



Europe's Sanitation Problem

20 million Europeans need access to Safe and Affordable Sanitation

Stockholm, 19 August 2008



School toilet and water well....



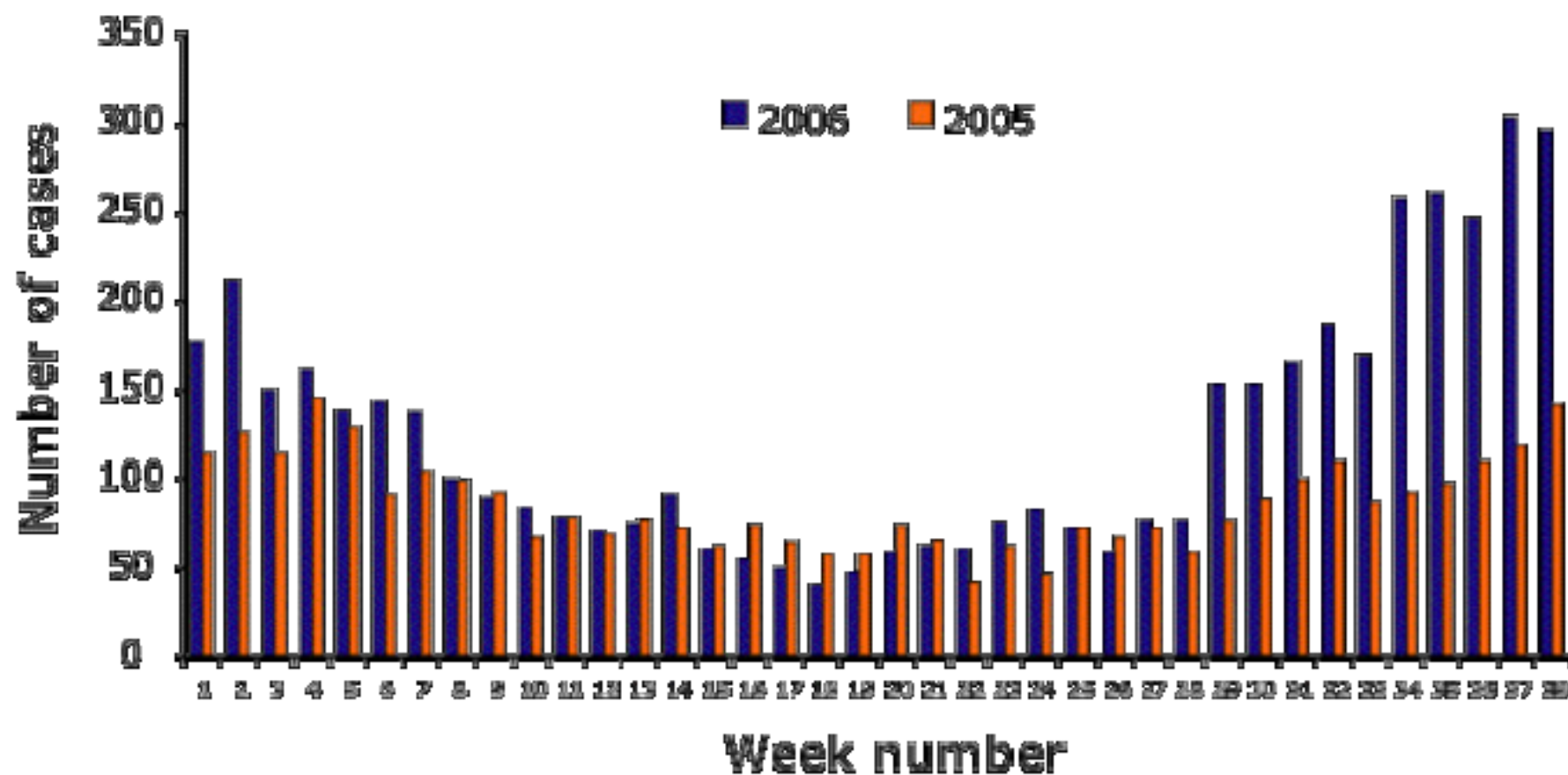
**More than 500 mg nitrate in
drinking water sample**



Drinking Water Wells often close to latrines



Weekly number of cases of acute viral hepatitis in Bulgaria, 2005 and 2006 (WHO)



Human dignity?



