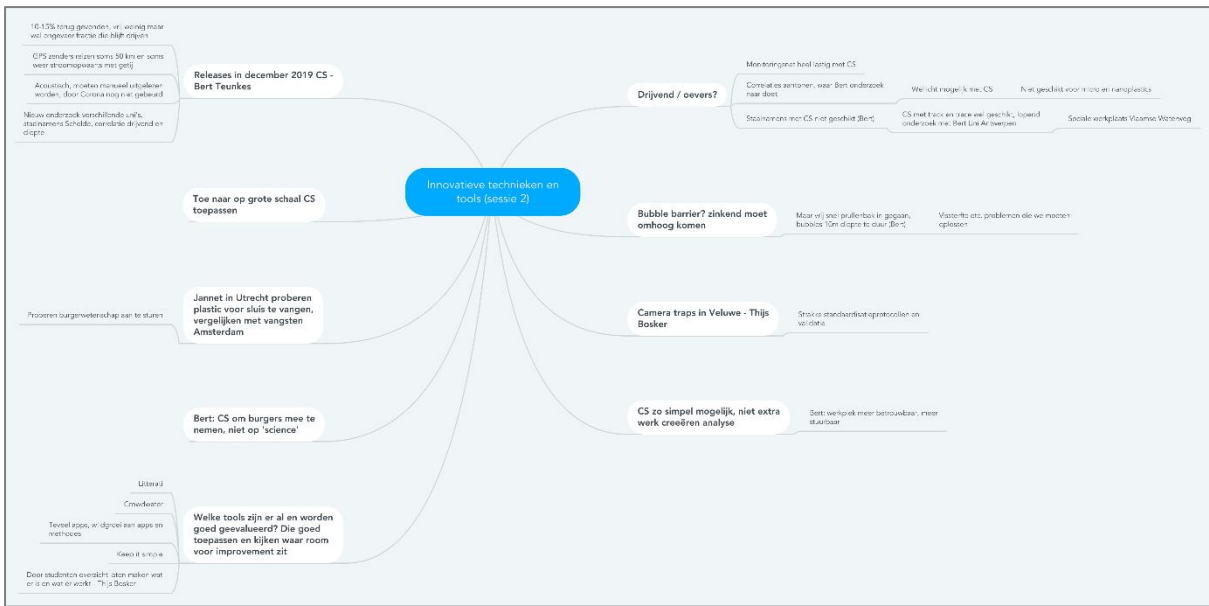


Figure 11 Mind map of the discussions in breakout number 4 (part 2) – innovative techniques and tools

For zooming into the details visit: <https://www.mindmeister.com/1647386802?t=WwXlwNaLsk>

