Liquid Capabilities
Partecipatory Water Cultures in the History of the Low Countries
Tim Soens

Venice, 25 November 2022
Liquid Capabilities
Participatory Water Cultures in the history of the Low Countries.

Tim Soens
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From one lagoon to another
Dante Alighieri, Divina Commedia, Canto XV (c. 1308-1320)

- Quali Fiamminghi tra Guizzante e Bruggia; temendo ‘l fiotto che ‘nver’ lor s’avventa, fanno lo schermo perché ’l mar si fuggia

- Just as between Wissant and Bruges, the Flemings, in terror of the tide that floods toward them, have built a wall of dykes to daunt the sea
A new polder in 18th century Flanders
Source: Fond. Arenberg
Pieter Pourbus: environment of Bruges

- With dike and dike breaches in white

Storm Surges & Dike Breaches per century

- At least 1 major flood event per 20 year
Dykes = Work in Progress

Sachsenspiegel 1336

Profile Westfriese Omringdijk Enkhuizen (N-Holland)
A lot of work

- Up to 140,000 man-days per year in one (large) polder
1/3 Polder Democracies
Debating Water: the new sluice of Blankenberge

- Meente: General assembly of Landowners
- 16 April – 22 June: 5x
- 17000 hectares; 2000-landowners

- int openbare ende overluudt
- twelke der meentucht vele te vele dochte
- Twelke… alder meentucht onredelijke gheheescht dochte
- Twelk eeneghe zeiden dat van gheenre nood ne was te vermakene
- bevolen dat ment werken zoude

- Picture: 13th CE sluice with flap gate, near Rotterdam
Voting for the Water Board

- Oud Reijersland, Holland, c. 1459
- (GA Rotterdam)
In N France

- Wateringues Nord-Pas de Calais
In Belgium / Flanders

- Coastal & Scheldt Polders
In N Germany

- Deutscher Bund der verbandlichen Wasserwirtschaft (DBVW): 1850 associations
- (c. 500 in Schleswig-Holstein)
A North Sea Story
The origins of Water Boards.

- Until 13th century: part of village governance:

- Ex. Scultetus Hulst Zeeland Flanders 1234:
  - “Quotiens etiam ncesse fuerit, debemus ad dicum accedere et bannum facere ut omnes qui terras habent in officio de Hulst... faciant dicum suum tam bonum et tam validum quod scabini recognoscant quod terre... possint secure et salve ab omni periculo et dampno permanere”
The origins of Water Boards

- 1155 Ego Herimannus, Dei gracia Traiectensis episcopus
- parrochianis de Lobeke subvenerimus et ad conservationem terre eorum novo eos aquarum decursu, quem lingua eorum wetteringa vocant, juverimus....
- parrochianis de Lobeke in proprietatem cum omni justicia perpetuo jure concessimus, ita ut in hac prebitione nostra nemo eis aliquando aliquam injuriam faciat et nullus hos eorum aqueductus a terminis eorum usque flumen Islam preter conjuratos, quos heimrat vocant, obstruere aliquo vallo vel aliquo modo piscationis vel sportulis presumat.
Specific for the North Sea Area?

- 1156, Codigoro Po Valley
- Abbot of Pomposa imposed labour duties to construct dykes
- But control = a decanus and cavarzallani as representatives community
The origins of Water Boards

- 13th century > from inspection to administration
  - Ex. Romney Marsh in England:
    - General meeting landowners: *General Lathe (~ leet)*
    - ‘Holders of lands and tenements’ (1258)
    - Payment of *Scot*
      - e.g. Maintenance of the Great Wall of Appledore (1285-)
    - *Jurats*: from inspectors > maintenance
The Antithesis of Wittfogel’s hydraulic Despotism
Institutions for Collective Action?

- **Institutional arrangements** that are **formed by groups of people** in order to overcome certain **common problems** over an extended period of time by **setting certain rules** regarding **access to** the group (membership), **use** of the resources and services the group owns collectively, and **management of** these resources and services.

Kommunalismus?

