



Ecological Recycling Agriculture as a tool to protect surface water and the Baltic Sea

Artur Granstedt

artur.granstedt@jdb.se

www.sbfi.se

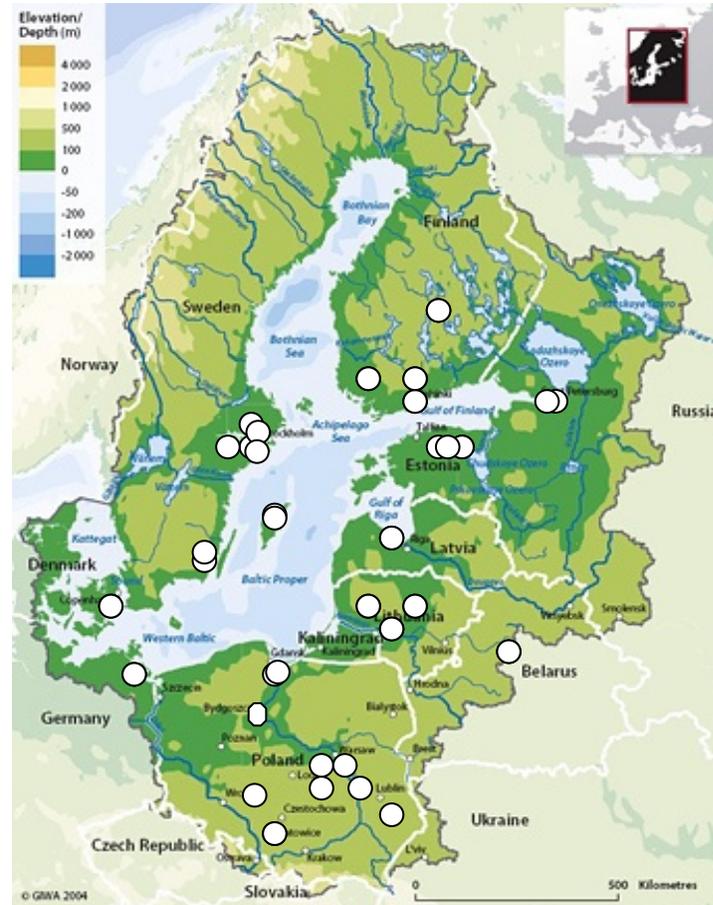
BERAS 2003-2006

48 farms, 20 partners in 8 countries

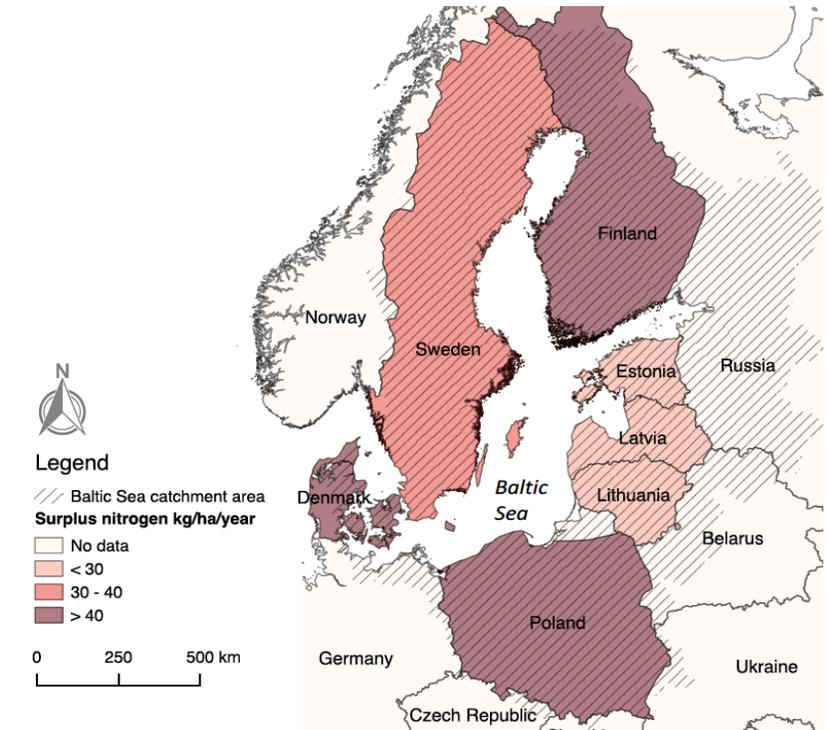


BERAS Implementation 2010-2013

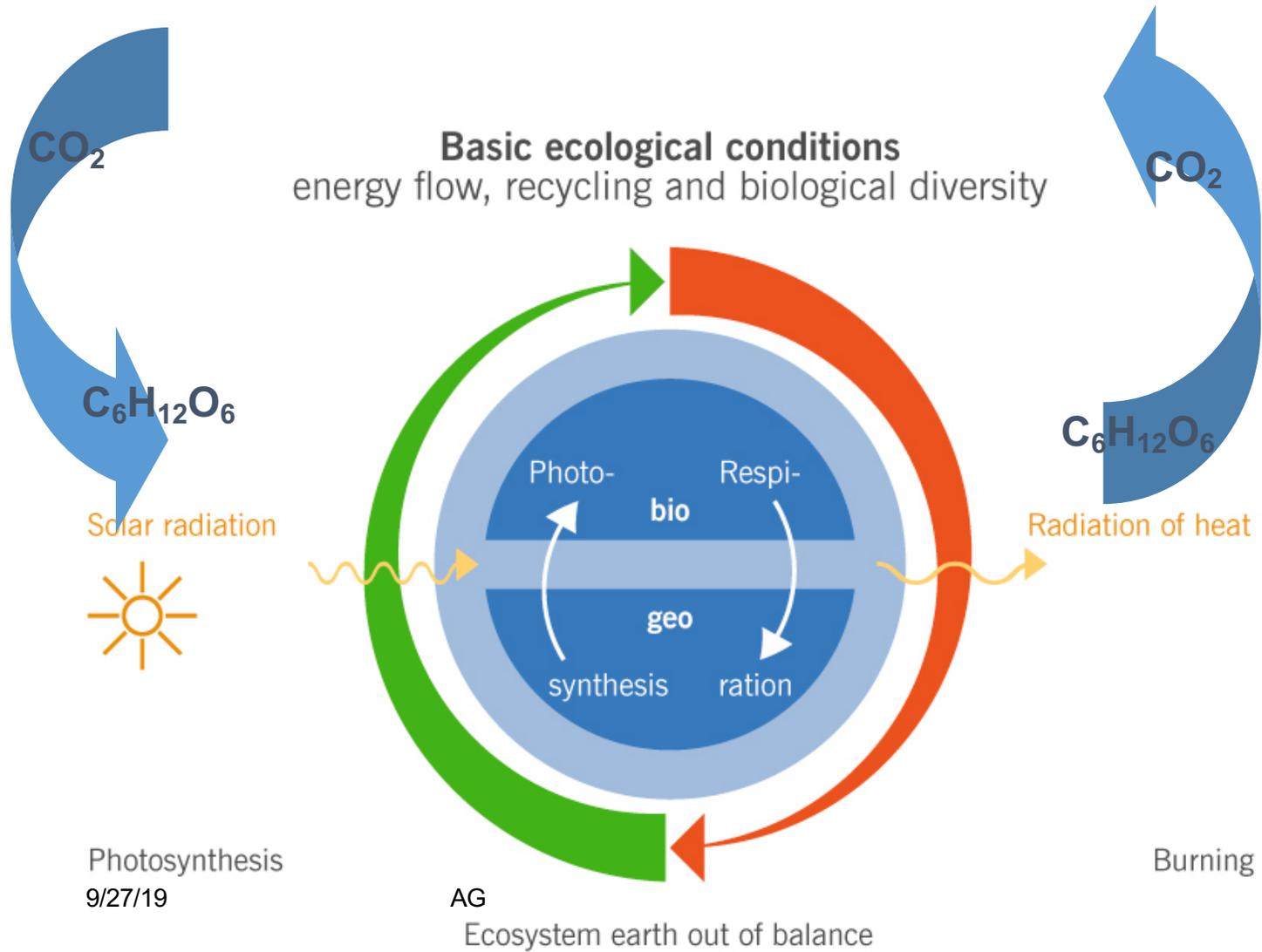
24 partners, 18 farms in 9 countries



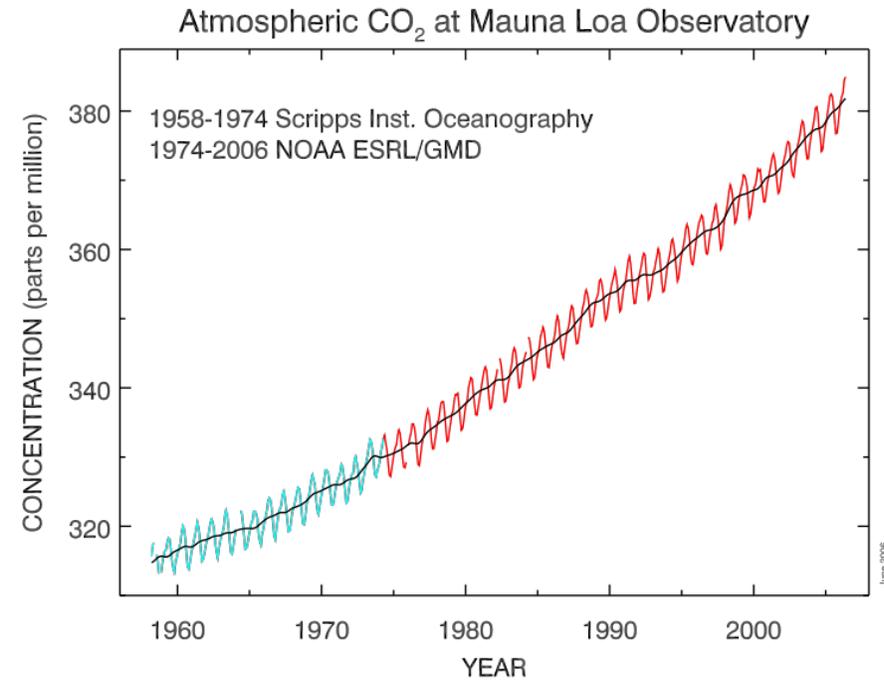
Ecological Recycling Agriculture with focus also on Poland 2016-2018

