



# Food Environment as a Spatial Measure

Our journey in developing local food policy measures in Amsterdam

Dr Coosje Dijkstra  
Dr Wilma Waterlander

Public Healthy Dynamics Lab  
Department of Public & Occupational Health

# Tussen mens en ruimte

De (on)gezonde voedselomgeving  
als omgevingswaarde

In samenwerking met de City Deal  
Gezonde en Duurzame Voedselomgeving

2023

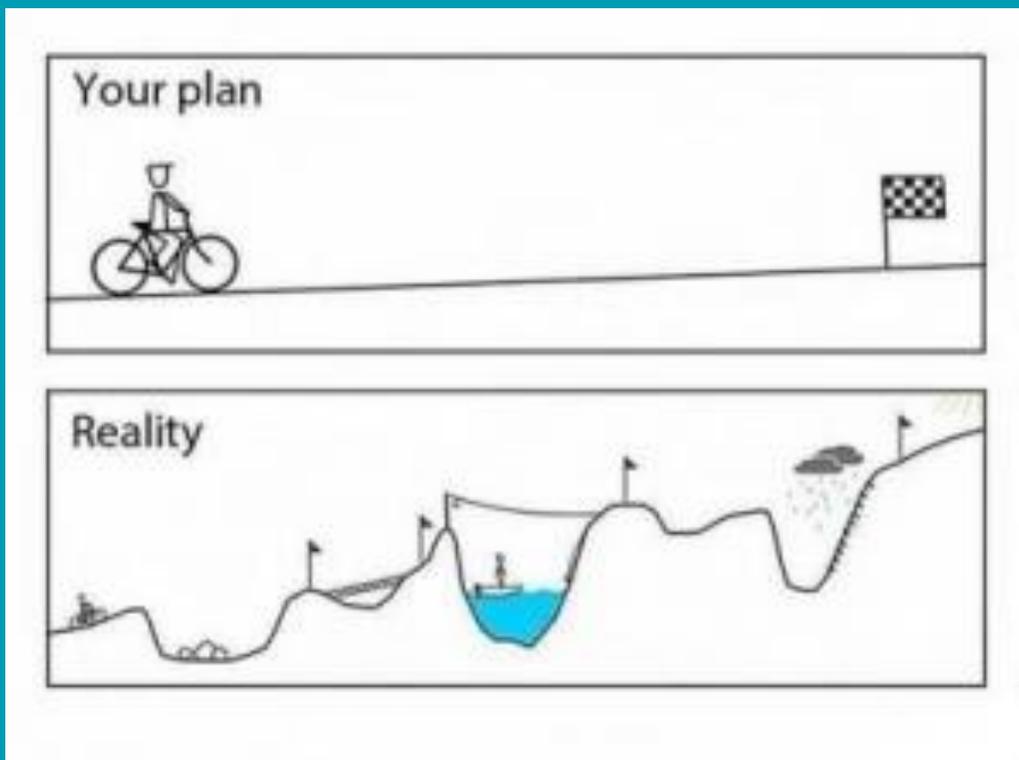




# en ruimte

De (on)gezonde voedselomgeving  
als omgevingswaarde

In samenwerking met de City Deal  
Gezonde en Duurzame Voedselomgeving





# Obesogenic Environment



Preventive Medicine  
Volume 29, Issue 6, December 1999, Pages 563-570



Regular Article

## Dissecting Obesogenic Environments: The Development and Application of a Framework for Identifying and Prioritizing Environmental Interventions for Obesity ☆

Boyd Swinburn M.D., FRACP<sup>a b 2</sup>, Garry Egger Ph.D., M.P.H.<sup>c b</sup>, Fezeela Raza M.A.<sup>a b</sup>

- Physical
- Economic
- Political
- Socio-cultural





# Obesogenic Environment



Review | [Open Access](#) |

## Monitoring the availability of healthy and unhealthy foods and non-alcoholic beverages in community and consumer retail food environments globally

[C. Ni Mhurchu](#) ✉, [S. Vandevijvere](#), [W. Waterlander](#), [L. E. Thornton](#), [B. Kelly](#), [A. J. Cameron](#), [W. Snowden](#), [B. Swinburn](#), [INFORMAS](#)

First published: 17 September 2013 | <https://doi.org/10.1111/obr.12080> |

[VIEW METRICS](#)

