

National N budgets

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TATION

What is a national N budget?

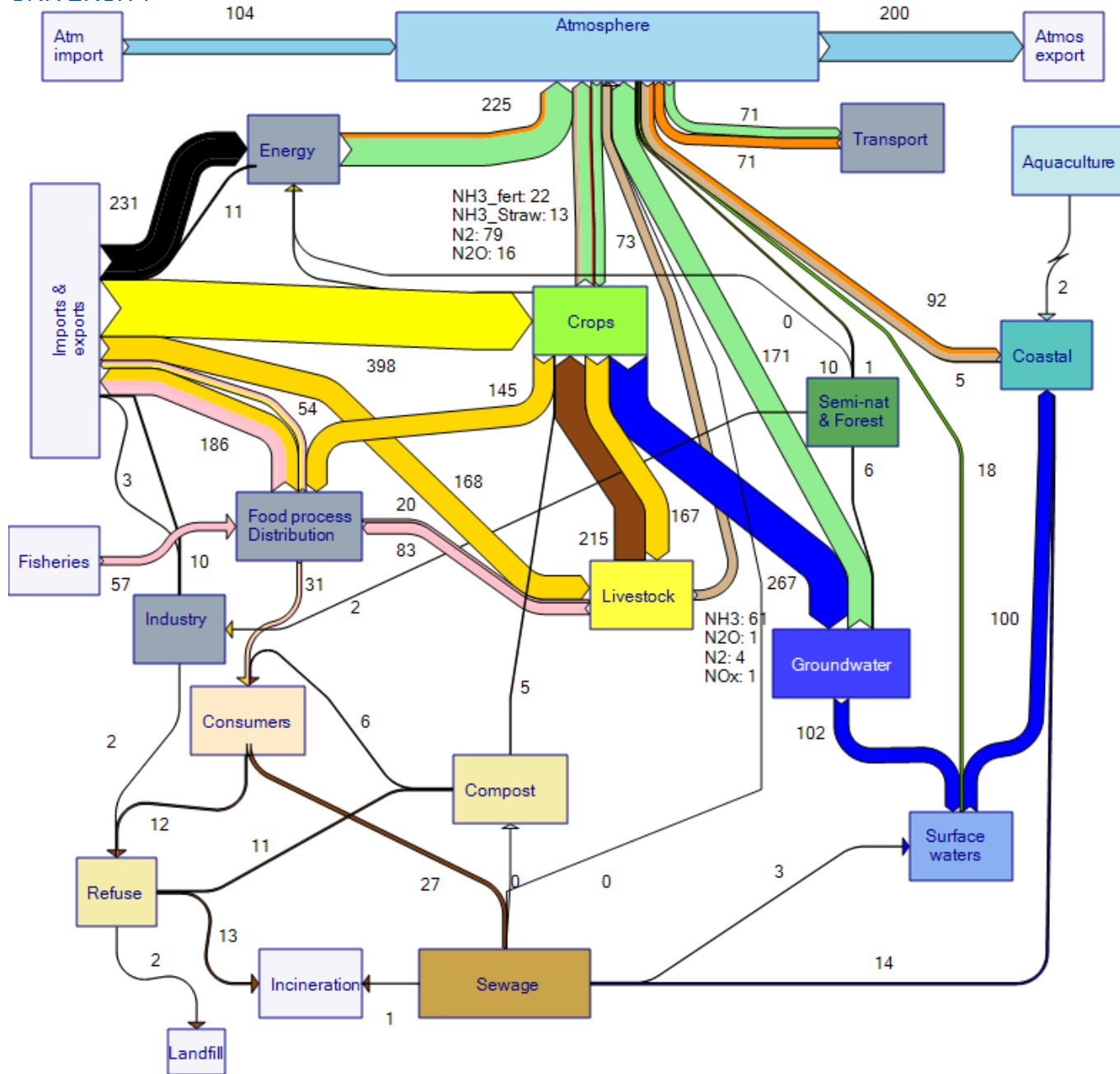
- Quantify N flows
 - Between economic sectors (e.g. industry and consumers)
 - Between the terrestrial, atmospheric and aquatic environments (e.g. atmospheric N deposition)
 - Losses to extra-territorial atmospheric & aquatic environments (e.g. long-range atmospheric transport)
- Temporal resolution
 - Usually estimate annual flows
 - 3 year moving average more reliable

Why are they useful?