- Gemeinde of independent farmers / craftsmen
- *Delegation von Unten*
## Ostrom’s Design Principles Institutions for Collective Action

<table>
<thead>
<tr>
<th>Design Principle</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Clearly defined boundaries</td>
<td>Membership involving rights to withdraw CPRs and physical boundaries of the resource(s) are clear</td>
</tr>
<tr>
<td>2. Congruence between appropriation and provision rules and local conditions</td>
<td>Rules are congruent with local conditions, including consideration of sustainable appropriation quotas</td>
</tr>
<tr>
<td>3. Collective choice arrangements</td>
<td>Individuals affected can participate in modifying operational rules</td>
</tr>
<tr>
<td>4. Monitoring</td>
<td>Monitors are accountable to the resource users</td>
</tr>
<tr>
<td>5. Graduated sanctions</td>
<td>Increasing sanctions apply for against repeat and/or serious rule violators</td>
</tr>
<tr>
<td>6. Conflict-resolution mechanisms</td>
<td>Ready access among resource users to low cost conflict resolution process</td>
</tr>
<tr>
<td>7. Recognition of rights to organize by external government authorities</td>
<td>Resource management institutions are recognised by government authorities</td>
</tr>
<tr>
<td>8. Nested enterprises</td>
<td>Governance activities are organized in multiple layers of nested enterprises for</td>
</tr>
</tbody>
</table>
The Polder Model = symbol for society as a whole

- The Low Countries’ model of Participatory Governance
  - Debate & Consensus
  - Economic growth
  - “These civic organisations [from citizens over crafts to polders]... forced local and regional elites to engage with popular concerns. They did so willingly, because they felt that the alternative, i.e. princely rule, was even more unattractive...”
The Polder Model = symbol for society as a whole

- Putnam’s Civil Society:
- Active civil society (participation in social life) produces generalized trust and economic growth
- Social patterns plainly traceable from early medieval Italy to today turn out to be decisive in explaining why on the verge of the twenty-first century some communities are better able than others to manage collective life and sustain effective institutions
Institutional Continuity But Social Change

- 15th-19th centuries: *increased hierarchisation*
- Very pronounced in Coastal Marshes:
  - **Ex:** size of Holdings 1328 versus 1569 near Furnes (Flanders)

<table>
<thead>
<tr>
<th>Parishes</th>
<th>Confiscations 1328 (Pirenne)</th>
<th>Holdings env. 1569 (Vandewalle)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Persons (N.)</td>
<td>Average landed property (ha)</td>
</tr>
<tr>
<td>Bewester Poort</td>
<td>30</td>
<td>2,11</td>
</tr>
<tr>
<td>Adinkerke</td>
<td>76</td>
<td>1,06</td>
</tr>
<tr>
<td>Loo</td>
<td>28</td>
<td>2,64</td>
</tr>
<tr>
<td>Sainte-Walburge-Coxyde</td>
<td>43</td>
<td>0,92</td>
</tr>
<tr>
<td>Eggewaertscapelle</td>
<td>17</td>
<td>5,32</td>
</tr>
<tr>
<td>Avecapelle</td>
<td>17</td>
<td>4,00</td>
</tr>
<tr>
<td>Bulscamp</td>
<td>31</td>
<td>0,44</td>
</tr>
<tr>
<td>Nieuicapelle</td>
<td>12</td>
<td>2,20</td>
</tr>
<tr>
<td>Beooster Poort-sHeer Wille</td>
<td>28</td>
<td>2,27</td>
</tr>
<tr>
<td>Ramscapelle</td>
<td>16</td>
<td>1,72</td>
</tr>
<tr>
<td>Zoutenaey</td>
<td>3</td>
<td>0,22</td>
</tr>
<tr>
<td>Caeskerke</td>
<td>28</td>
<td>2,46</td>
</tr>
<tr>
<td>Pervyse et Sainte-Catherine</td>
<td>52</td>
<td>2,33</td>
</tr>
<tr>
<td><strong>Average</strong></td>
<td><strong>29,15</strong></td>
<td><strong>2,13</strong></td>
</tr>
</tbody>
</table>
Institutional Continuity but Social Change

Medieval Peat Reclamation (C. De Bont)

Watergraafs of Diemermeer (Amsterdam)
Romney Marsh (S – UK)
Institutional Continuity, But Social Change

- Institutions persist as ‘clubs’ of large farmers
- (here: Geestmolen, Alkmaar c. 1900)
Institutional Continuity, But Social Change

- Clear hierarchisation in the Early Modern Period
- But... something lingers on:
  - participation of ‘ijder die slegts maar een tuijntje in eijgendom besit’
2/3 Urban Water Commons

(with R. Janssens)
Map by Christian s’Grooten c. 1570
Bonaventure Peeters, the Wharf, 17th CE
Antwerp 1570 – All Saints Flood
(Source: Zurich Zentralbibliothek, R. Moser)
Surface Water
(17th CE Van Caukercken)
Passion Play, Gillis Mostaert, c. 1550 (detail: water well)
Difference with Venetian-style Pozzo?
Three differences:
1. Technology
2. Management
3. Health
c. 100 Neighbourhood Water Wells

- ~demography
- (squares = most densely populated zones)
Neighbourhood Wells

- By Quinten Matsijs c. 1490
- (originally in front of City Hall)
- Part of Urban Identity
Water Wells

Wijkputten of gemeyne putteborren
(source: W. Van Craen enbroeck)

! Modern Piped Water = 1881!
First, that all fire masters will supervise that in each quarter two well masters are ordained, who for the year will supervise the communal wells in their quarter, in order that these wells are maintained in a good and precious condition with clean water, allowing the community to use them on a daily basis and to extinguish the flames in times fire.
Origins?