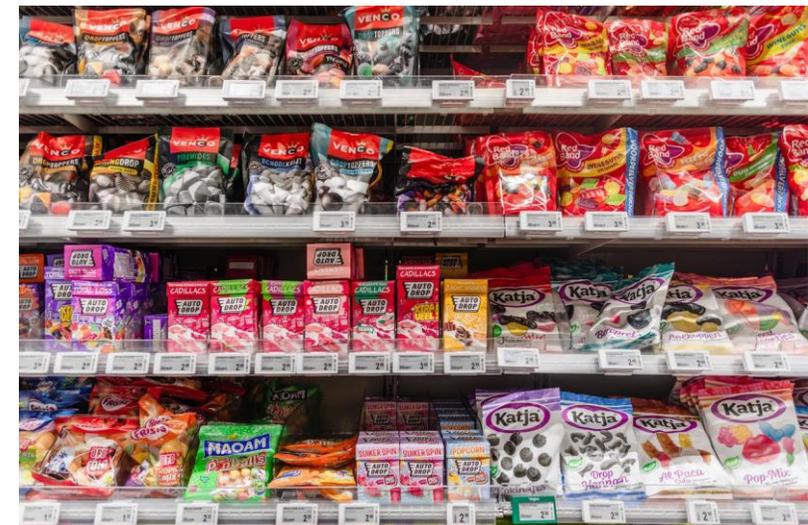


References

## Community retail environment



## Consumer retail environment



# Amsterdam junk food paradise

- Unhealthy is the norm
- 1 € education = €2000 food marketing
- 5500 food outlets in the city
- 80% food promotions = unhealthy
- Unhealthy food is relatively cheap





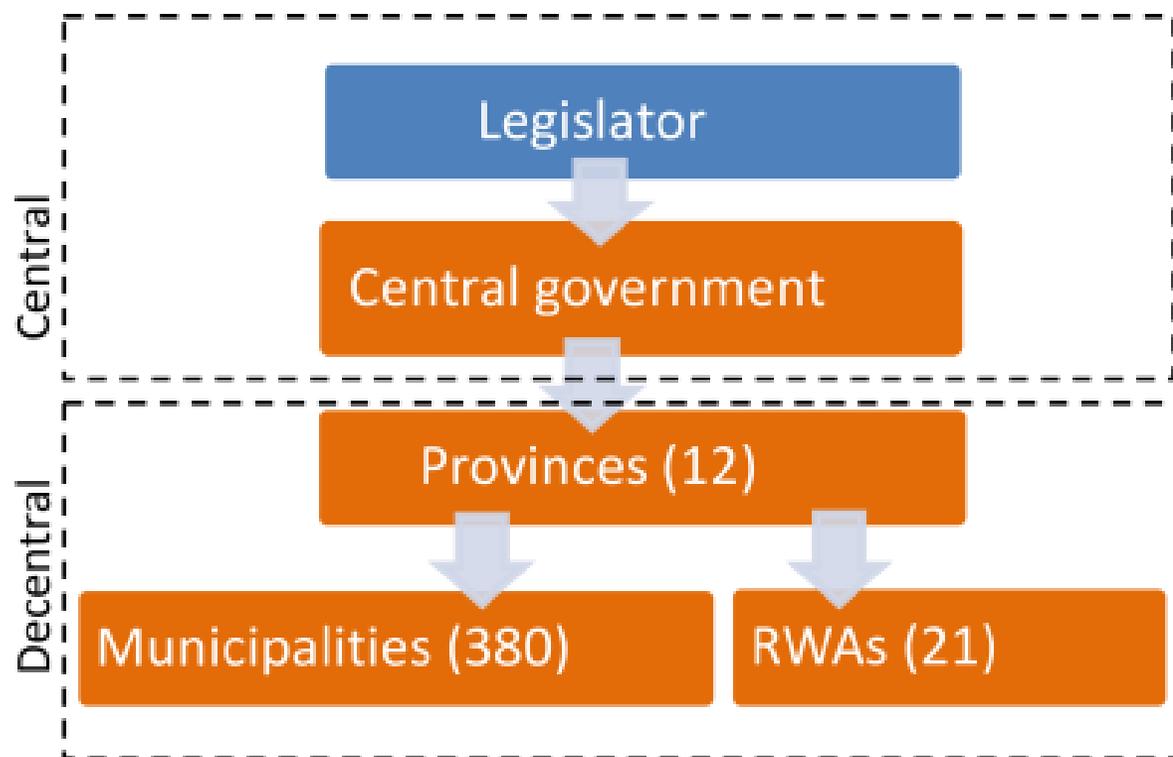
Is food choice  
(individual)  
consumer  
behaviour?

Or .. ?