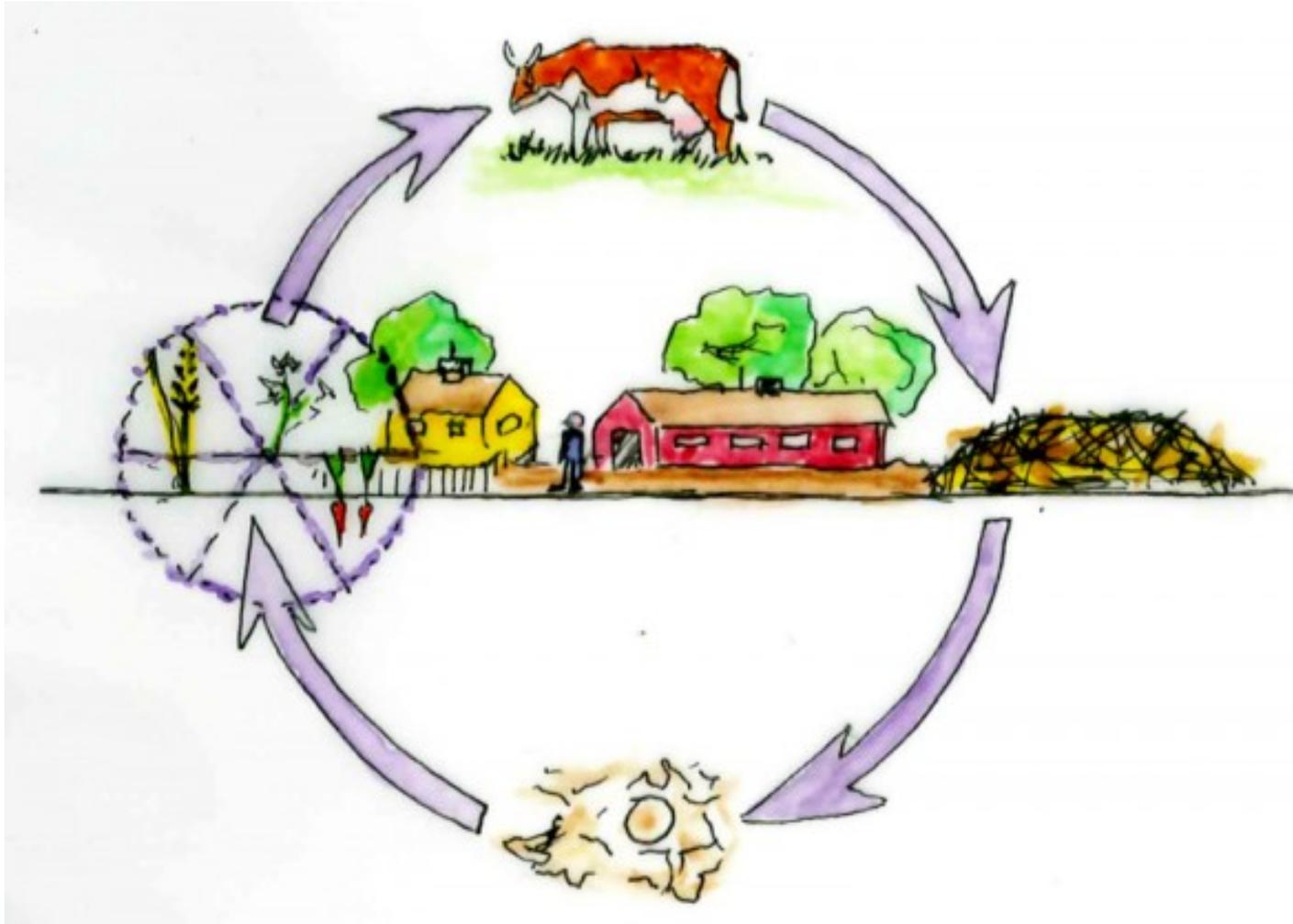


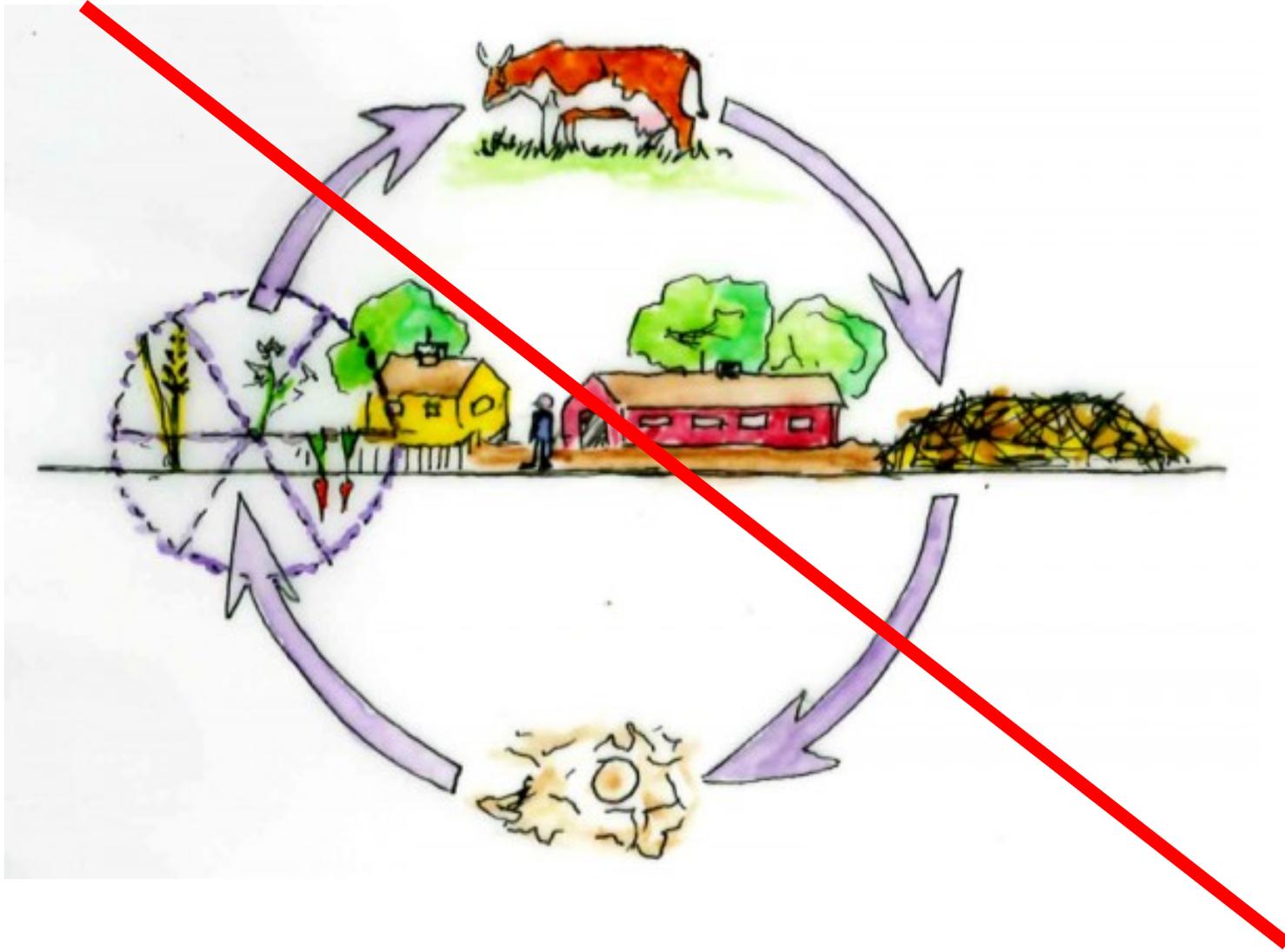
Ecological Recycling Agriculture and Food Cluster 2018-2019



**Ch. D. Keeling mobilized enough resources so he could, starting
 . 1958, measure the CO₂ in the atmosphere on Mauna Loa
 observatory in Hawaii**



