

# New Danish policy initiative for local level action

Flemming Gertz, Chief consultant, SEGES

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# Content

1. Short insight in Danish water governance and nitrogen regulation
2. New green deal for agriculture
3. Topdown / bottom-up perspectives

# Danish agriculture in a few numbers

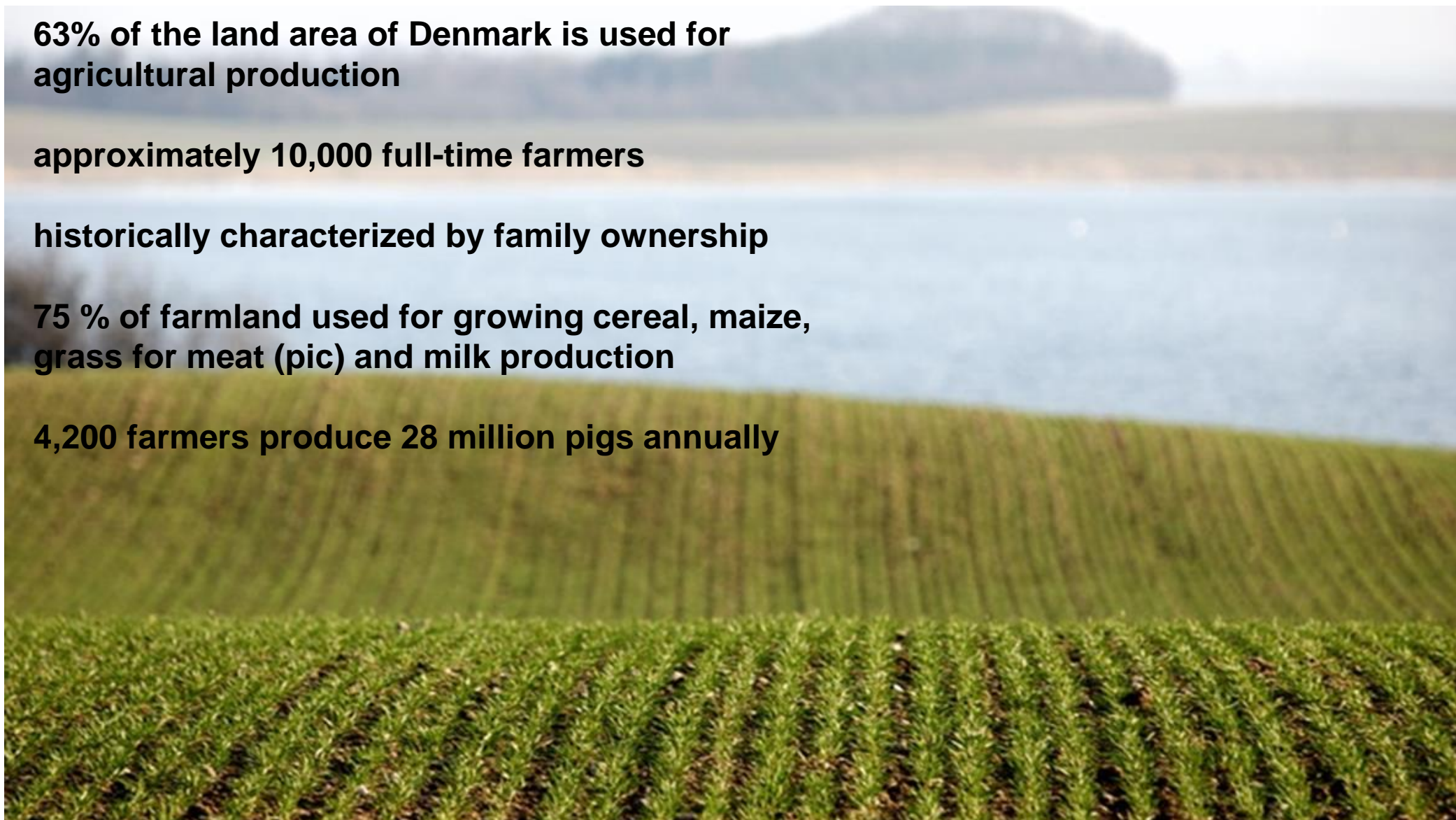
**63% of the land area of Denmark is used for agricultural production**