# 342 municipalities

Gemeenten 2026



**Figure 2.** Constitutional organisation of the government in the Netherlands.



# Legal leverage for municipalities

## First report in 2020:

1. Municipalities and the national government are obliged to protect citizens from health harm resulting from unhealthy food environments (see also District Court of The Hague, 2022).
2. Municipal policy instruments remain too limited as long as the food environment cannot be measured and is not recognized as an ‘environmental factor’.
3. Municipalities and central government must act jointly.

 UNIVERSITEIT VAN AMSTERDAM

**Juridisch instrumentarium voor een  
gezonde voedselomgeving in de stad**

**Hannah van Kolschooten  
Richard Neerhof  
Anita Nijboer  
Anniek de Ruijter  
Marjolein Visser**



## Actions 2020:

1. Aldermen write a joint letter to the State Secretary
2. The State Secretary writes to Parliament on 4 June 2021:

“In het belang van de volksgezondheid is het wenselijk om mogelijk te maken dat gemeenten, wanneer ruimtelijke argumenten geen grondslag bieden, vanuit een gezondheidsmotief (omgevingsrechtelijke) instrumenten kunnen inzetten om aanbieders van ongezond voedsel te weren (bijvoorbeeld rondom de schoolomgeving).

Dit zou kunnen door gemeenten bij wet de bevoegdheid te geven om in een omgevingsplan regels vast te stellen met betrekking tot de vestiging van aanbieders van ongezond voedsel. Daartoe kan bijvoorbeeld in de Omgevingswet zelf, of in aanvulling daarop, in de Wet publieke gezondheid of een nieuw vast te stellen wet in formele zin, een grondslag worden gecreëerd. “



# Individual vs Spatial



To make it spatial:

