

Trust arrives walking and departs riding

Participatory monitoring of water levels with worried citizens

1. Participation can be evaluated by evaluating intermediary outcomes

- Development of social capital:
 - interaction
 - network development
 - Trust
- Products from the process:
 - agreements,
 - end to a stalemate,
 - innovation,
 - institutional change,
 - shared knowledge and information

Participatory monitoring can enhance these intermediary outcomes.

Source: Carr, G., G. Blöschl, and D. P. Loucks (2012), Evaluating participation in water resource management: A review, Water Resour. Res., 48, W11401, doi:10.1029/2011WR011662.



"Kitchen table" meeting (left) and the jointly determining of the measuring location (right).

3. Participatory monitoring works only with good communication!

During the first year:

- the participatory network yielded **useful additional data**; participants measured **actively** and **correctly**.
- citizens and water managers discussed jointly the observed phenomena.
- the water manager **listened** and **communicated** more.
- the citizens showed **better understanding** of the advantages of flexible water level regime and expressed (much) **more trust** in the water manager.

During the second year:

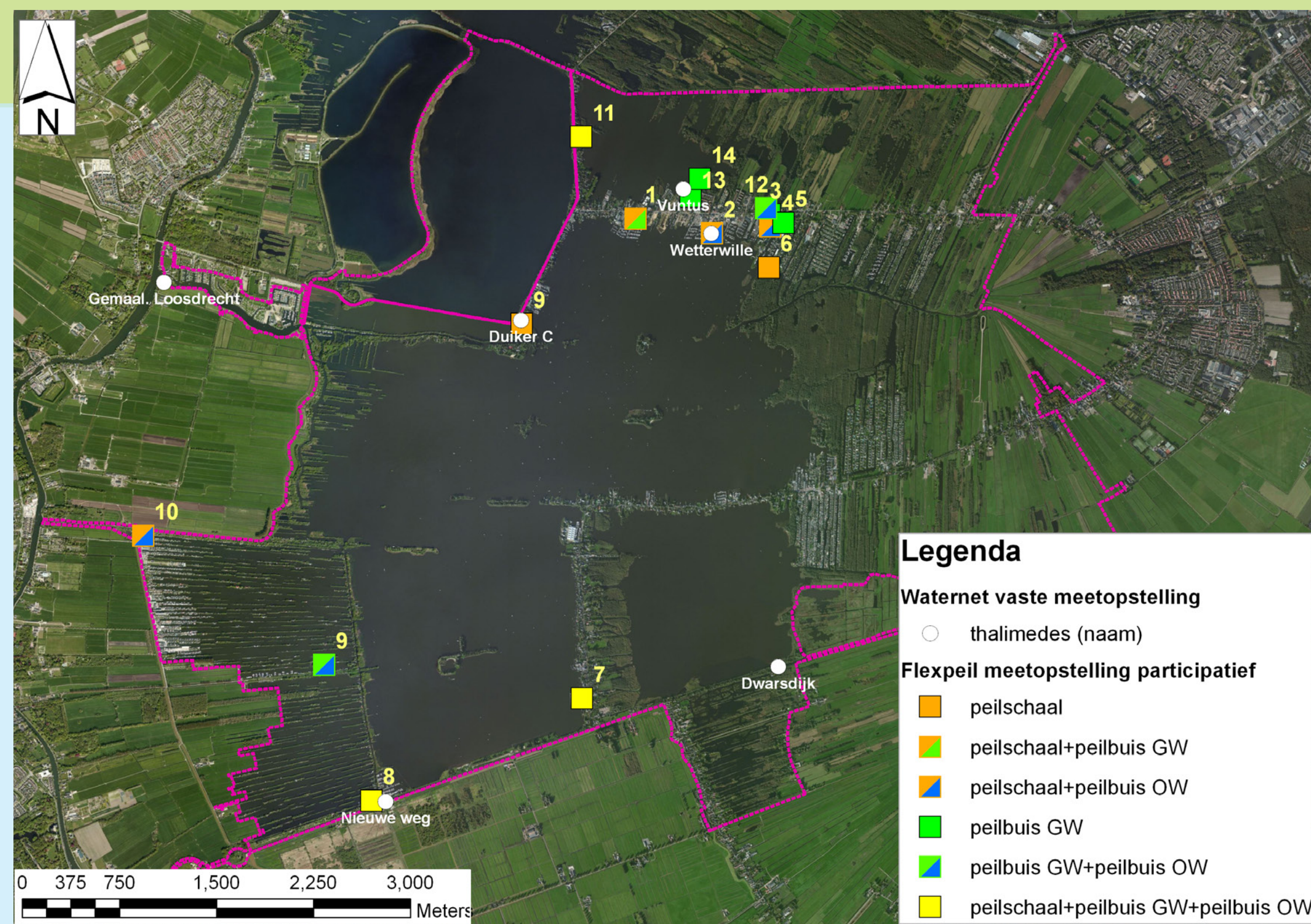
- the **interest** for the program **decreased** (only 35 % of measurements continued)
- **trust in the water manager significantly reduced**
- **Interviews** and a **discussion meeting** pointed at the following **causes** for this:
 - participants were satisfied with information gathered during first year
 - **reduced communication** between water manager and participants: "we don't hear from them!" (no discussion meetings)
 - **flaws** in the **practical implementation** of data gathering (e.g. text message rates not repaid)
 - participants felt that their **data was not needed and used** by water manager.
 - more weather extremes cause predefined water level limits to be exceeded (see graphs): "water board does not manage water level properly!"

