



Understanding the use of physical materials and other resources in societies; their sustainability and the implications for public policy.

Strategic Programme Presentations to Enfor Group/RESAS

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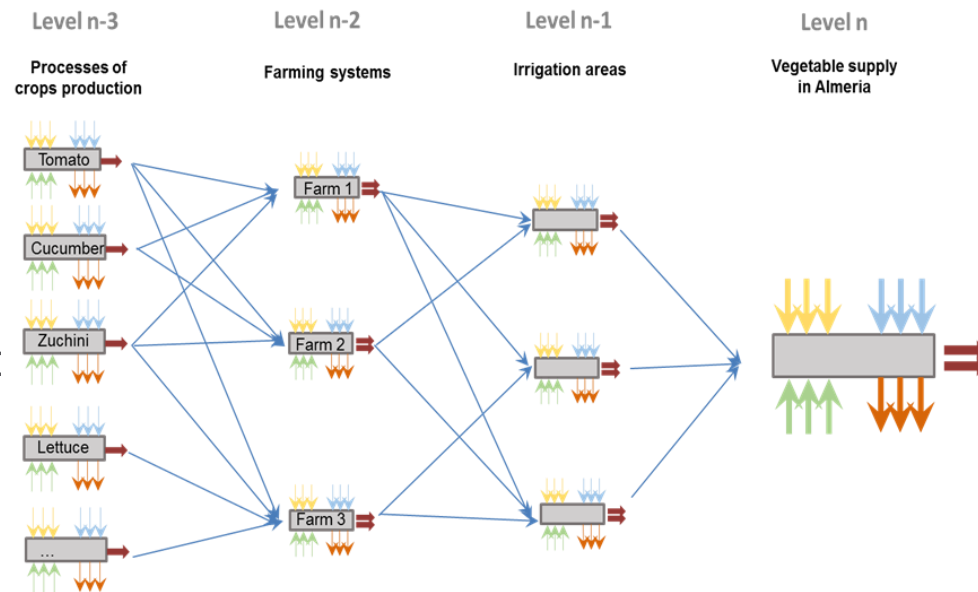
Sustainability assessment – for public policy

- **Sustainability**
 - Remains a key policy narrative
 - Of what, for who, where, for how long?
- **Indicator sets – issues**
 - “Measure what you value”
 - Coherence - commensurability
- **Converting physical things into £’s**
 - Method compatibility
- **Complexity and over-simplification**
 - Pragmatism – “overwhelming systems”
 - Uncertainty
 - Right/better answer to wrong question
 - Policy coherence - nexus
- **Horizon 2020 & SRP**
 - New methods for sustainability assessment
 - Societal Metabolism Accounting
 - Applied to CAP and SDGs.
 - Pan-EU analysis
- www.magic-nexus.eu



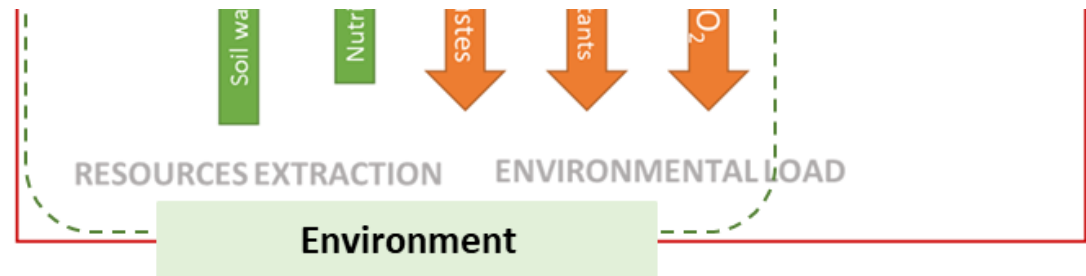
What is societal metabolism accounting?