**approximately 10,000 full-time farmers**

**historically characterized by family ownership**

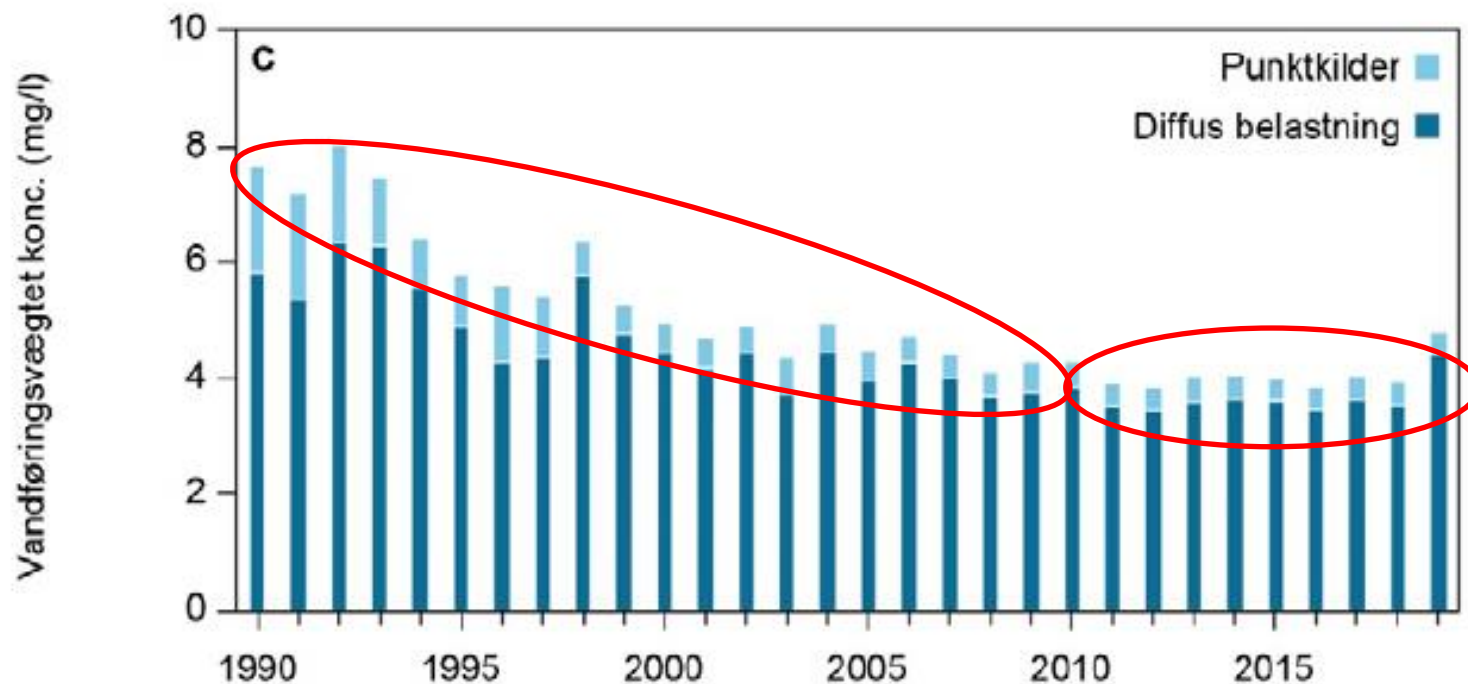
**75 % of farmland used for growing cereal, maize, grass for meat (pic) and milk production**

**4,200 farmers produce 28 million pigs annually**



# Governance and nitrogen regulation

1. Long coastline and shallow coastal waters
2. Since 1980s the main water environment focus have been nitrogen reduction