Overflowing soak away: Bulgaria



Safe Sanitation?

- Hygienic toilet facilities
- Including hand washing facilities
- Toilet waste does not pollute the direct environment (yard, drinking water)

Unsafe Sanitation?

- In Eastern EU rural area, many:
 - School latrines
 - pit latrines
 - soak-away pits
 - malfunctioning septic tanks...

Affordable and Safe?

- **So is sewage the solution?**
- Expensive for low income rural areas?
 - 1-2 euro per cubic meter with treatment
 - Oversized and inefficient new treatment plants..
 - Down stream pollution
- Loss of valuable nutrients
 - Mixing everything together
 - Nutrients are lost
 - Heavy metals in sewage sludge
- Creates large volumes which are expensive to treat

Keep costs down

Prevent pollution at the source

- Separate collection
- Containing the waste
- Sanitizing the waste
- Full re-use nutrients
- Zero emissions
- Keep volume wastewater small

Advantages of source-separated wastewater treatment:

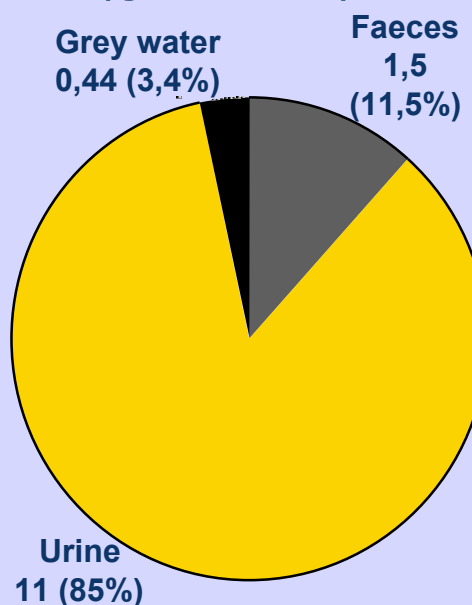
- Limits the increase in cost (saves energy and space)
- Reuse of P
- Urine as fertilizer
- Barrier: urine not explicitly allowed as fertilizer in EU legislation