- Integrating – environment (biosphere) and society (technosphere)
- Framework – “the process”
- Funds and flows
- Extents and intensities
- Link along supply chains or across geographies ➡
- Synthesis - feasibility, viability and desirability



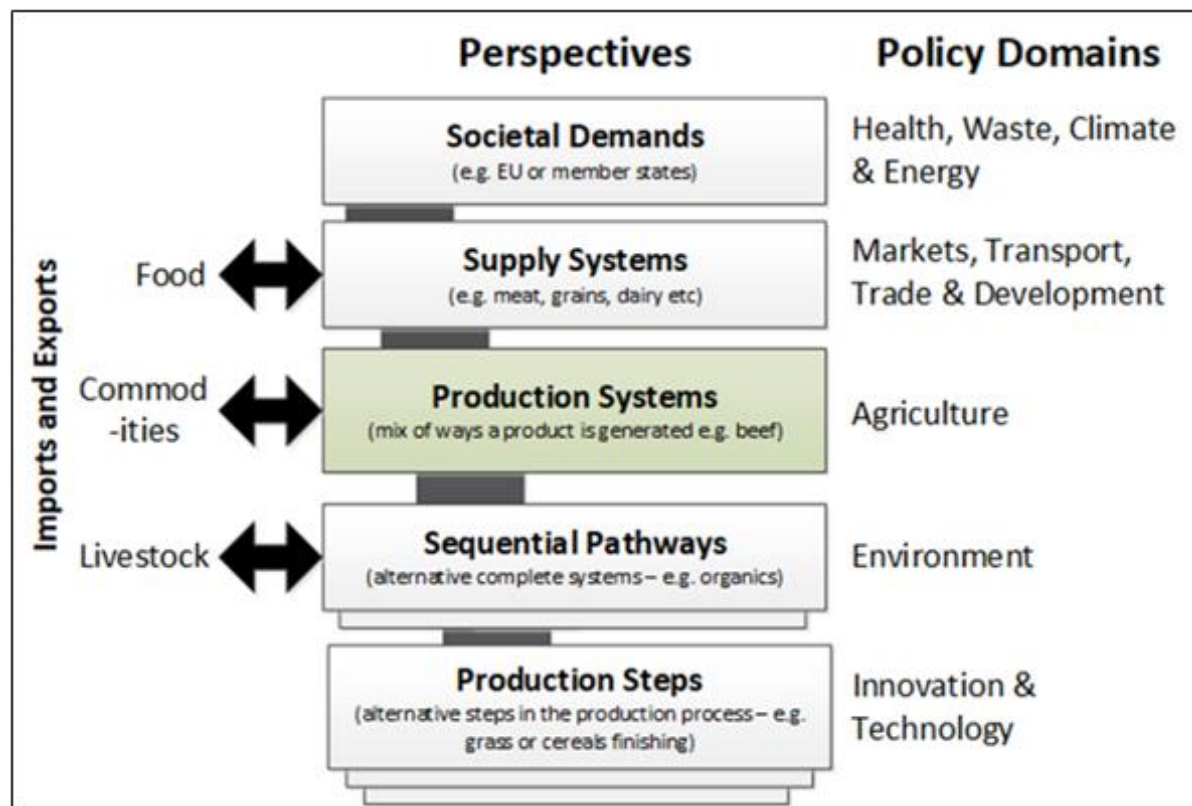
Bottom-up: Determined by lower level characteristics (per unit of land or output)

Top-down: Determined by the compatibility between bottom-up scaling of farming typologies and boundary conditions provided by the socio-economic (viability) and the environmental contexts (feasibility)