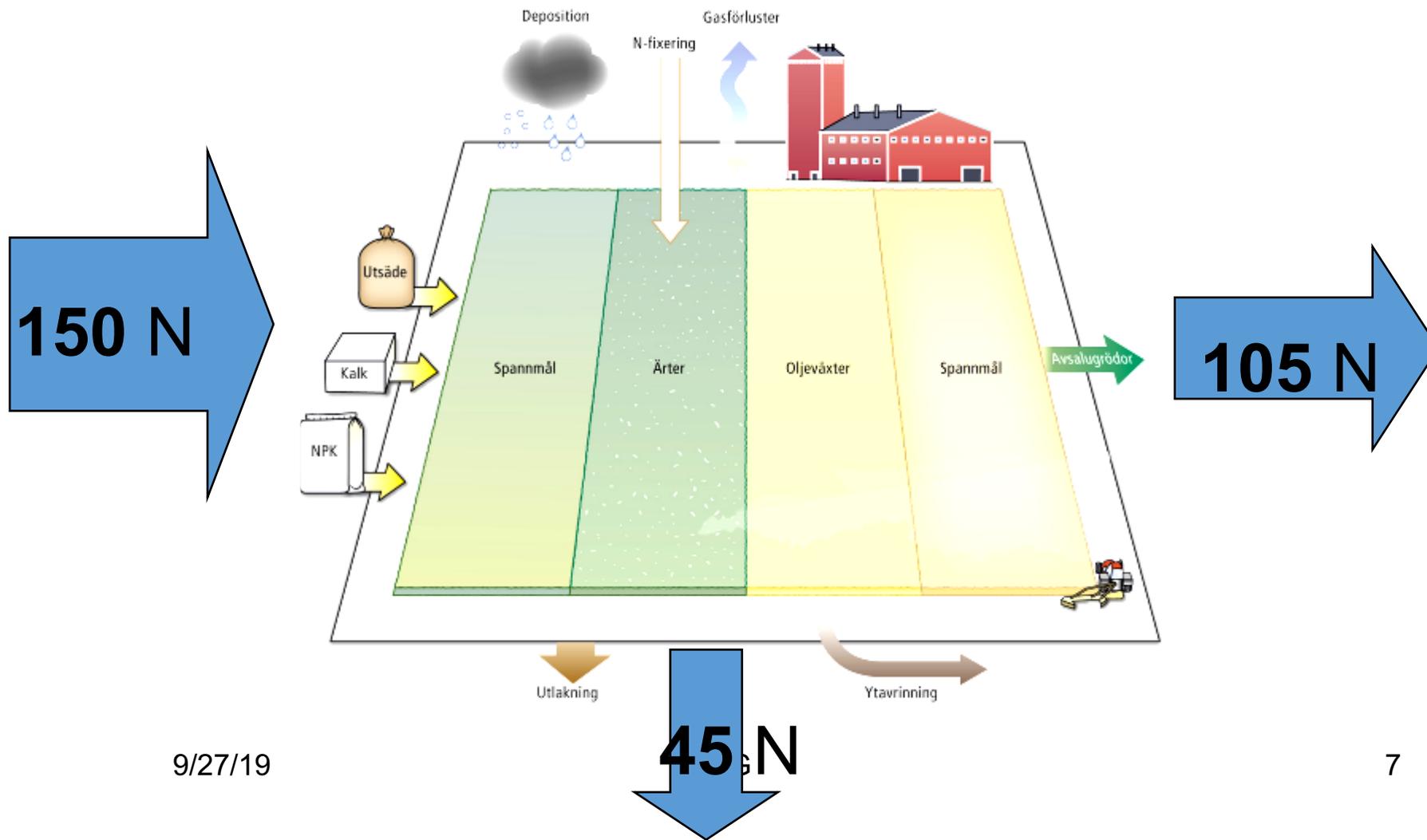




Specialized crop farm

Input, output and surplus of Nitrogen kg/ha and year

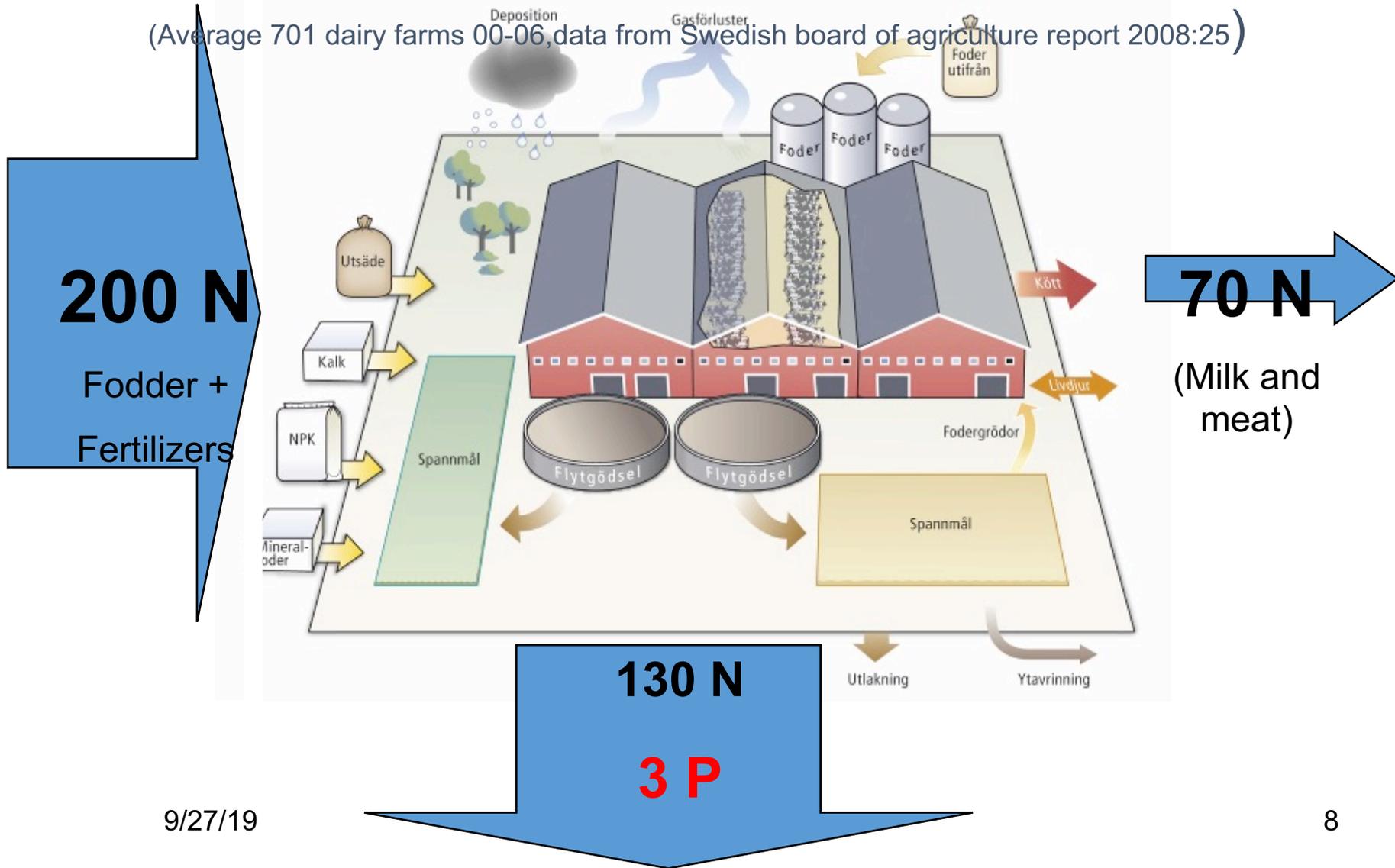
(Average 563 farms 01-06 data from Swedish board of agriculture report 2008:25)



Specialized animal farm

Input, output and surplus of Nitrogen kg/ha and year

(Average 701 dairy farms 00-06, data from Swedish board of agriculture report 2008:25)



Depleted arable fields, eutropficated sea and climate warming