- We have to be able to measure it: valid and specific
- But also feasible

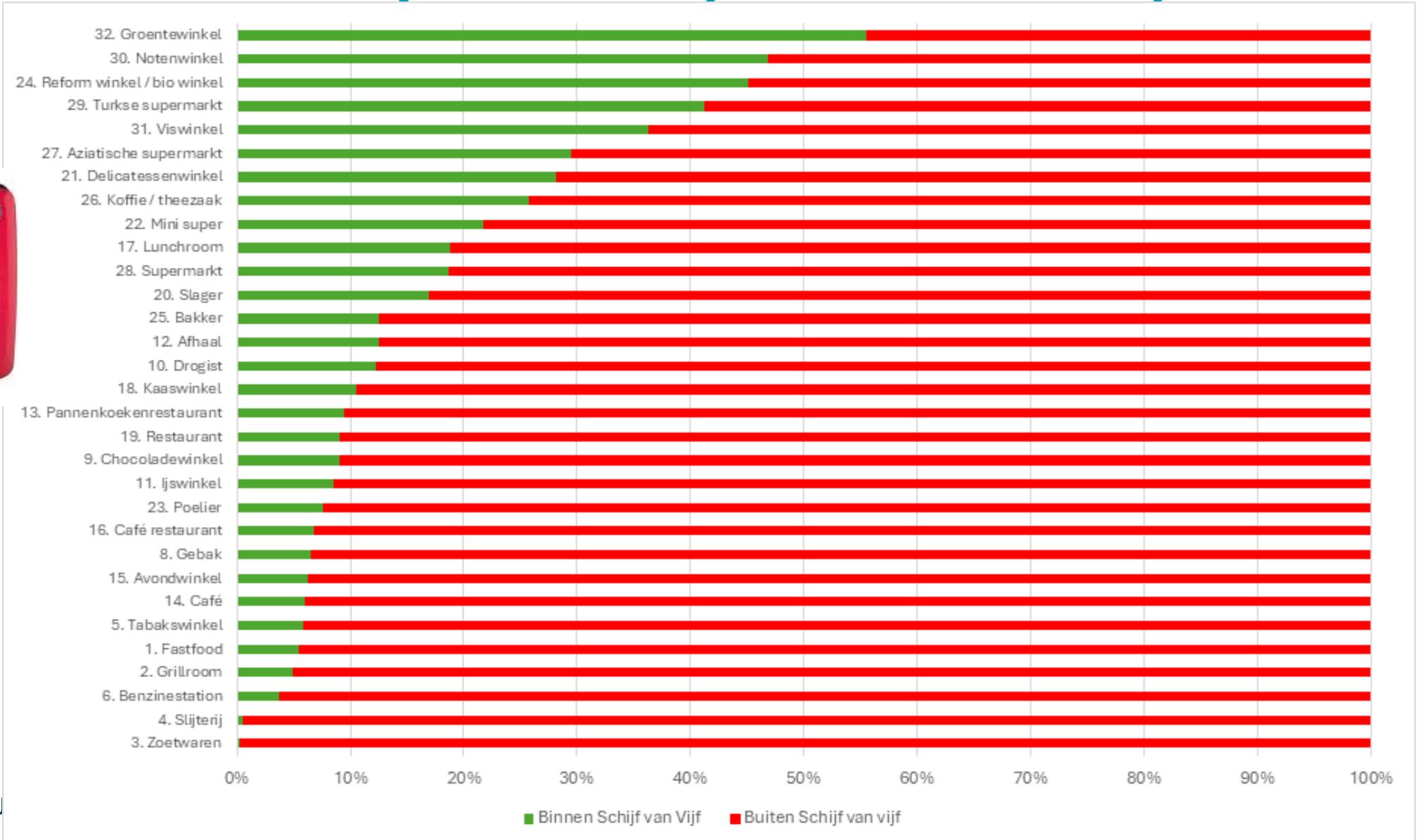


# 31 categories

- Based on Locatus Data
- Score based 50% on expert Delphi Study
- Score based 50% on physical measurements

Categorie	Hybrid_50_50
Fastfood	-4.5
Grillroom	-4.5
Zoetwaren	-4.8
Slijterij	-4.8
Tabakswinkel	-4.3
Benzinestation	-4.4
Gebak	-4.1
Chocoladewinkel	-3.9
Drogist	-3.4
IJswinkel	-3.7
Afhaal	-3.2
Pannenkoekenrestaurant	-3.3
Café	-3.1
Avondwinkel	-3.0
Café restaurant	-2.9
Lunchroom	-1.6
Kaaswinkel	-2.2
Restaurant	-2.2
Slager	-1.2
Delicatessenwinkel	0.1
Mini super	-0.4
Poelier	-1.5
Reform/bio winkel	2.1
Bakker	-0.8
Koffie/theezaak	0.5
Aziatische supermarkt	0.9
Supermarkt	0.1
Turkse supermarkt	2.2
Notenwinkel	2.8
Viswinkel	2.2
Groentewinkel	4.9

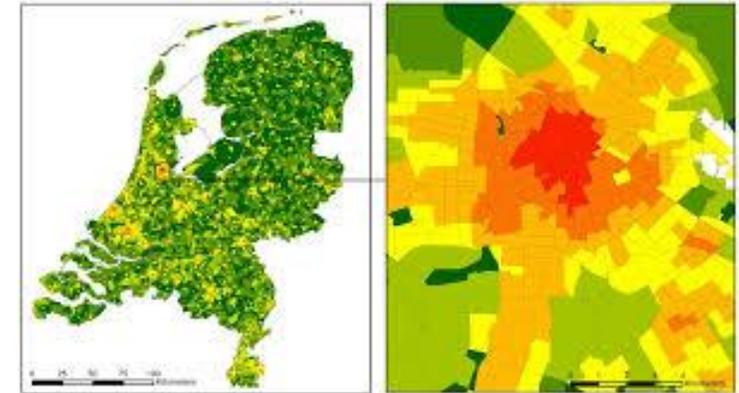
# Validation: 83.253 products, 325 outlets, in 4 cities





# How to measure the total environment?

- Sum of the scores. Where 0 = neutral environment.
  - Then one street ended up with a -77.
  - Problem: the larger the zone, the lower the score.
- Alternative: Percentage
  - But then: 2 healthy and 2 unhealthy outlets = 50 healthy and 50 unhealthy outlets

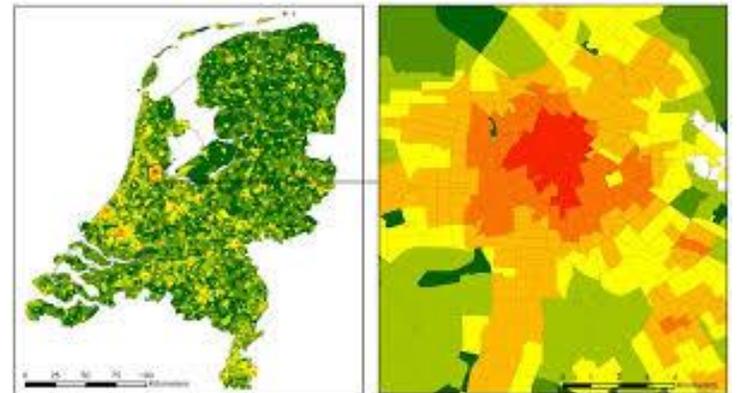


→ Conclusion: we want to factor distance and density



# New Food Environment Score

- Valid and specific measure for the healthiness of a certain area/zone
- Is easy to interpret for policy/regulation
- A -1.2 in zone A is the same as a -1.2 in zone B
- Local municipalities can create the maps
- And the National Institute for Public Health & Environment, can do the long-term monitoring