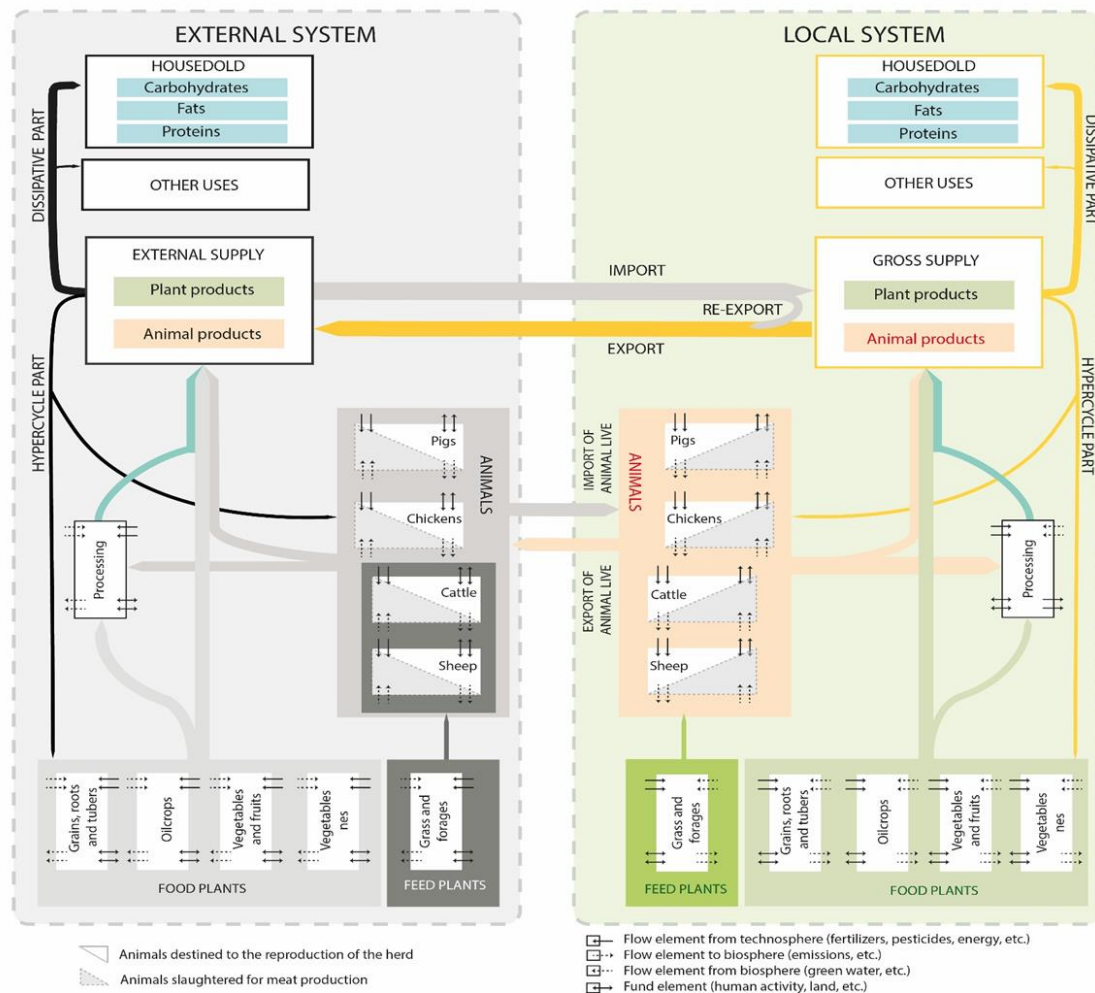
Multi-perspective analysis

- Kinds of systems
- How big is “the system”
- How they interact – grammar
- Cross-scales ➡
- Where we look for solutions
- What gets left out – externalisation



How does it get done ?

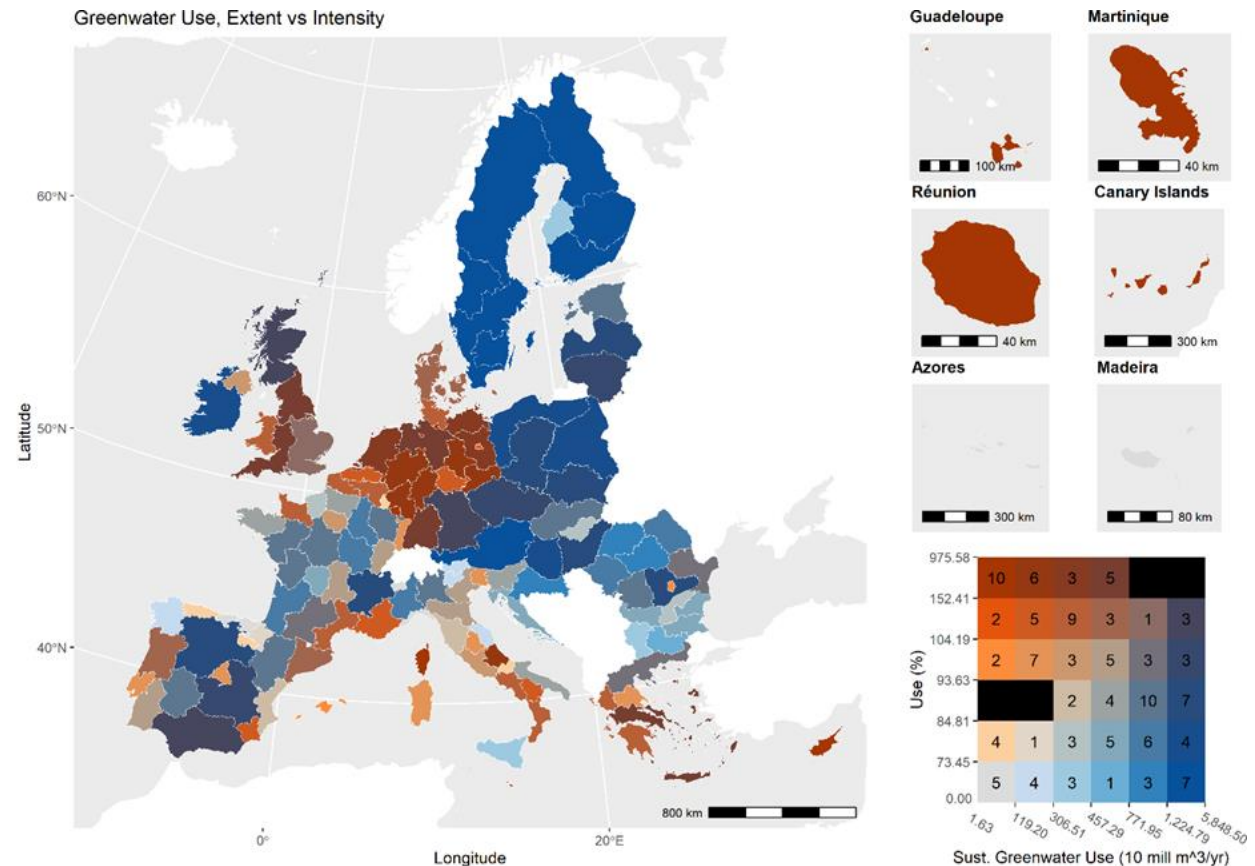
- **Base data** – Farm Accountancy Data Network (Farm Sust. D. N.)
- **Filling the gaps** - sudoku & benchmarks
 - MS to regional disaggregation
 - Livestock diets (from GLEAM)
- **Heroic assumptions**
 - Testable – feasibility
- **Diagnostic and simulation modes**
- **Linking to space**
 - Linking to impacts
 - Visualisation
 - Sense making



