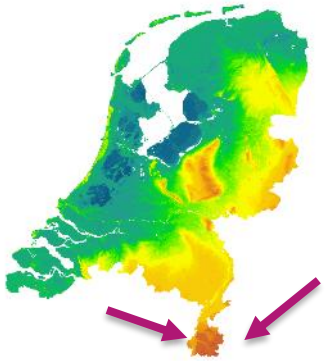
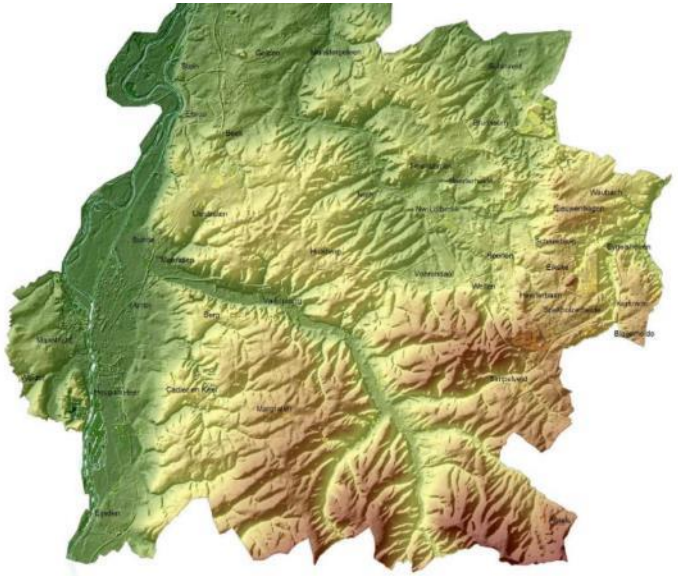
Water in Balance

waterschap limburg

The Netherlands – Limburg – Zuid-Limburg





Landscape of Zuid-Limburg

Video & Animation Water in Balance

Water in Balance Program

- In response to the **heavy rainsfalls and floodings** in 2014, 2016, 2018.
- Adaption of the water system to **climat change.**
- **Projects** in small areas in **collaboration** with the community and environment to avoid the nuissance of floods
- We look for **innovative** solutions to resolve bottlenecks or to contribute to additive values

Brandweer rukt uit voor wateroverlast in Zuid-Limburg

27-05-2018 om 13:52 door Redactie

Print

Afbeelding: Nifoma

Miljoenen om wateroverlast Meerssen aan te pakken

25-04-2019 om 17:45 door Jeroen Geerts

Print

Opnieuw wateroverlast in Meerssen

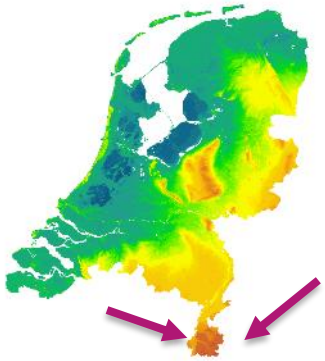
21 mei 2018

Hevige plensbuien hebben op de avond van tweede pinksterdag in Meerssen voor de nodige wateroverlast gezorgd. Ter hoogte van de rotonde bij de oprit naar de A2