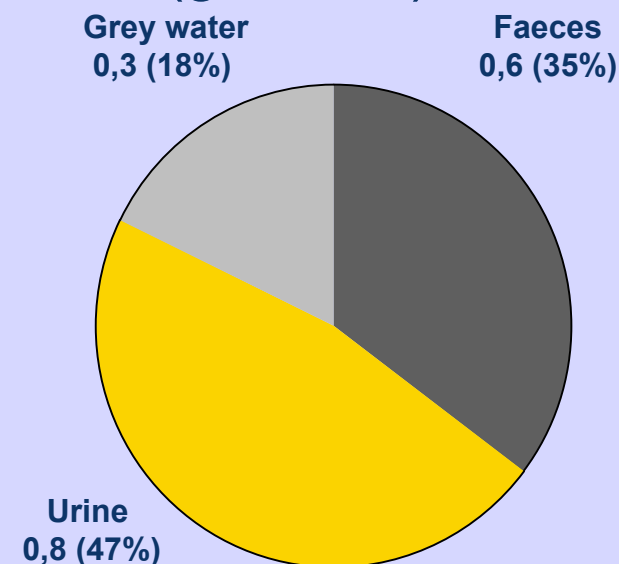
Urine is 1% of wastewater volume

- Urine contains:
85% of all N
47% of all P
in the waste-
water flow

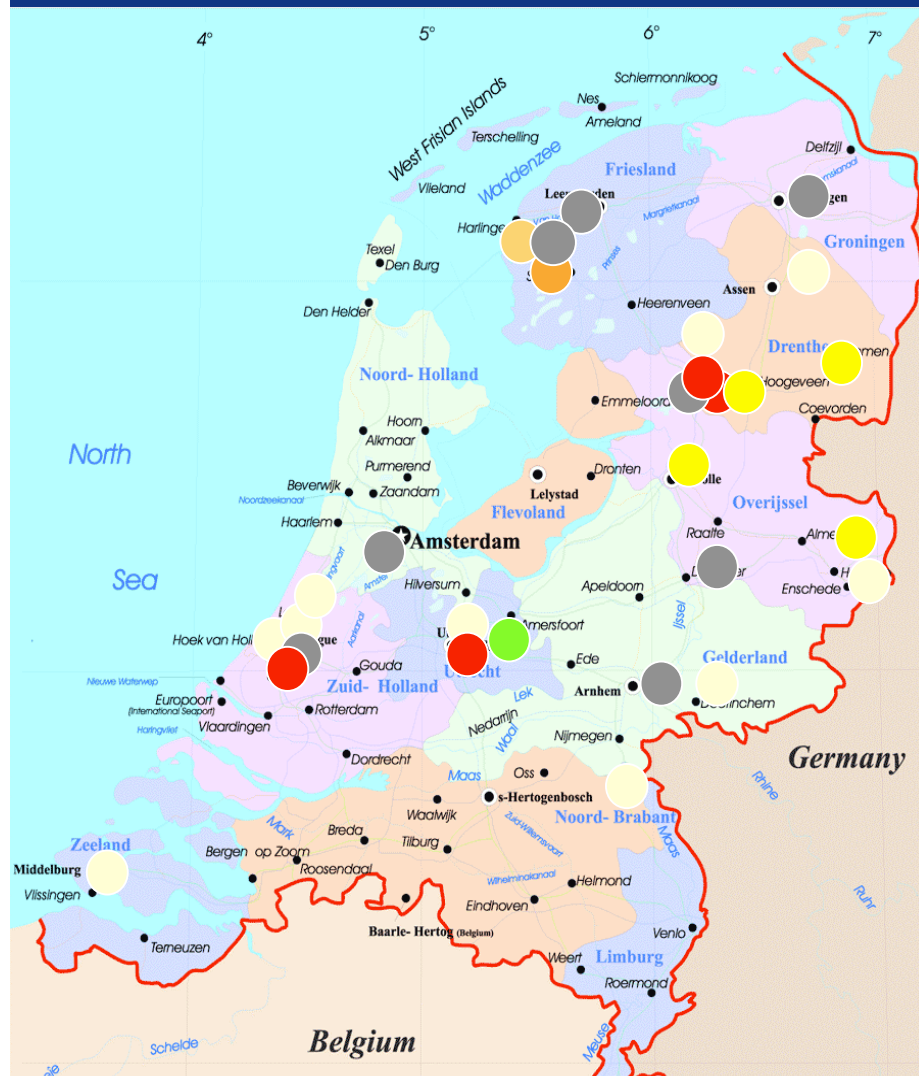
N (g/d & %)



P (g/d & %)



Sustainable decentral wastewater pilots



- Finished projects
- Urine project in progress
- Urine project in preparation
- Blackwater project in progress
- Blackwater project in preparation
- Possible initiatives
- Non site specific project

Affordable and Safe?

Great variety of solutions

- High tech fully automatized
- Low tech, low cost, reliable
- On site individual solution
- Small community solution
- Energy recovery
- Nutrient recovery
- Water saving...

Vacuum-Biogas-System: 32 houses in Sneek, The Netherlands



**Tigh Mor
Trossachs
WSP**



Loch Achray



Household solutions Finland



**Finland obliges each household to treat its
wastewater by law**



EUROPEAN COMMISSION

Directorate-General for Regional Policy

Cohesion Policy – 336 billion

- Drinking water € 8 billion (2.3%)
- Waste water €14 billion (4%)
- Risk prevention € 6 billion (1.7%)

Period: 2007 - 2013
30% of total EU budget

Funds do not go to most needy

- Wastewater funds aimed at larger cities (>10.000 pop.)
- To connect central sewage and treatment plants
- Not for those deprived of safe sanitation
- Not for innovative decentralized safe systems

it is possible

- To provide all 20 million people with safe sanitation and wastewater treatment
- At 600 euro each for a safe toilet, washbasin and wastewater treatment
- 428 million Euro per year
- till 2015

Dilemma

- European Commission: countries set their own priorities
- Member states: first want to comply with binding regulations
- There is no binding regulation to provide safe sanitation...
- ..nor is there obligation to provide safe drinking water for all
- Only as basic principle in the EU charter of fundamental rights: high level health protection

Thank you