Quantifying the pressures and impacts

- Soils, waters, pollinators
- Relationship maps ➡
- Green Water, Quantity, vs. ecological thresholds, not just S. Europe
- Extent and intensity
- vs. CAP spend

<http://www.magic-nexus.eu/documents/d55-report-narratives-behind-cap>

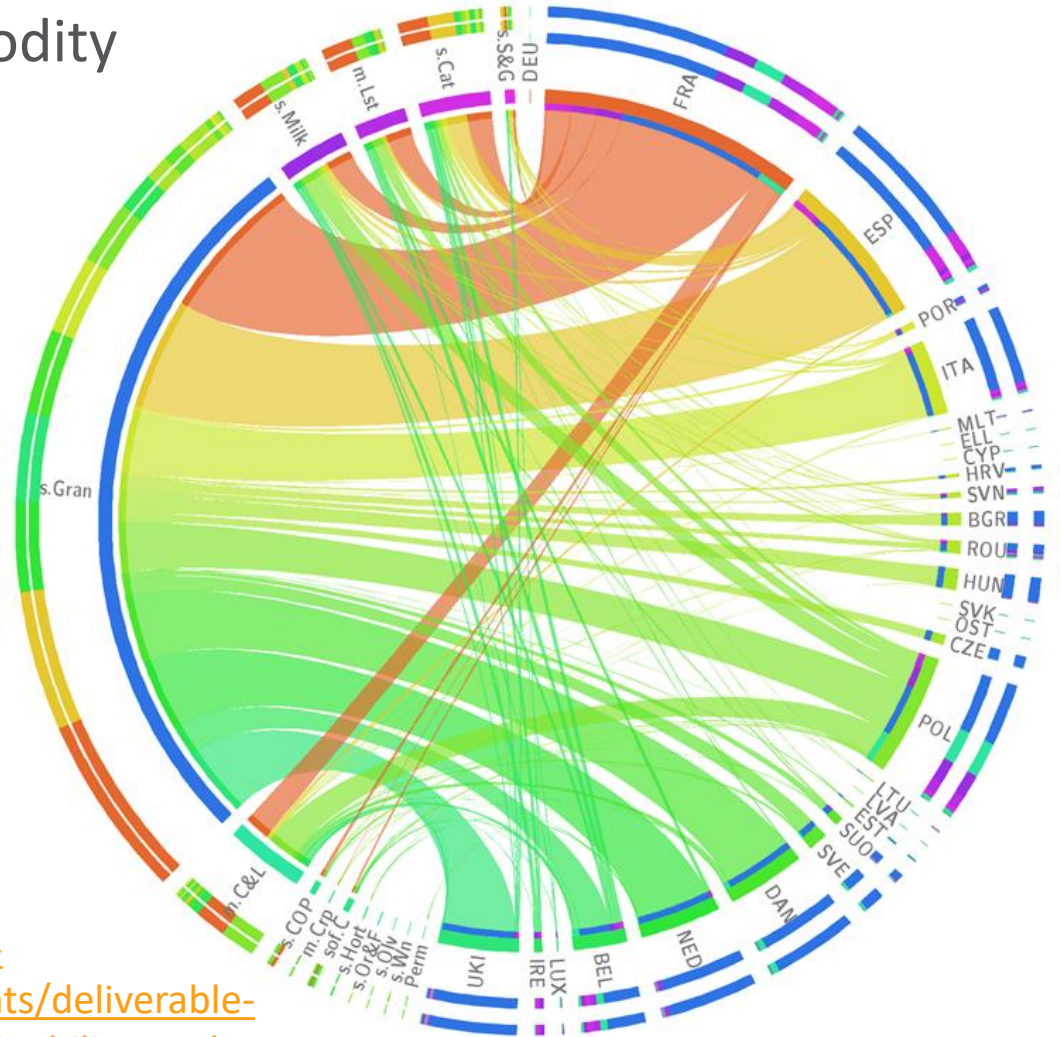


Schyns, J.F., et al. 2019. Limits to the world's green water resources