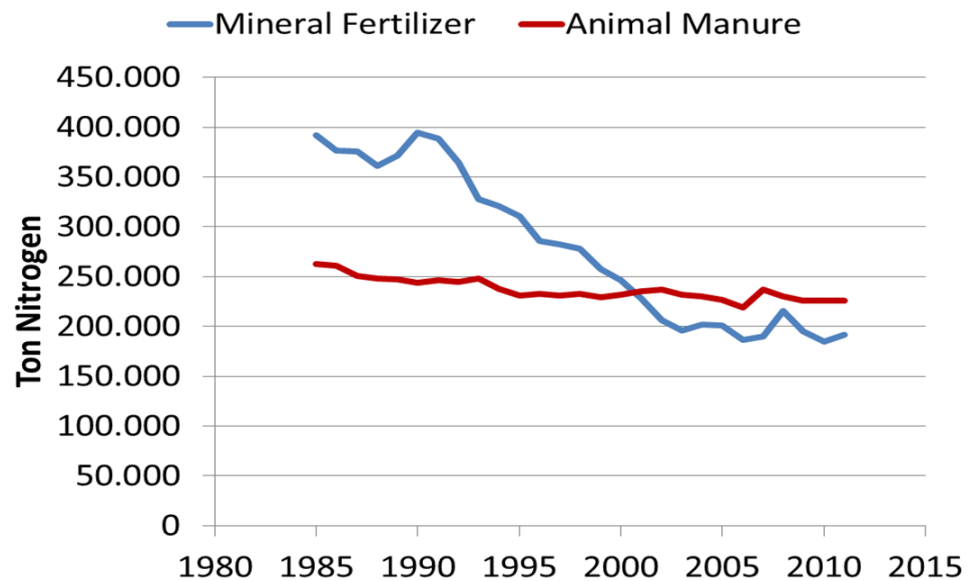
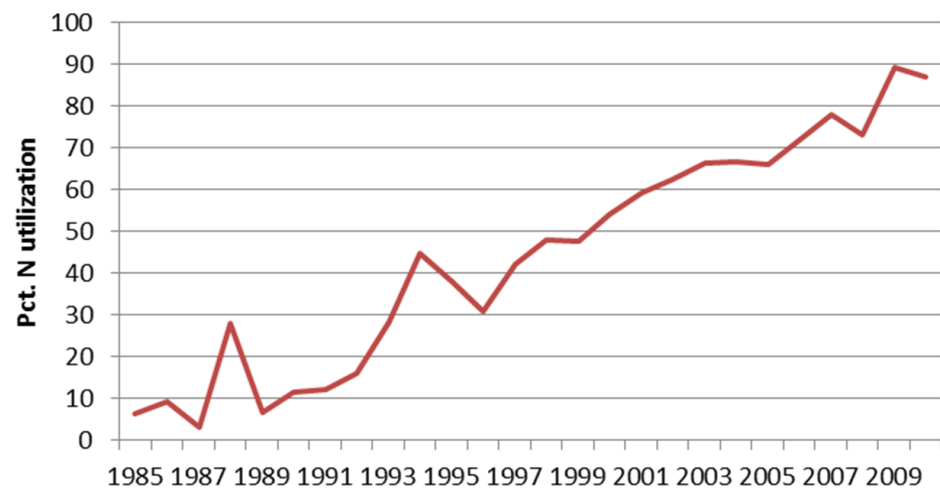
## Nitrogen concentration in streams

Source: Thodsen, H., Tornbjerg, H., Bøgestrand, J., Larsen, S.E., Ovesen, N.B., Blicher-Mathiesen, G., Rolighed, J., Holm, H. & Kjeldgaard, A. 2021. Vandløb 2019 - Kemisk vandkvalitet og stoftransport. NOVANA. Aarhus Universitet, DCE – Nationalt Center for Miljø og Energi, 74 s. - Videnskabelig rapport nr. 452  
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# Top down implementation