- Medieval Brussels: patrician families (identity markers)
- 15th century > 21 “gemeyne putteborren”
- Control of ‘wijkmeester’
Well masters 1701

- 2 per quarter
- Originate in the ‘middle classes’

Proessions of well masters in 1701 (categories)

<table>
<thead>
<tr>
<th>Profession</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baker and pastry baker</td>
<td>25</td>
</tr>
<tr>
<td>Barber</td>
<td>5</td>
</tr>
<tr>
<td>Book retailer</td>
<td>2</td>
</tr>
<tr>
<td>Brewer or distiller</td>
<td>4</td>
</tr>
<tr>
<td>Butcher or food retail</td>
<td>2</td>
</tr>
<tr>
<td>Carpenter or builder</td>
<td>8</td>
</tr>
<tr>
<td>Clothing retail and manufacturing</td>
<td>7</td>
</tr>
<tr>
<td>Dyer</td>
<td>3</td>
</tr>
<tr>
<td>Glass worker</td>
<td>3</td>
</tr>
<tr>
<td>Liberal profession</td>
<td>2</td>
</tr>
<tr>
<td>Merchant</td>
<td>5</td>
</tr>
<tr>
<td>Metal worker or retail</td>
<td>13</td>
</tr>
<tr>
<td>Tavern keeper</td>
<td>5</td>
</tr>
<tr>
<td>Wood worker</td>
<td>5</td>
</tr>
<tr>
<td>Other trades</td>
<td>12</td>
</tr>
<tr>
<td>No profession listed</td>
<td>71</td>
</tr>
</tbody>
</table>

Source: R. Janssens (forthcoming)
Neighbourhood Well as ‘right’

- (1632) wijkput Boerenkwartier “Desen aengemerckt, Ende dat de supplianten quartier mede deel is vande stadt, Dat oick hen niet den behoorden geweygert te syn tgene de mede borgers der gansche stadt deur syn genietende, Soo bidden de supplianten dat myne heeren gelieven wil in faveur ende goede policie ter syden deser te consenteren dat op een vande bequaemste plaetsen aldaer int publicq oft gemeyn sal worden gemaect ende gestelt eenen wyckput tot gelycken oncost vande supplianten ende consoorten daerontrent gehuyst ende geerft synde, gelyck in dusdanige gevallen elders altyt voor desen is gepractiseert sonder differentie van gewillige oft ongewillige dit doende r.”

- => ‘Common Wealth’ / Bien Commun.
Organisation: well-and-fire-tax

- Per neighbourhood
- Organised by the ‘putmeesters’ of each neighbourhood / gable width
- Exceptions for those with private water supply (increasingly in 18th CE)
Health?
Transition to pumps

For better quality:
“... hoe dat dagelycx by dage als by nachte in seide wyckput, worden geworpen doode honden catten ende andere onreynicheden, daernochtans gemeynlyck de goede lieden daerontrent woonende dwater syn halende ende hunne spyse daermede moeten bereyden ...
Health? Association with plague is not very strong

- EX. 1571: City imposes 100 £ fine on anyone who spreads plague by spreading filth (in water wells, in streets, on houses etc.)

- ‘schrobbers oft schrobsters oft andere personen, die hun vervoorderen vuyligheden te worpen in de borneputten achter straeten, oft te streyken aen de deuren, poorten, borneput, ketenen, lenen, banken en elders aen de huysen der goede lieden, om daermede de besmettelijke siekte van de peste te verbreyden en voort te draegen, en de gansche stad daerdoor te bederven; niemand hem te bemoeyen met schrobben; de besmette huysen te reynigen
## Alternatives for the wells

<table>
<thead>
<tr>
<th></th>
<th>Total Deeds</th>
<th>Groundwater well (%)</th>
<th>Rainwater &quot;bakken&quot; ('cisterns') (%)</th>
<th>Ground and/or rainwater pump (%)</th>
<th>Piped water (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1560s</td>
<td>485</td>
<td>26,2</td>
<td>16,5</td>
<td>1,9</td>
<td>0,2</td>
</tr>
<tr>
<td>1610s</td>
<td>276</td>
<td>71,4</td>
<td>56,2</td>
<td>25,4</td>
<td>4,0</td>
</tr>
<tr>
<td>1830s</td>
<td>304</td>
<td>11,2</td>
<td>24,0</td>
<td>28,9</td>
<td>0,0</td>
</tr>
<tr>
<td>1890s</td>
<td>523</td>
<td>22,8</td>
<td>12,0</td>
<td>24,5</td>
<td>5,0</td>
</tr>
</tbody>
</table>
Other water supply systems