Näringsfattiga åkrar, övergödda hav och varmare klimat

85 % av åkerns grödor



blir foder till

grisar,

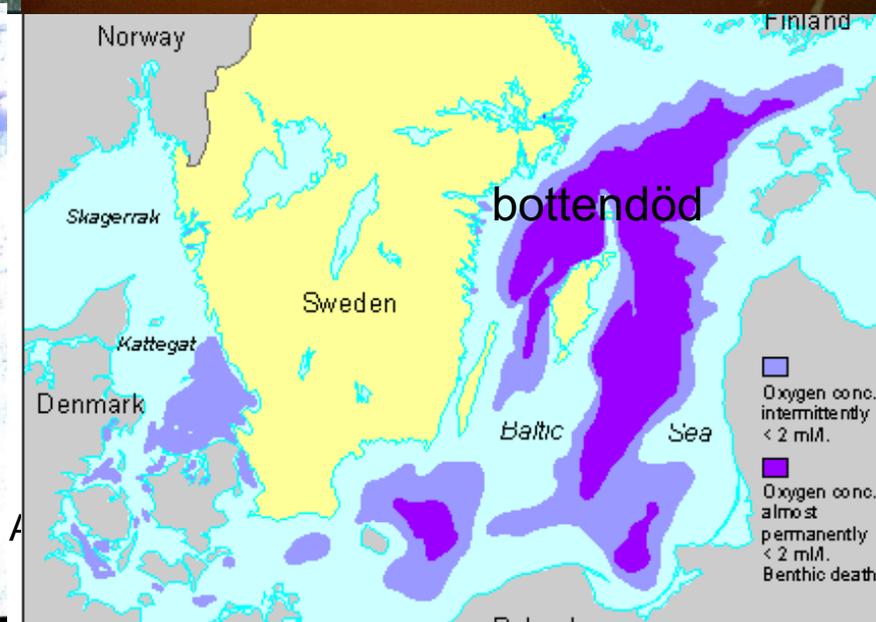
höns och

kor

vars gödselöverskott leder till

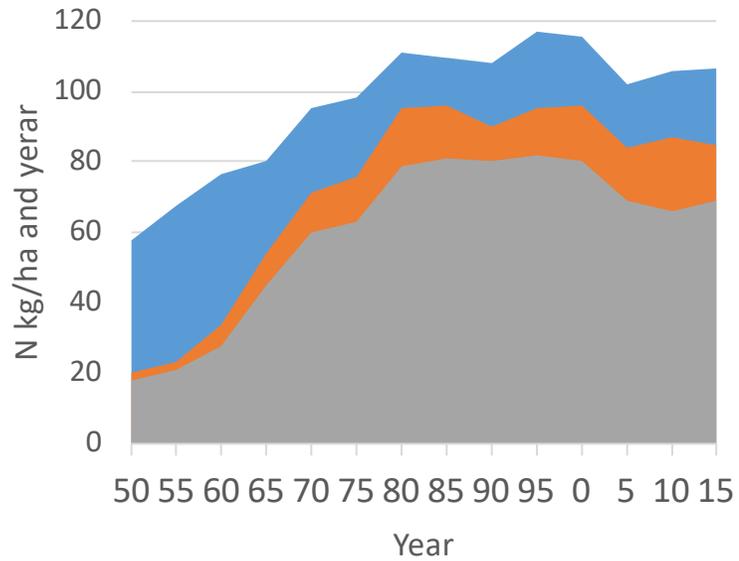


algbloomning



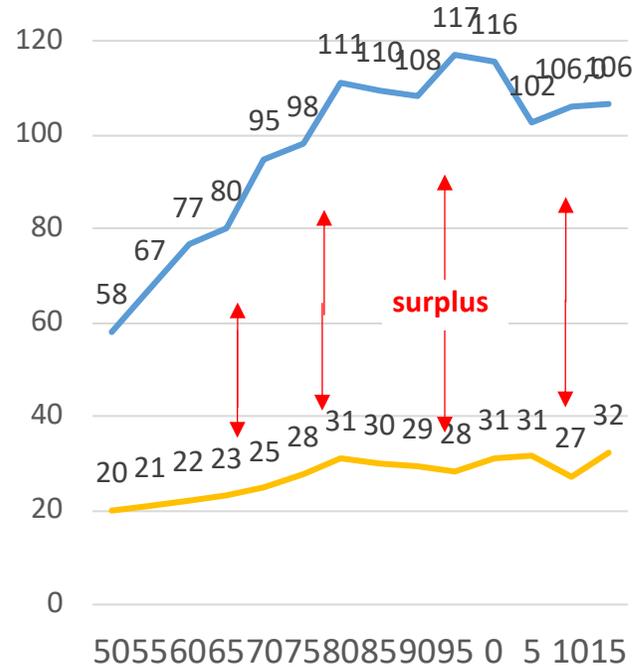
bottendöd

N-supply kg/ha Swedish agriculture



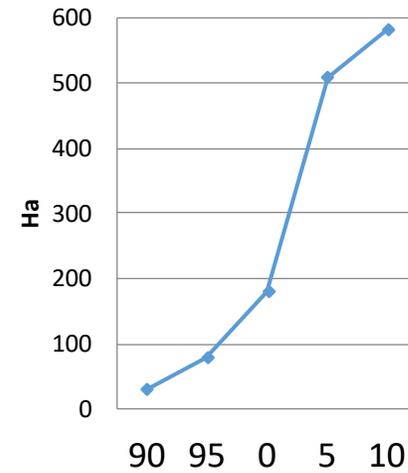
- N-fix, atmospheric deposition
- Imported feed
- Artificial fertilizer