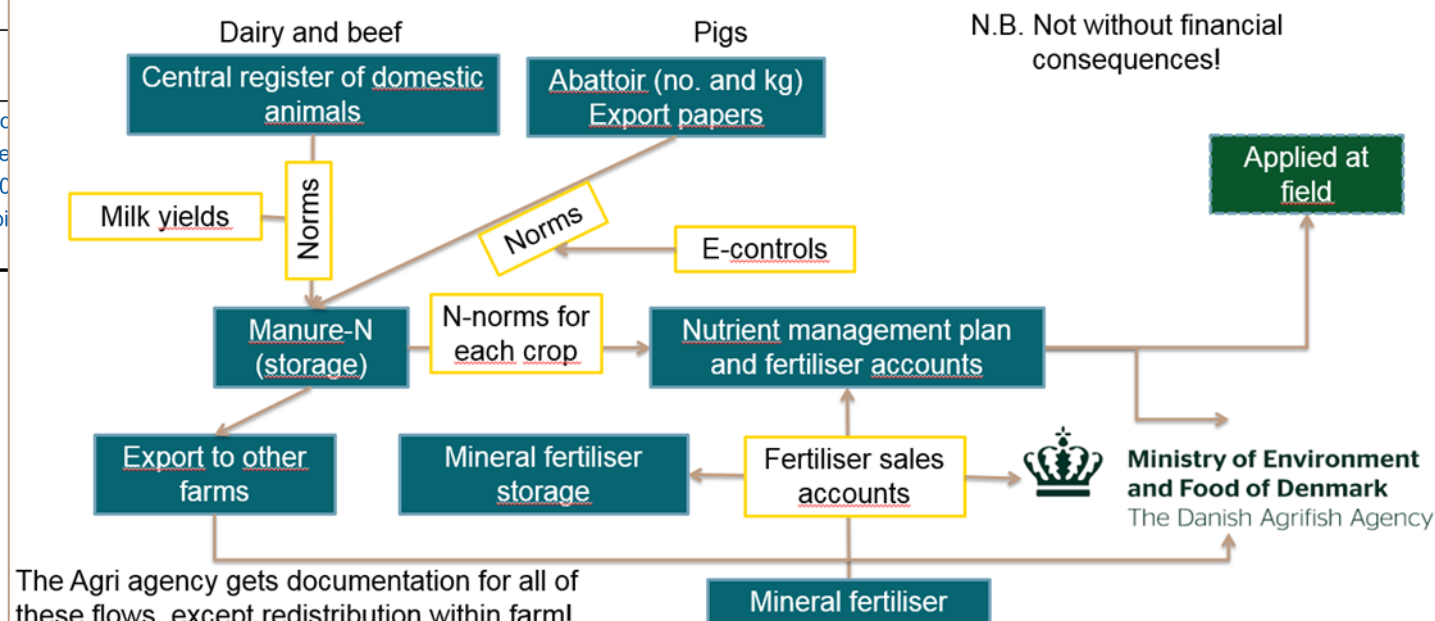
## Utilization of N in animal manure



# Top down implementation

| Time      | Plan                                     | Significant elements in legislation:   |
|-----------|--|--|
| 1985      | NPO-plan                                 | -regulation of allowed animal unit per ha.<br>- min. storage capacity for animal manure  |
| 1987      | Water Environm. Plan I                   | -50 pct reduction in N-leaching from agr.<br>-65 pct "autumngreen fields"<br>-Slurry in autumn only to wintercov. fields   |
| 1992      | Action plan for sustainable agriculture  | -Slurry only to grass or oilseed rape in autumn<br>-Max. N-standards for crops (N-quota per farm)<br>-Min. utilisation of nitrogen in animal manure<br>-Fertilizer plans and -accounts.        |
| 1998      | Water Environm. Plan II                  | -10 pct decrease of N-standards (The N-quota)<br>- 6 percent "super" green fields in autumn<br>-15 pct higher utilization of N in animal manure  |
| 2003      | Water Environm. Plan III                 | -Target for decrease of P surplus<br>-More wetlands<br>- 10/14 pct. covercrops (10 at <80kg manure-N   |
| 2011-2013 | WFD                                      | -More cover crops<br>-Establishment of wetlands  |
| 2016      | Agricultural package<br>WFD 2. gen plans | - Area specific regulation based on need to c<br>- N-standards back to financially optimal leve<br>- Raised N-standards compensated by 140.0<br>- Max. 170 kg N pr. ha (previously 140) for pi |