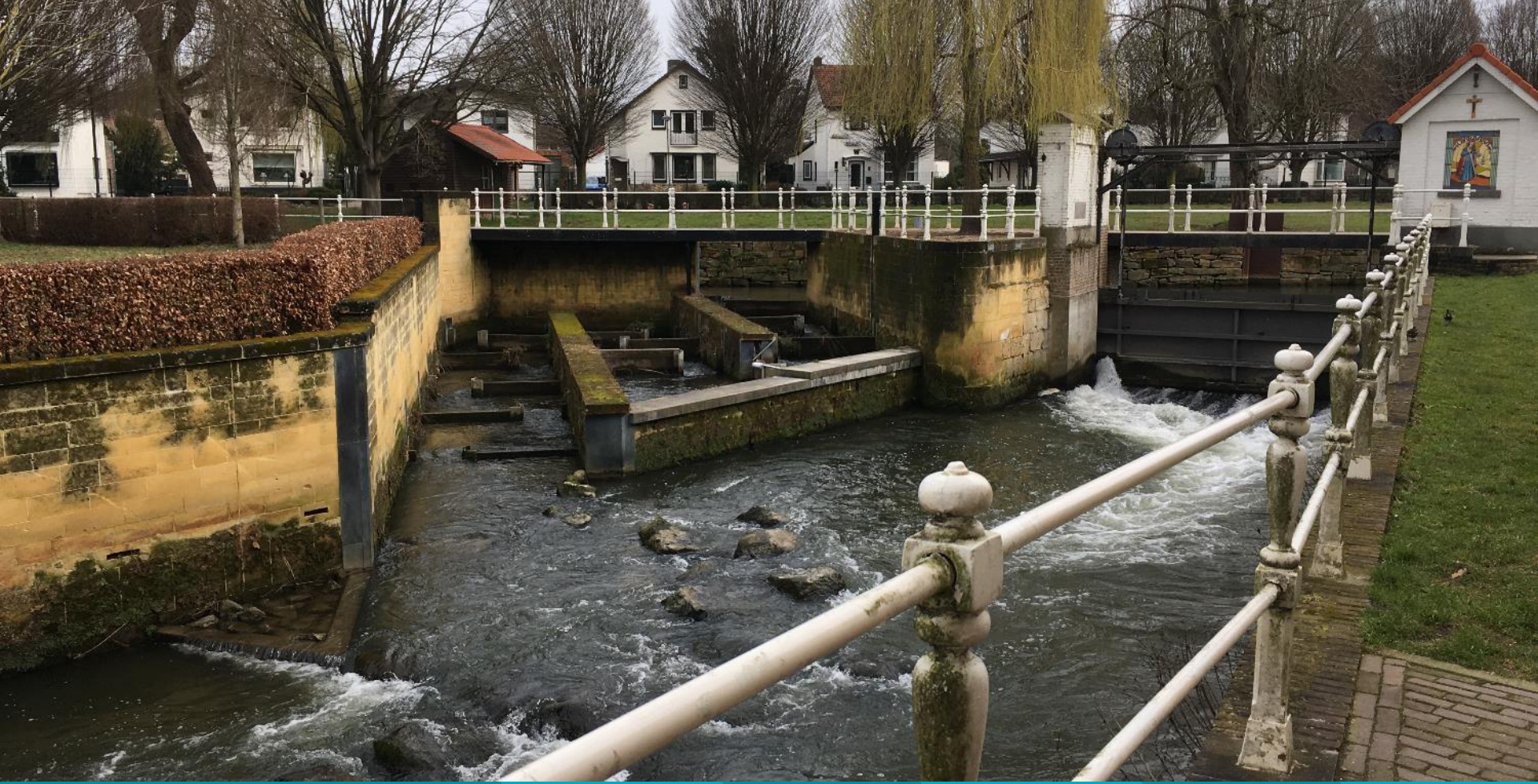
Het Parool HOME AMSTERDAM OPINIE PS STADSGIDS

Auto's onder water na noodweer Limburg

The Netherlands – Limburg – Zuid-Limburg



Bootleneck in the brook ‘Geul’ in Valkenburg Flood 14th of july 2021



Water in Balance – Solutions in four areas

Rural environment

Urban environment

Water system, brooks and brook valleys

Prevention of damage to homes

Stakeholders

1. Rural environment

Farmers and nature organisations

2. Urban environment

Municipalities, entreprises and inhabitants

3. Water system, brooks and brook valleys

Water authority

4. Prevention of damage to homes

Inhabitants

1. Rural environment
List of measures


green fertilization

sowing mais narrow rows


thresholds in ridge cultivation


no-tillage and shallow plowing


strip till


under-sowing


breaking hard crusts


sorghum


management of field margins


more compost


tearing loose work paths


permanent grasslands grassland management


basins on farmlands


hedges/nature

2. Urban environment

Municipalities, Entreprises and inhabitants

- *Different road profile*
- *Permeable pavement*
- *Disconnecting rainwater*
- *More green infrastructure*

3. Water system

Water Authority Limburg

- Retention basins
- Grass strips
- Dams
- Infiltration
- Broadening brooks

How works a retention basin?