N-surplus kg/ha in Swedish agriculture

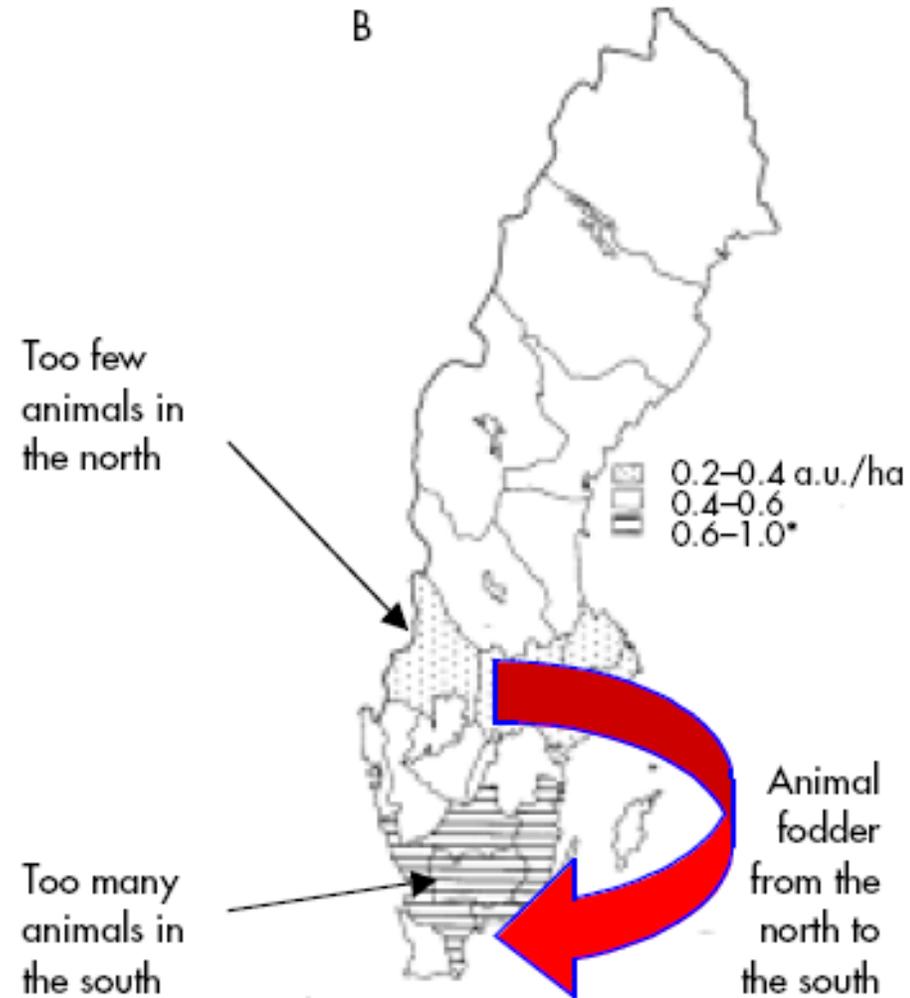


- Total supply
- Output agricultural products

Ecological agriculture in Sweden

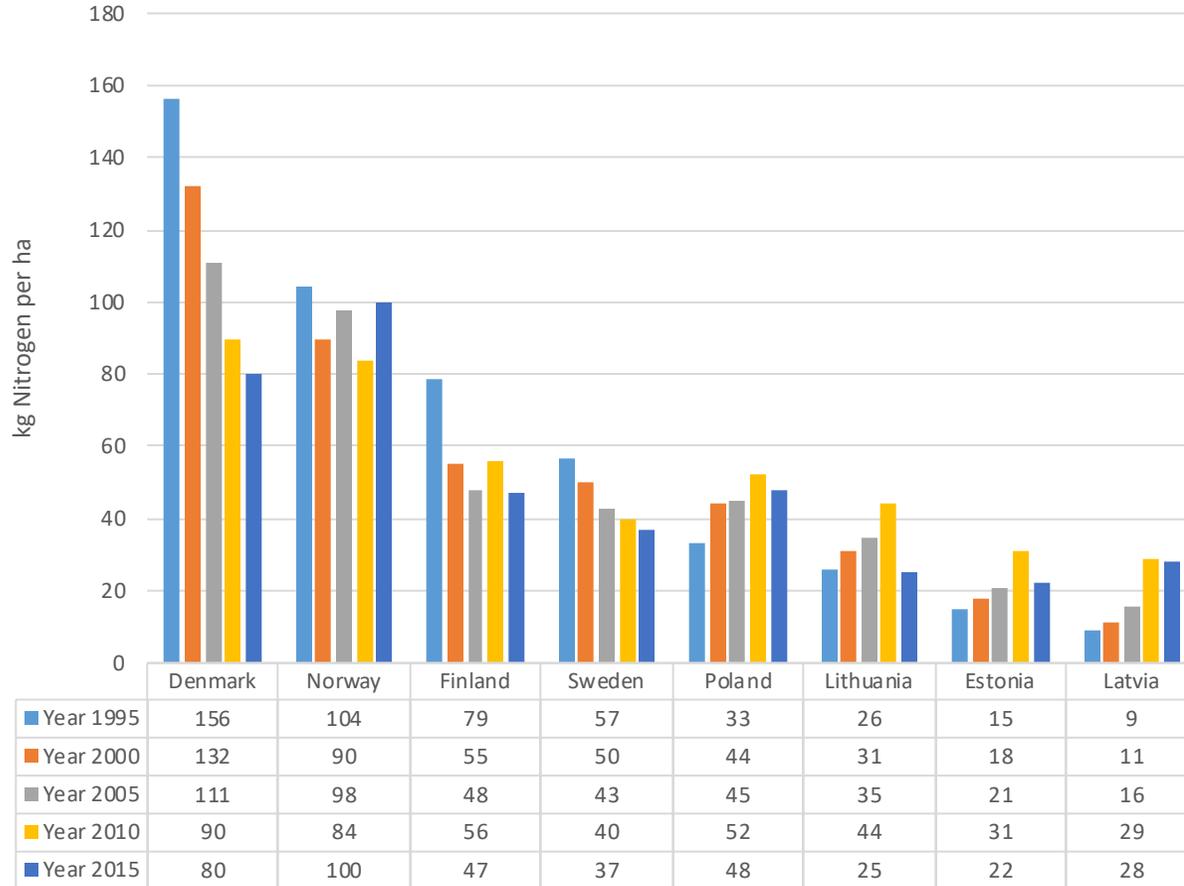


With regional – concentration

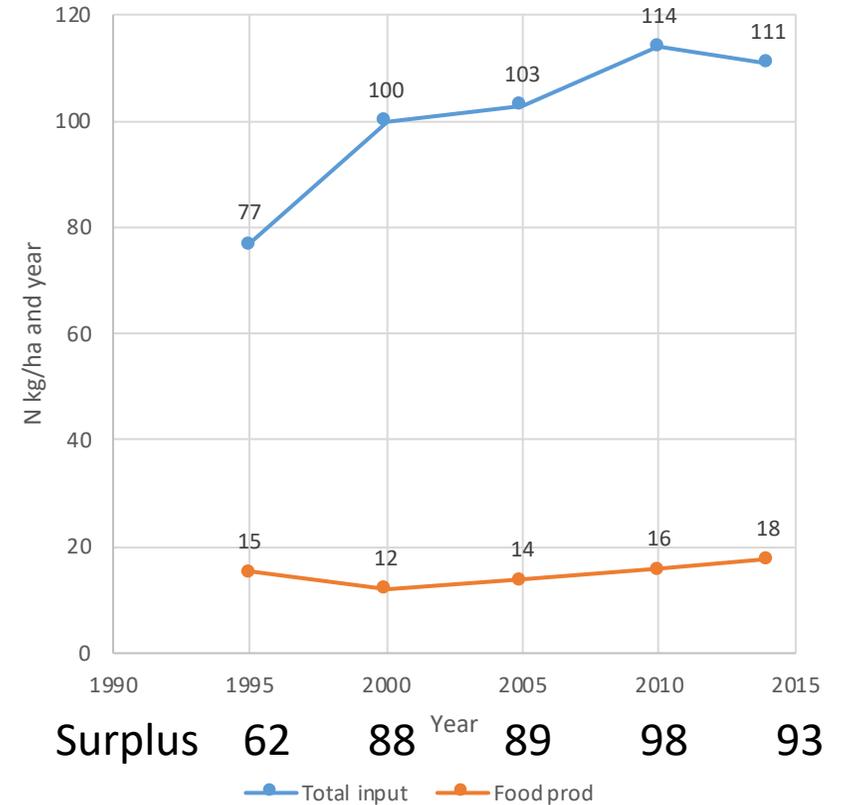




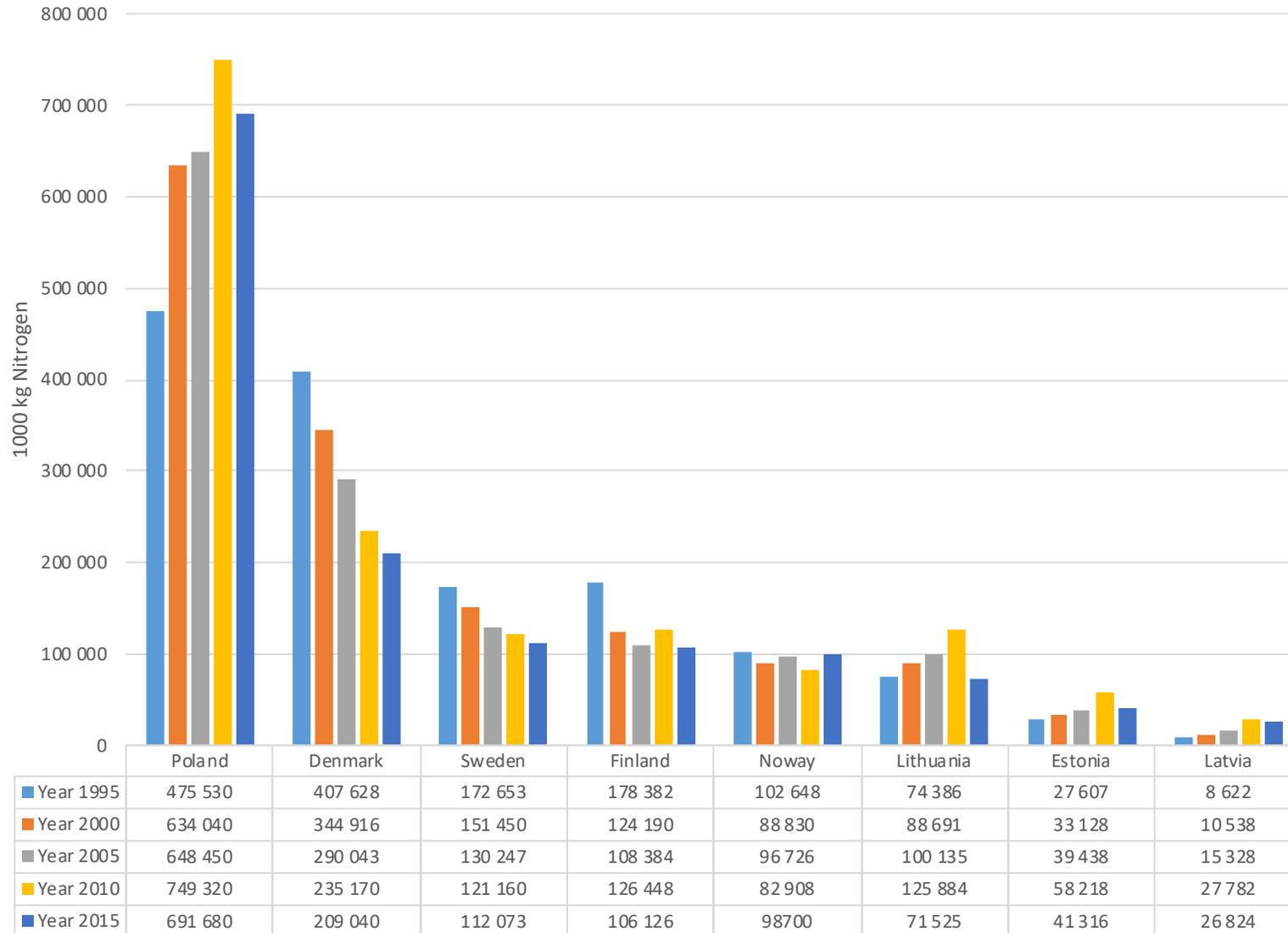
Field Nitrogen Surplus per ha utilised agricultural area in Baltic Sea Countries and Norway