for food, feed, fiber, timber, and bioenergy. [Proceedings of the National Academy of Sciences](#) **116**, 4893-4898.



Trade and the sustainability mirage

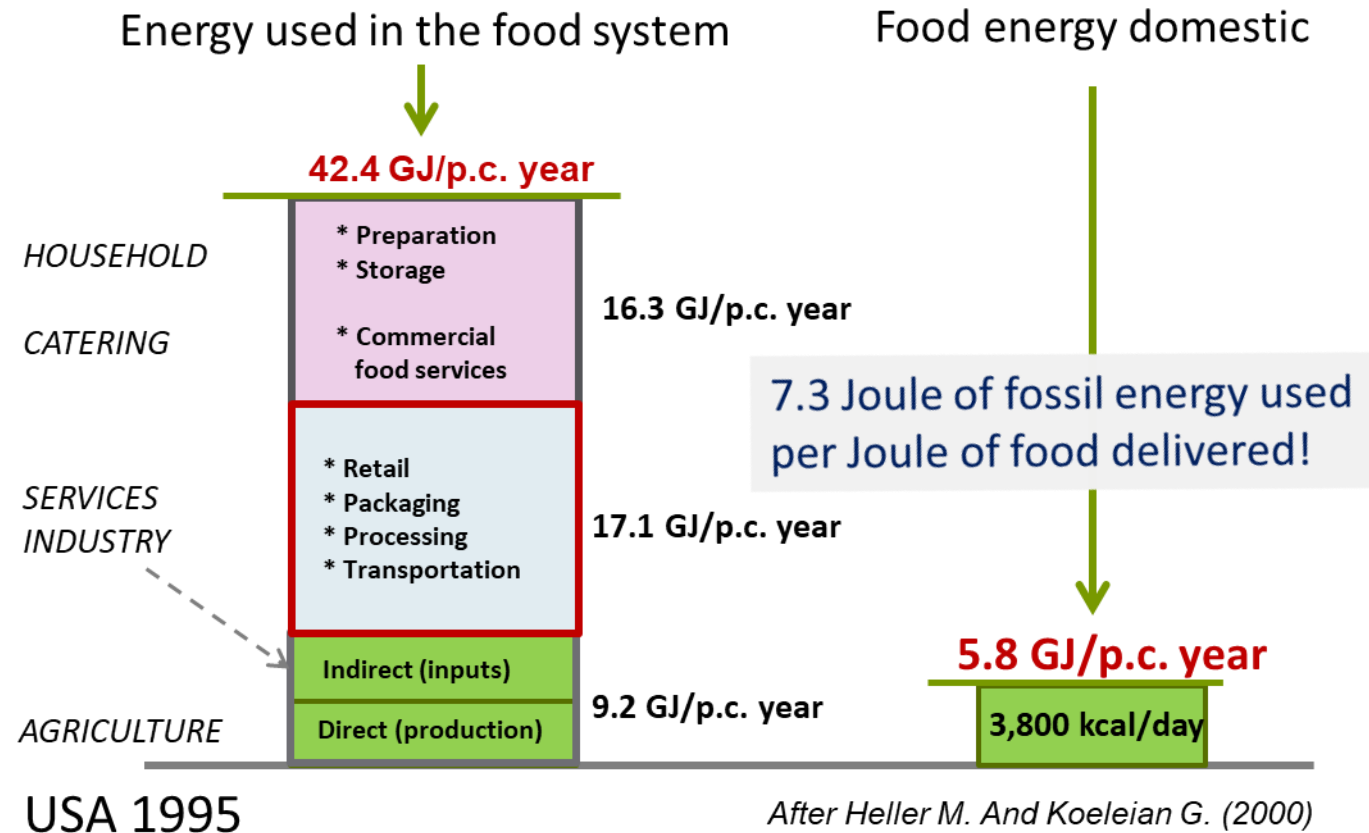
- Imports to EU by commodity group ➡
- Animal feed, palm oil, sugar ➡
- Rain forest and savannah loss
- GHG accounting
- Social progress – SDG's
- Reinternalisation
- Security