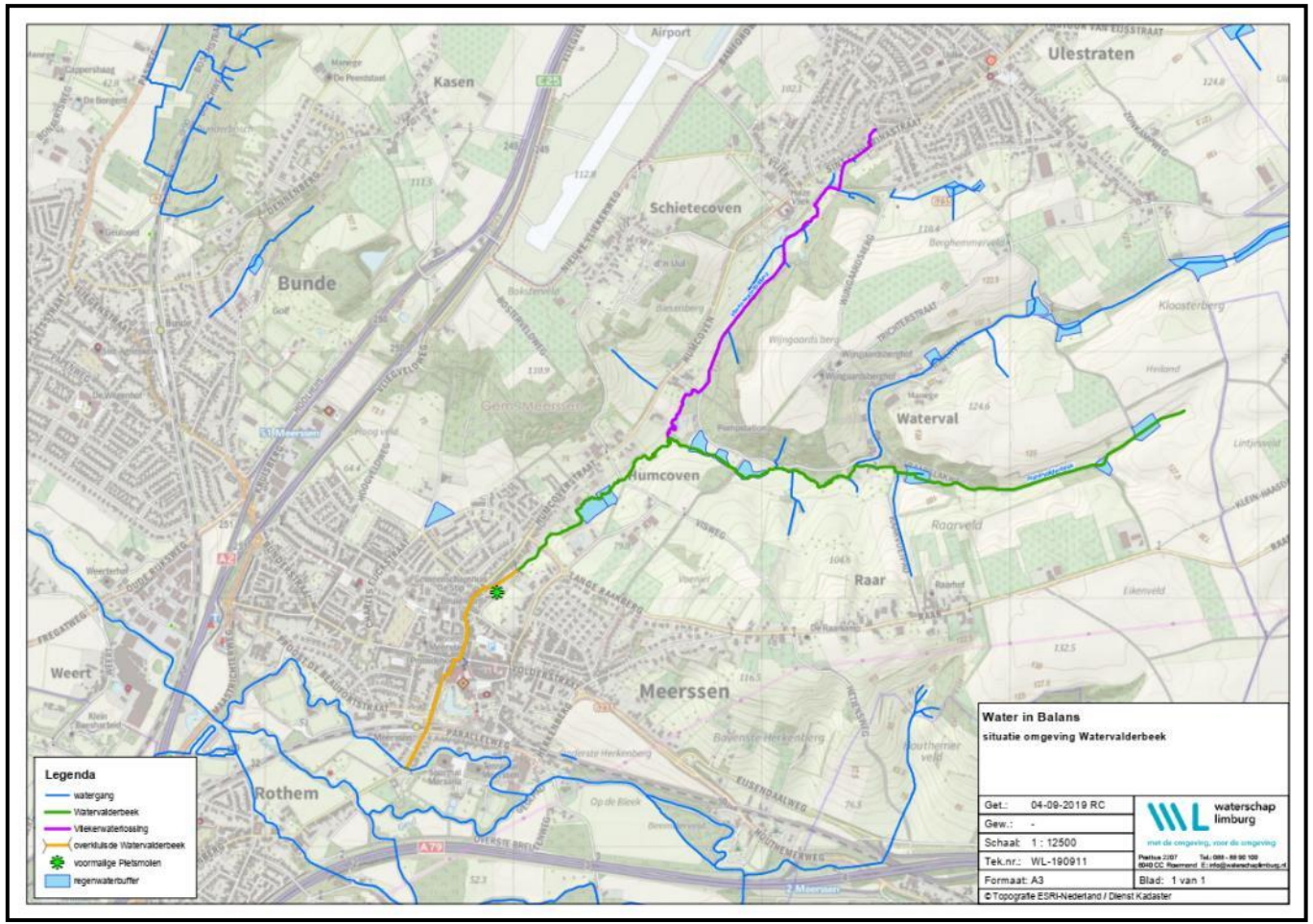
Retention basins

Meerssen

4. Prevention of damage to homes

Inhabitants

- Creating a sense of urgency/timely provision of information
- Arrange the home interior differently
- Building retaining walls in gardens
- Partitions
- Making cellars water-proof



water in balans

Water retention basins is not the only solution

Best solution

- Enough water infiltration in the bottom (water storage)
- but…
  - A lot of owners of the ground
  - Urban areas
  - Hilly area
  - Silly soil: difficult infiltration
  - Poor soil quality

Next step

- We are strong in water retention in basins
- but…
  - Perforated landscape
  - High costs
  - Acquisition of land
  - Loss of acceptance
  - Climate change effects are increasing
  - We can’t solve the problem anymore…

Can we find nature based solutions?

Run-off in corn field

Run-off in corn field

Resultaten Mais Wijnandsrade 2021

minder afspoeling water , meer vastgehouden
verschil in mm/m2
t.o.v. 75 cm zonder gelijkzaai rietzwenk

water in balans

systeem	28-6	29-6	30-6	5-7	13-7	15-7	5-8	10-8	27-8	totaal
neerslag	35 mm 18 mm	35 mm	14 mm	15 mm	8 mm 33 mm	83 mm	45 mm 24-7 tot 3-8	45 mm	24 mm 16-8 tot 24-8	
afspoeling bij 75 cm	0.4 mm	1.2 mm	0.3 mm	0.04 mm	1.8 mm		3.1 mm	3.1 mm	0.9 mm	
50.0	0.1	0.2	-0.1	0.01	1.5		1.5	2.4	0.8	6.4
37.5	0.3	0.6	0.1	0.03	1.5		1.8	1.8	0.8	6.9
75.0 met	0.4	1.0	0.2	0.04	1.4		2.1	2.4	0.8	8.3
50.0 met	0.3	0.8	0.2	0.02	1.4		1.6	2.3	0.7	7.3
37.5 met	0.4	1.1	0.2	0.04	1.1		2.4	2.6	0.8	8.6

WAGENINGEN
UNIVERSITY & RESEARCH

2 mm = 2 ltr/m2 = 20.000 ltr per ha