Total N input - output Polish



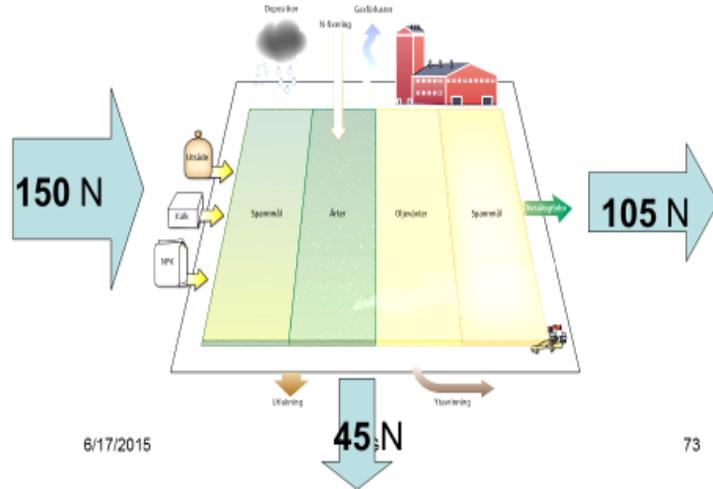
Total Nitrogen Field Supplus utilised agricultural area
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Specialized crop farm

Input, output and surplus of Nitrogen kg/ha and year

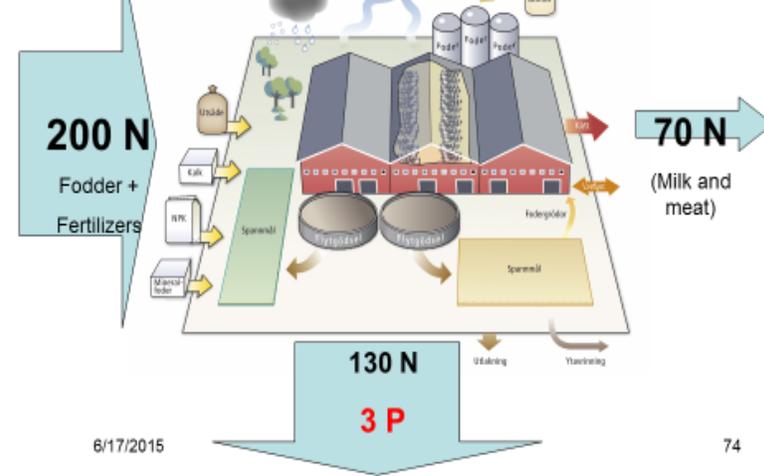
(Average 563 farms 01-06, data from Swedish board of agriculture report 2008:25)