## Danish fertiliser accounts and nutrient management plans – a closed mass balance based on register data



# New deal for green transformation of danish agriculture (october 2021)

## Principles:

Agriculture must be made more climate- and environment-friendly while being economically sustainable

Agriculture must be developed and not phased out

1. Binding reduction target for greenhouse gas emissions of 55-65 % in 2030 compared to 1990
  1. Low land organic rich soils out of production (up to 100.000 ha)
  2. Development track (green fuel ect.)
2. Green food/green proteins (from field to table and export)
3. Nitrogen reductions 10.800 ton N in 2027 (load today 55.000 ton N)

# Nitrogen

Two tracks:

Regulation: 6.500 ton N

Voluntary measures (compensated): 1500 ton N (wetlands, drainpipe filter solutions ect.)

Every second year a status

If more can be done with voluntary measures (or visa versa) numbers can change between tracks

New Initiative: Pilot projects “local based water plans” running 2022-2024 (evaluation in 2024)

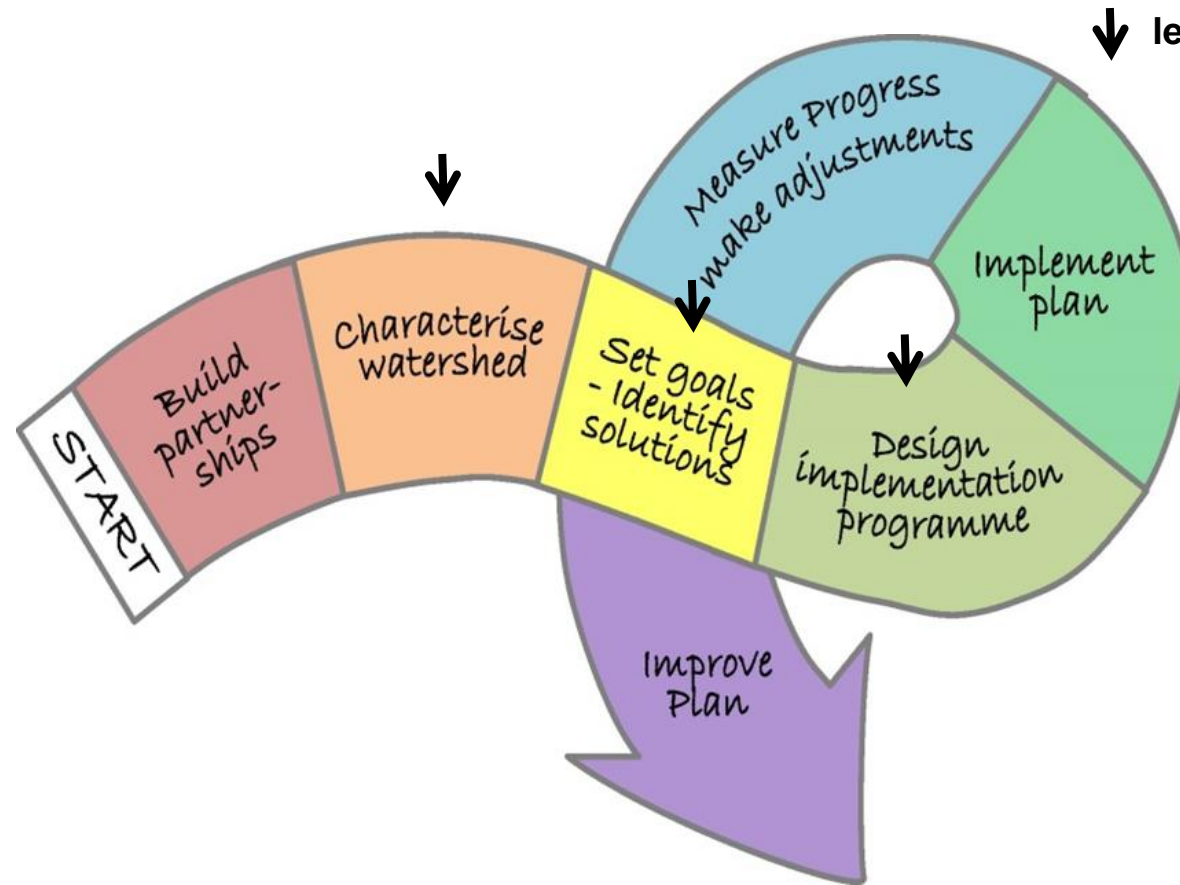
- Local partnerships – local based way to get good ecological status