Follow-up:

- Water manager contacts and informs participants during the preparations of next water management plan of the area.
- Measurements of participants can be evidence for objections to future decisions on the water level.

4. Successful participatory monitoring requires:

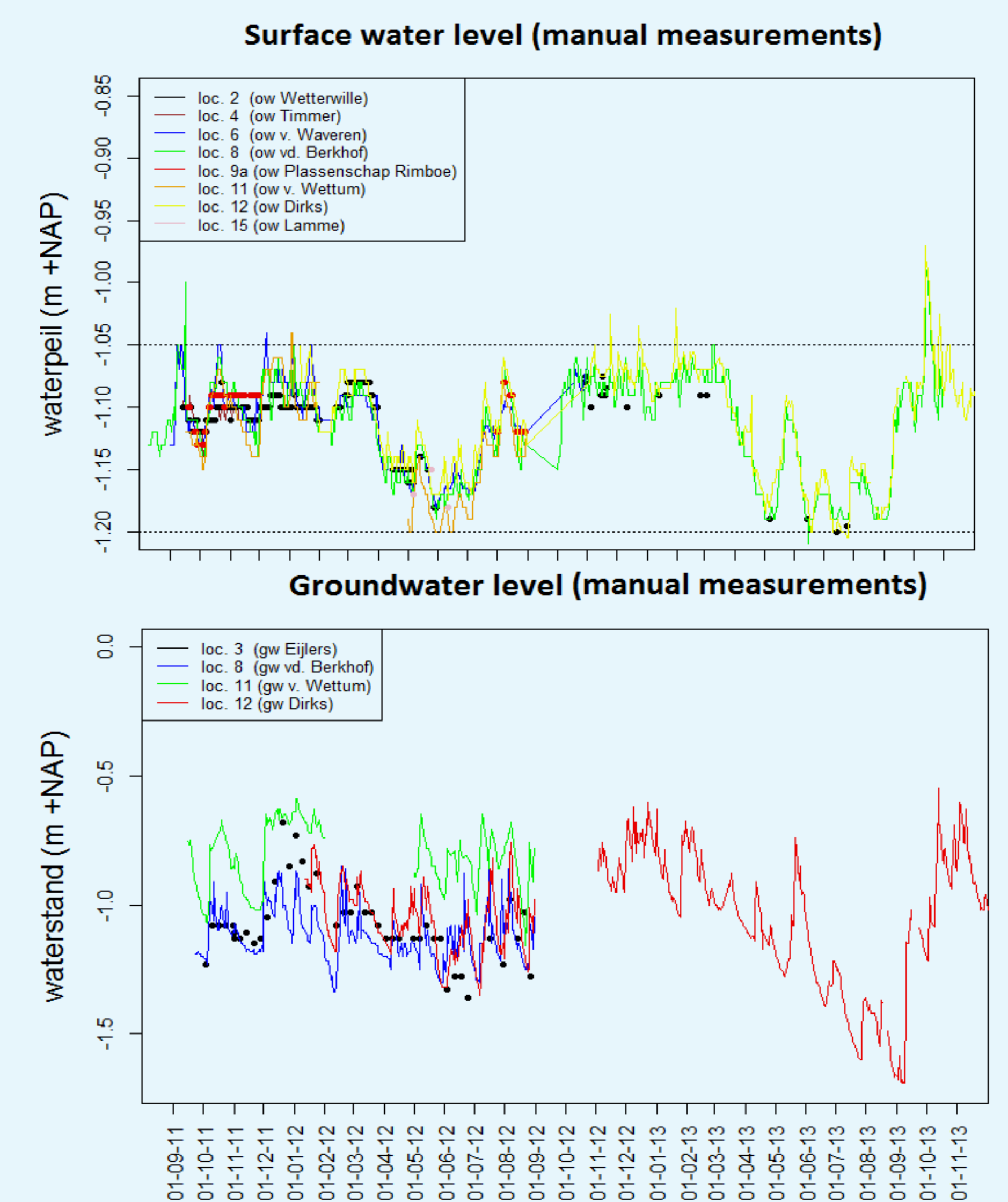
- Two-way process: both participants and authorities make an effort and profit.
- Monitored parameters are relevant and attainable for participants.
- Local knowledge of the system is made use of in design and analyses.
- Design of the monitoring network suits participants' needs and possibilities, and is consistent with the monitoring goals.
- Participants perceive that their observations are helpful for responsible authorities.
- Complementing data are distributed to participants to increase their understanding of the (water) system.



Area of the "Loosdrechtse Plassen" with the locations of the instruments. Part of the locations were cancelled in 2nd year of the program (white circles).

2. The start of the project: why and how monitor together?

- In the recreational area of Loosdrecht, the water board decided to apply **flexible water level management**. The water manager needed data on the **actual consequences** of the new water regime.
- The new water regime caused the **citizens to worry** for the wooden foundations of their houses and for possible limitations for water recreation: **dissatisfaction** and **lawsuits**.
- **Participatory monitoring program (2011-2012): kitchen table meetings, locations determined together, weekly measurements by 14 citizens, (3) meetings: mutually trusted data of surface water and groundwater levels collected: communication improved.**
- In the second year of program, the **water manager took over the lead**. Afterwards, an **evaluation was done by Deltares**.
- During the first year, 14 manual measurement series were collected. During the second year, this number was reduced to 5



Measuring the groundwater level (left) and a filled-in form (right).

- Easy access to authorities is enabled for clarification of observations and assistance in case of hindrances.
- Sufficient reliability of measurements made by participants is ensured.
- Monitoring equipment is robust.

Participatory monitoring requires dedicated, long term continuation and observance of the above points!!