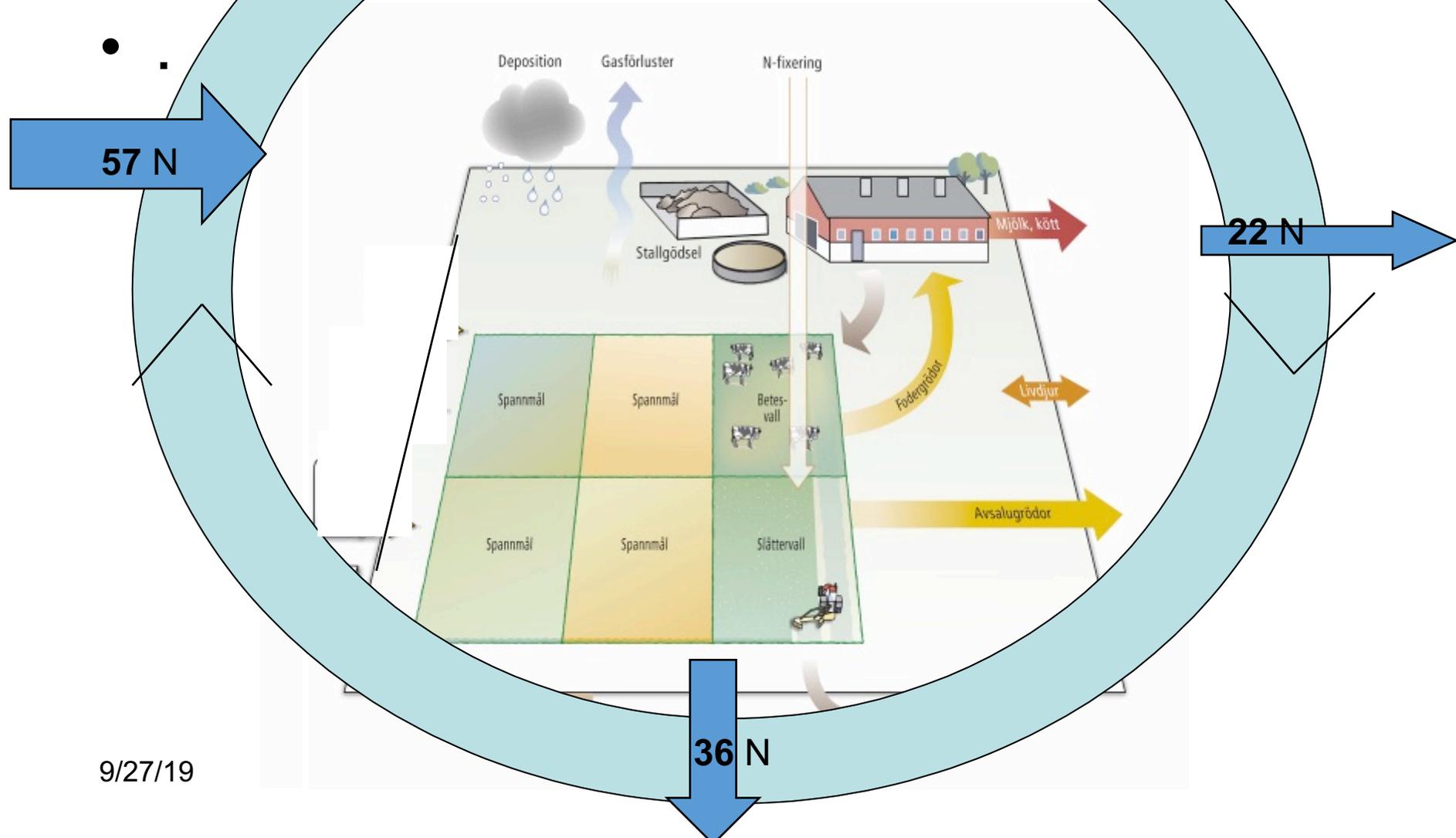
Specialized animal farm

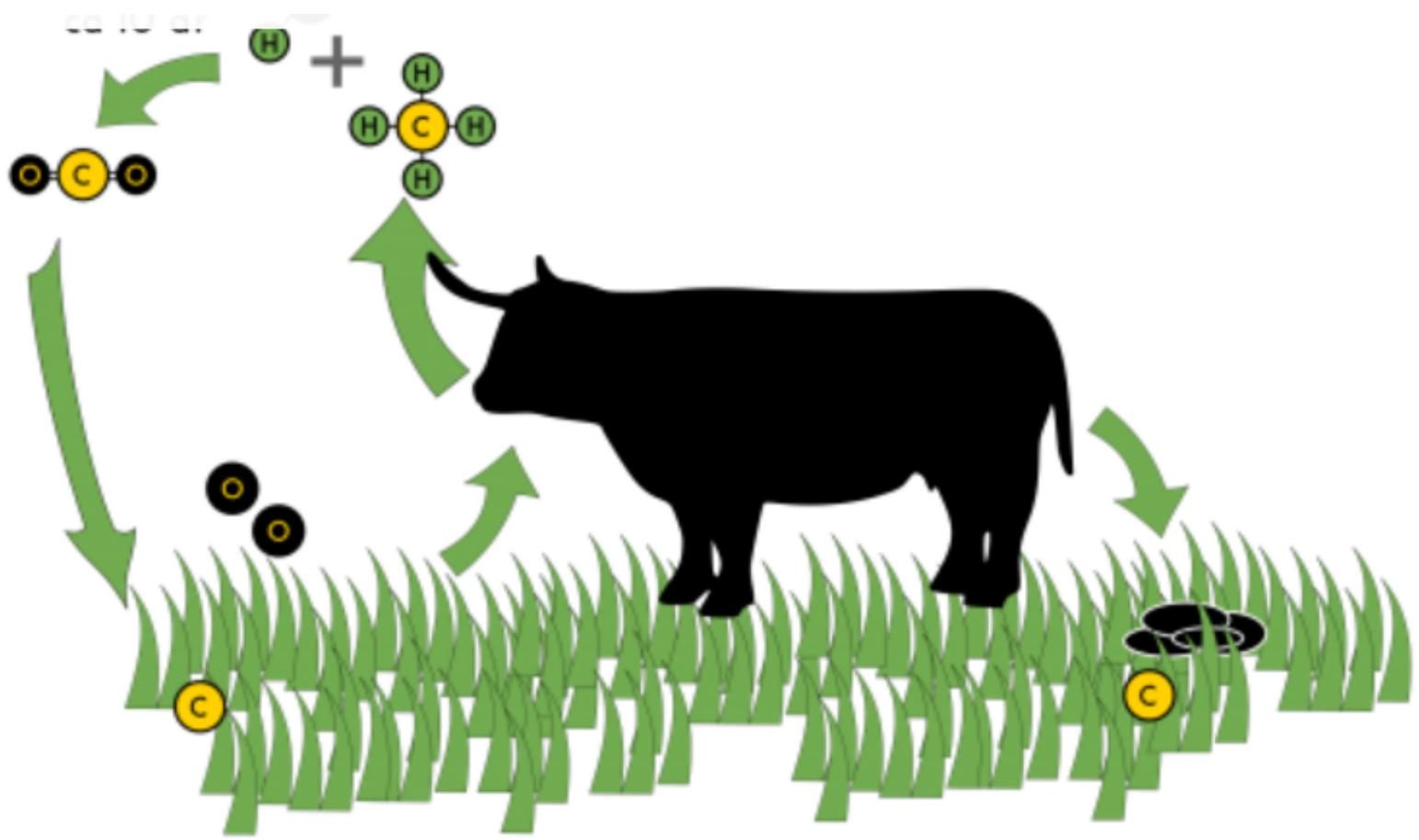
Input, output and surplus of Nitrogen kg/ha and year