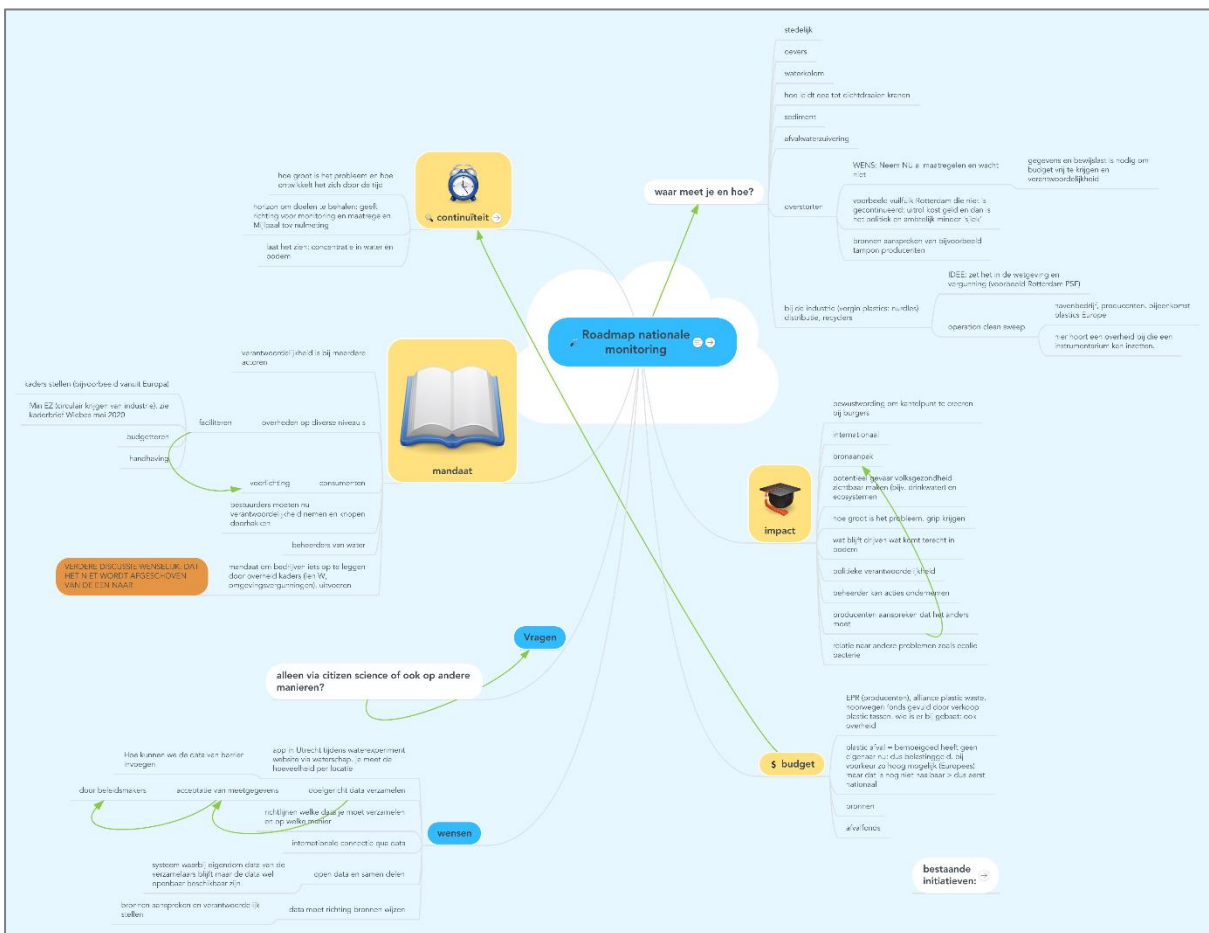


Figure 12 Mind map of the discussions in breakout number 5 – road map

For zooming into the details visit: <https://www.mindmeister.com/nl/1648366628>

Results of the poll

At the end of the session, a poll was shared to assess the level of interest of the participants for future involvements in this initiative. The results of the poll are presented in Figure 13. 76% of the participants indicated their interest to continue with specific themes or breakout groups. The rest of the participants (24%) chose to first contact the organizers to get more information about the next steps.

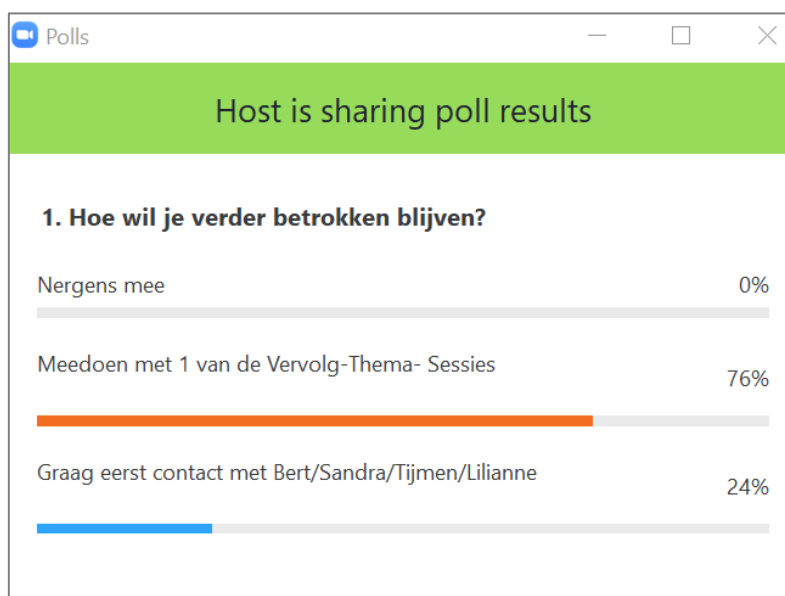


Figure 13 Results of the poll on preference for future involvement

4. Next steps

We shared a 'datumprikker' with the participants to find good dates for follow up meetings. The following dates and topics were chosen.

#	Onderwerp	Wanneer	Beschikbaar	Hoofdvraag om richting & doel te geven bijeenkomst
1	Participatie van vrijwilligers	di 3 nov, 14 - 16 uur	78% kan	Welke gemeenschappen/groepen zijn mogelijk te motiveren voor opschaling van huidige CS initiatieven, en op welke manier en waar zijn ze inzetbaar? - gelinkt aan Meetmethoden en Parameters
2	Meetmethoden en parameters	wo 18 nov, 10 - 12 uur	82% kan	Op welke manier kunnen we de huidige meetmethoden optimaliseren, tegelijkertijd uitkijkend naar een betere ruimtelijke en temporale spreiding in Nederland?
3	Data & interoperabiliteit	do 19 nov, 10 - 12 uur	77% kan	Wat moet er in een 'code of conduct' om data delen te vergemakkelijken zodat we kunnen onderzoeken hoe deze data bronnen kunnen combineren?
4	Roadmap	di 24 nov, 14 - 16 uur	82 % kan	Welke route gaan we nemen om de inzet van CS-plastic monitoring in Nederlandse stroomgebieden onderdeel te laten worden van nationale monitoring?
5	Tools voor meetmethoden	do 26 nov, 10 - 12 uur	84% kan	Aan welke tools is er behoefte om de meetmethoden te optimaliseren? - gelinkt aan vraag Meetmethoden en Parameters