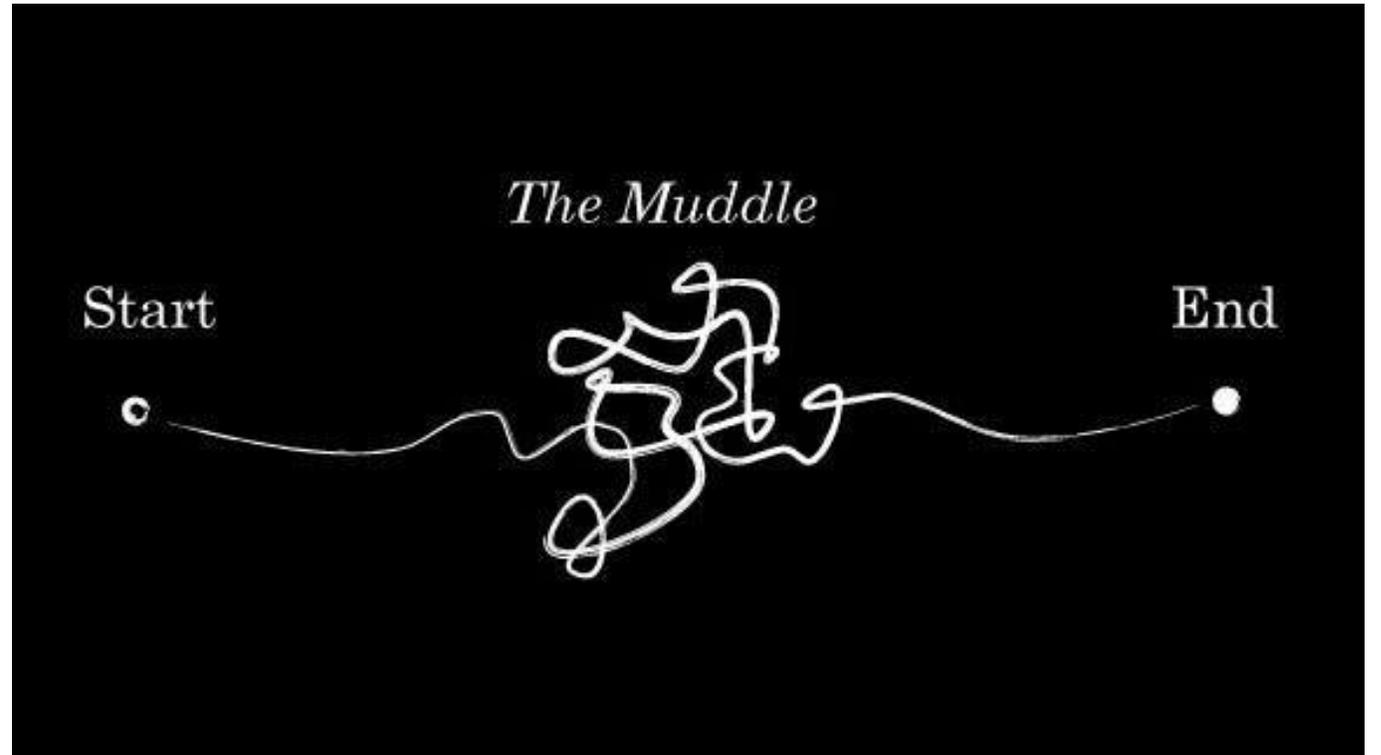




# This is just the monitoring ...

## Pilots

- Theoretical Pilot
- Practical Pilot
- Real experiment ... ?
- ➔ Also leads to new questions

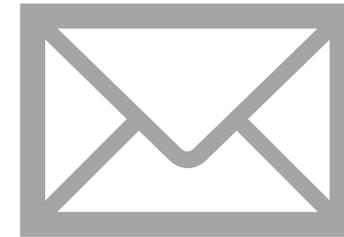




# Questions ??



[w.waterlander@amsterdamumc.nl](mailto:w.waterlander@amsterdamumc.nl)



[s.c.dijkstra@amsterdamumc.nl](mailto:s.c.dijkstra@amsterdamumc.nl)