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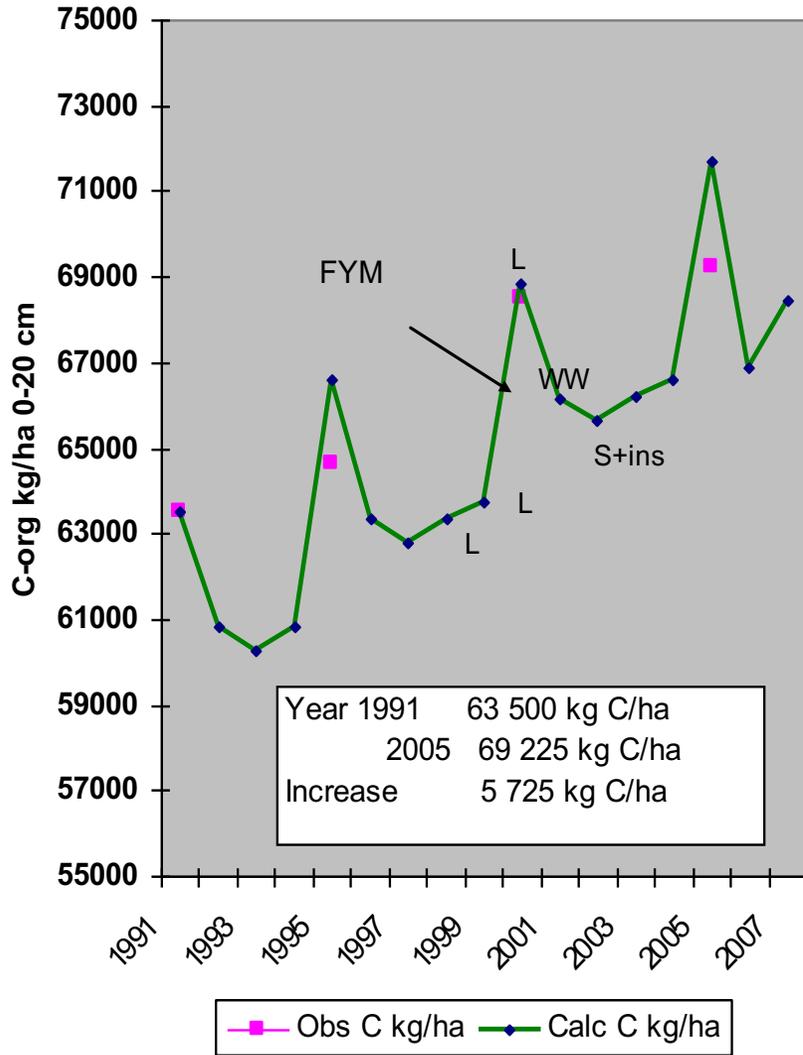
Ecological recycling farm Ytter Eneby – Skilleby



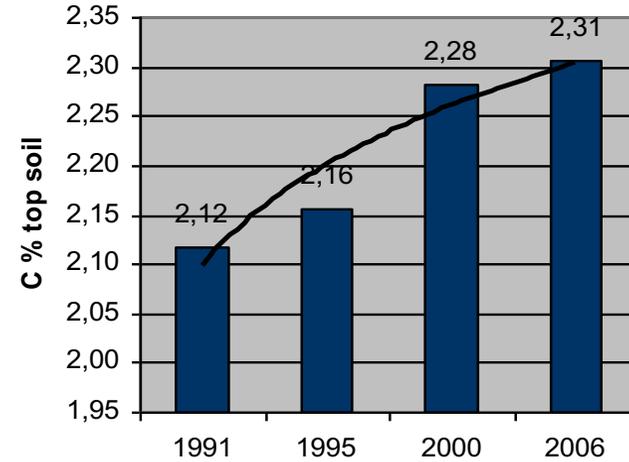




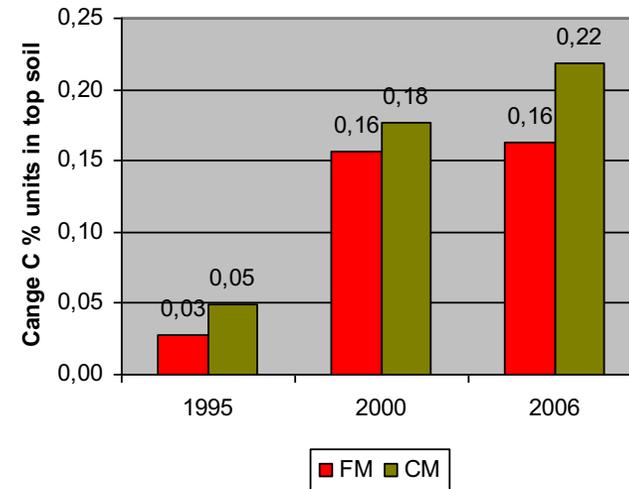
Top soil Organic Carbon HV 1



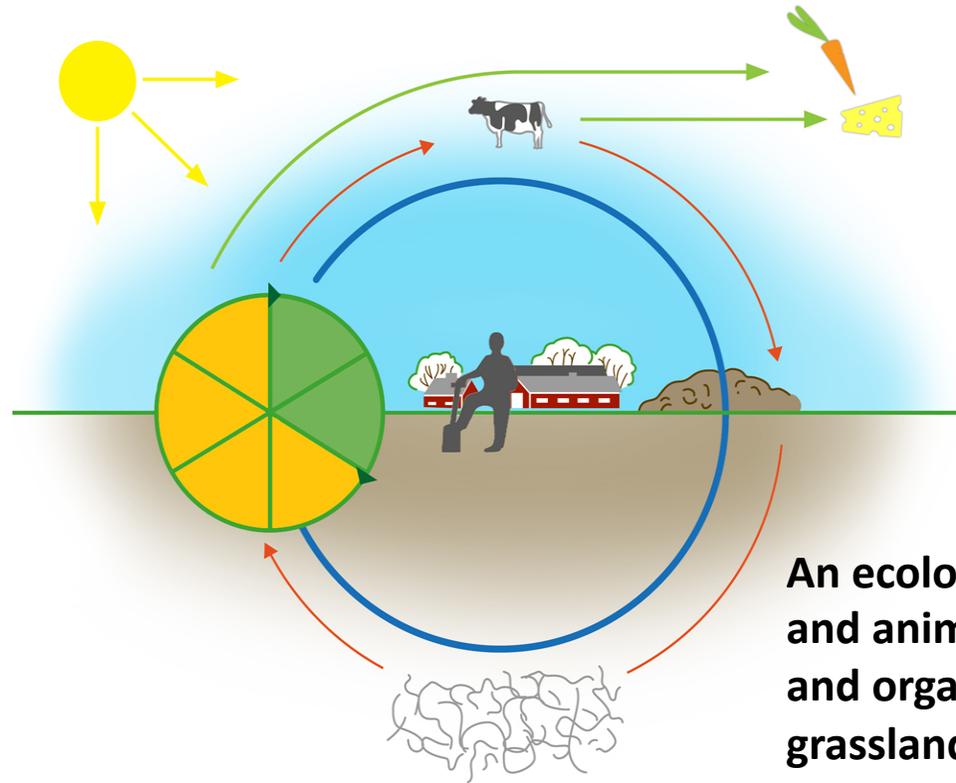
HV I



HV I



Ecological Recycling Agriculture



An ecological recycling agriculture based on integrated crop and animal production with effective recycling of nutrients and organic biomass and crop rotations with legume - grassland

Source: Granstedt, A. 1992. ... *American Journal of Alternative Agriculture*, vol. 6,

- **An ecological recycling agriculture based on integrated crop and animal production with effective recycling of nutrients and organic biomass and crop rotations with legume - grassland can:**
 - 1. conserve basic natural resources**
 - 2. rebuild fertile soils**
 - 3. protect the Sea from N, P and pesticides**
 - 4. reduce the global warming**
 - 5. Improve the food nutritional quality**