New Initiative for implementing wetlands/drain solutions etc. faster – New plan for better local planning and collaboration

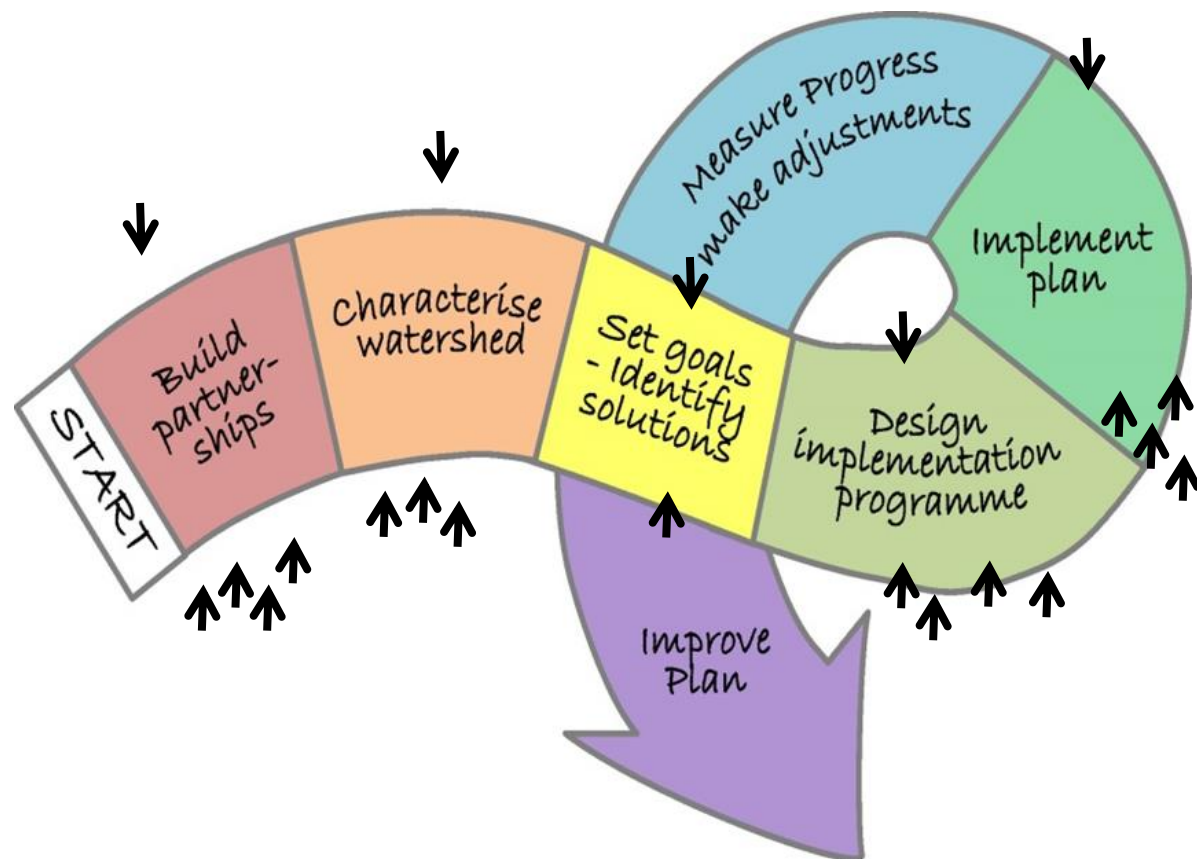




# Top down regulation – down side



# Water management in the future



**Good balance between top down and bottom up**





Thank you for your attention