- Shared, semi-public, wells & pumps
  - *Korte Sint-Annastraat c. 1900*
Other water supply systems

Sint-Juliaans-Hospitaal

Zwanegang

Copyright Stadsarchief Antwerpen (Belgie)
Zet: http://stadarchief.antwerpen.be
Antwerp 1553-54: Van Schoonbeke & his water company

Driven by Horse Power

Noria from the underground reservoir

Supplying breweries
16th CE Waterhouse

- Blaming ‘insufficient’ water quality
- Forcing brewers to relocate to new brewing district
- Step to commodification
The 16th CE Waterhouse (W. Van Craenenbroeck)
Cisterns: see Amsterdam

- Amsterdam, Coping With Drought (P. Van Dam)
  - Ex: Burgerweeshuis Amsterdam, 1692:
  - 14 reservoirs = 3600 ton = 396000 liters
Cisterns

- Amsterdam, Coping With Drought
  - Public ones from the 18th-19th century
Cisterns

- Amsterdam, Coping With Drought
  - Public & Institutional ones: 125 in 1755 (= c. 2mio litres)
    - Part of which was sold (2 to 4 duiten per bucket (against 14 for 1 kilo rye bread)).
  - Private ones, from 500 to over 10,000 litres (here: Nieuwezijds Voorburgwal 282, 3*3,6*3 (= c. 32400 liter)
Water Ships

- Water ship brings Vecht water to Amsterdam (1758)
- Source: Van Tielhof, 2022)
Water ships

- Source: Van Roosbroeck 2019
3/3 Liquid Capabilities
Two examples of participatory water cultures

- Those who benefit from water infrastructures, participate in their management.

- Participatory water cultures provided *Hydraulic or Liquid Capabilities?*
Capabilities

- **conditions or states of enablement that make it possible for people to achieve things**
- Not just ‘equal opportunities’ (Rawls), but also **minimal outcome**:
- **Martha Nussbaum: ten core capabilities**
  - **Bodily health**: able to enjoy bodily health, including adequate nourishment and capacity for reproduction
  - **Other species**: being able to live with concern for and in relation to animals, plants and the world of nature
  - **Environmental control**: being able to engage with the processes and choices that affect our political and material lives
Heavy flooding in Pakistan
Extent of flooding based on satellite imaging

Total flooded area
55,000 km²

Extent of flooding
Data unavailable

Source: UNOSAT data collected between August 3-23, 2022.
Belgium/Germany Summer 2021
Limited Liquid Capabilities
Did participatory water cultures of the past do better?

- Elisabeth Altarpiece
  Remembering the 1421 flood
  (DORDREcHT c. 1500)
WIKIPEDIA'S LIST OF DEADLY FLOODS