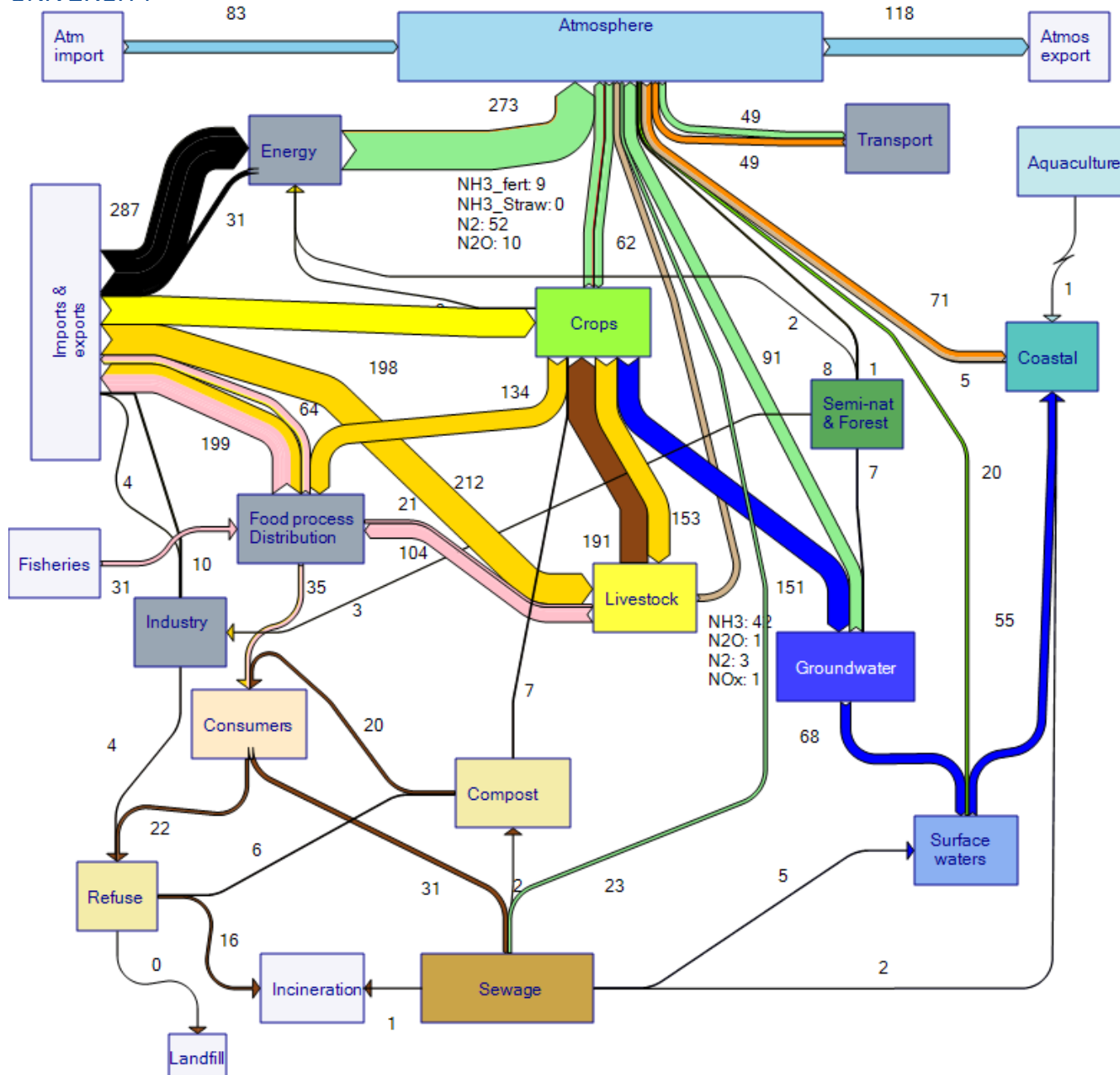
- Identify the major losses
 - Where can efficiencies be improved?
 - Opportunities for recycling
- Identify the major flows
 - Helps determine priorities
- Show that past policy initiatives have worked
 - Encourage further progress

National N budget for Denmark

- Years 1990 to 2010
- Publically-available statistics



1990



2010

Main conclusions

- Agriculture dominates
 - Intensive agricultural systems
 - Largest % of land area dedicated to agriculture in EU
- There have been significant reductions in N losses
 - Nitrate and ammonia
- Livestock production has increased
 - Crop production has decreased
 - More imported animal feed
 - Much less fertiliser
- Much N bypasses consumers (food exports)

Messages for policymakers

- Regulation of agriculture has worked
 - More livestock production + lower N losses
- Increased livestock production = greater feed imports
 - Scope for more feed production in Denmark?
- Worthwhile increasing recycling of domestic waste
 - Small but significant contribution in Denmark
 - Would be larger in other countries

Things to remember

- Agriculture will almost always be significant
 - Dispersed industry, uncertain statistics
 - Uncertainty may be greater than total flow in other sectors
- Difficult to quantify flows from agriculture to aquatic environment
 - Very dependent on geology and pedology
- Closing solid and liquid waste N budgets difficult
 - Will vary a lot between countries
- Quality and quantity of statistics vary with time
 - Newer data not necessarily better than older data

Predicting future N budgets

- Those who cannot remember the past are condemned to repeat it (G Santayana)
- The past is a foreign country: they do things differently there (L.P. Hartley)
- National N budgets contain feedback loops
 - Complicates the prediction of the effect of possible policy initiatives
- Dynamic N budget tool
 - Has promise but needs more development



Thank you