<table>
<thead>
<tr>
<th></th>
<th>Casualties</th>
<th>Event</th>
<th>Location</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>100,000+</td>
<td>St. Felix's Flood, storm surge</td>
<td>Netherlands</td>
<td>1530</td>
</tr>
<tr>
<td>9</td>
<td>50,000–80,000</td>
<td>St. Lucia's flood, storm surge</td>
<td>Netherlands</td>
<td>1287</td>
</tr>
<tr>
<td>10</td>
<td>60,000</td>
<td>North Sea flood, storm surge</td>
<td>Netherlands</td>
<td>1212</td>
</tr>
<tr>
<td>12</td>
<td>30,000</td>
<td>St. Marcellus flood, storm surge</td>
<td>Netherlands</td>
<td>1219</td>
</tr>
<tr>
<td>17</td>
<td>15,000</td>
<td>All Saints' Flood, storm surge</td>
<td>Netherlands</td>
<td>1570</td>
</tr>
<tr>
<td>24</td>
<td>several thousands</td>
<td>North Sea flood, storm surge</td>
<td>Netherlands</td>
<td>1014</td>
</tr>
<tr>
<td>25</td>
<td>several thousands</td>
<td>St. Juliana flood, storm surge</td>
<td>Netherlands</td>
<td>1164</td>
</tr>
<tr>
<td>26</td>
<td>several thousands</td>
<td>St. Agatha flood, storm surge</td>
<td>Netherlands</td>
<td>1288</td>
</tr>
<tr>
<td>27</td>
<td>several thousands</td>
<td>St. Clement flood, storm surge</td>
<td>Netherlands</td>
<td>1334</td>
</tr>
<tr>
<td>29</td>
<td>several thousands</td>
<td>All Saints flood, storm surge</td>
<td>Netherlands</td>
<td>1532</td>
</tr>
<tr>
<td>30</td>
<td>several thousands</td>
<td>North Sea flood, storm surge</td>
<td>Netherlands</td>
<td>1703</td>
</tr>
<tr>
<td>48</td>
<td>2,400</td>
<td>North Sea flood, storm surge</td>
<td>Netherlands</td>
<td>838</td>
</tr>
<tr>
<td>66</td>
<td>1,558</td>
<td>St. Martin flood, storm surge</td>
<td>Netherlands</td>
<td>1686</td>
</tr>
<tr>
<td>84</td>
<td>800</td>
<td>North Sea flood, storm surge</td>
<td>Netherlands</td>
<td>1825</td>
</tr>
<tr>
<td>20</td>
<td>10,000–100,000</td>
<td>St. Elizabeth flood, storm surge</td>
<td>Netherlands, Belgium</td>
<td>1421</td>
</tr>
<tr>
<td>15</td>
<td>25,000–40,000</td>
<td>St. Marcellus flood / Grote Mandrenlood, storm tide</td>
<td>Netherlands, Germany, Denmark</td>
<td>1362</td>
</tr>
<tr>
<td>19</td>
<td>14,000</td>
<td>Christmas flood, storm surge</td>
<td>Netherlands, Germany, Denmark</td>
<td>171733</td>
</tr>
<tr>
<td>52</td>
<td>2,142</td>
<td>North Sea flood of 1953, storm surge</td>
<td>Netherlands, United Kingdom, Belgium</td>
<td>1953</td>
</tr>
</tbody>
</table>

But... only from late 16th CE deadly flood disasters
Deadly Flood Disasters in the Low Countries
(Source: Buisman)

<table>
<thead>
<tr>
<th>Year</th>
<th>1570</th>
<th>1717</th>
<th>1686</th>
<th>1953</th>
<th>1825</th>
<th>1682</th>
</tr>
</thead>
<tbody>
<tr>
<td>Victims</td>
<td>6,000 ??</td>
<td>2,426</td>
<td>c. 1,900</td>
<td>1,836</td>
<td>c. 380</td>
<td>&lt; 100</td>
</tr>
</tbody>
</table>
Agency: relocating settlements
(here: Ijzendijke, Flanders 1404 > 1440)
Agency: relocating Settlements

- Ostend, Belgium: 2x relocated in the 14th century
But: participatory models discredited

- Example 1 Ossenisse (Flanders) 1288-1292
  - 1288: big flood and dike breach
  - Count of Flanders: ‘terras quasdam ad nos ob defectum dicationis secundum legem patrie devolutas’
  - 1289-: granted to Cistercian Abbey Our Lady of the Dunes
  - Expropriation of 135 peasants (c. 500 ha), *not capable of reembankment*
But: participatory models discredited

- Ex. 2, Frisia 1570:
  - Habsburg governor *Caspar de Robles*: “Take your privileges and put them on the dike. If they can protect the land from the sea, you can keep them. If not, you will pay”
Water wells: 
*same erosion of capabilities*
16th-17th CE: also in rich neighborhoods
1830-50: rich houses ‘opt out’
Water wells: 19th century erosion

- “The city architect, who has been consulted by the board of mayor and aldermen, expressed the opinion that the building project would be an embellishment for the Marché aux Oeufs, since the public road would be cleared of an ugly corner; [...] Your commission believes that [the] neighbours have no property rights on this pump. [...] Even if the general utility of the pump would be demonstrated; it could be examined whether utility should not be sacrificed at times for the pleasant; [...] Furthermore we can be positive that the utility that results from the current state of affairs for the 2 neighbours, will be counterbalanced by the pleasantness that will result for the entire neighbourhood.”
Enter the Cholera

- Rich Neighbourhoods: opt out
- **Cholera 1866:**
  - 2961 deaths (/117000)
  - *perceived* as limited to
  - working class neighbourhoods
  - filthy open water
  - Neighbourhood wells
Van Beveren: cholera victims of 1866
Hypothesis: as long as people are capable of organizing their water => no major disasters
Participatory water cultures > Liquid Capabilities?

- Participatory water cultures provided *Hydraulic or Liquid Capabilities*?
  - Not always
  - Provided they are socially inclusive
  - Provided they are tolerated by the state / outside actors