<http://www.magic-nexus.eu/documents/deliverable-51-report-eu-sustainability-goals>

From agriculture to food systems

- Looking wider
- Food/Diet
- Health
- Energy
- Circular economy



<http://www.magic-nexus.eu/documents/d54-report-narratives-behind-energy-directives>

<http://www.magic-nexus.eu/documents/d57-report-narratives-behind-circular-economy-concept>



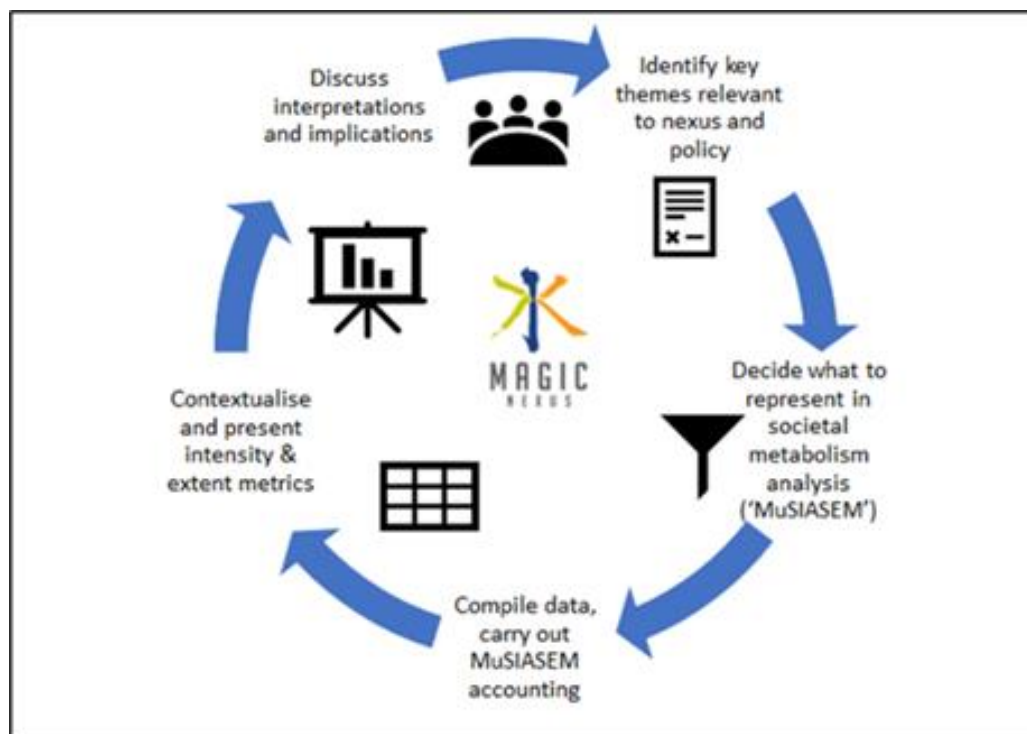
Challenges

- **Technical** – data sources & integration issues.
- **Analytical** – what can be said – uncertainty.
- **Procedural** – how to conduct the work.
- **Institutional** – how the analysis is used.

“...the place of scientific evidence in policy-making is neither straightforward nor guaranteed...”

Peter Gluckman et al.

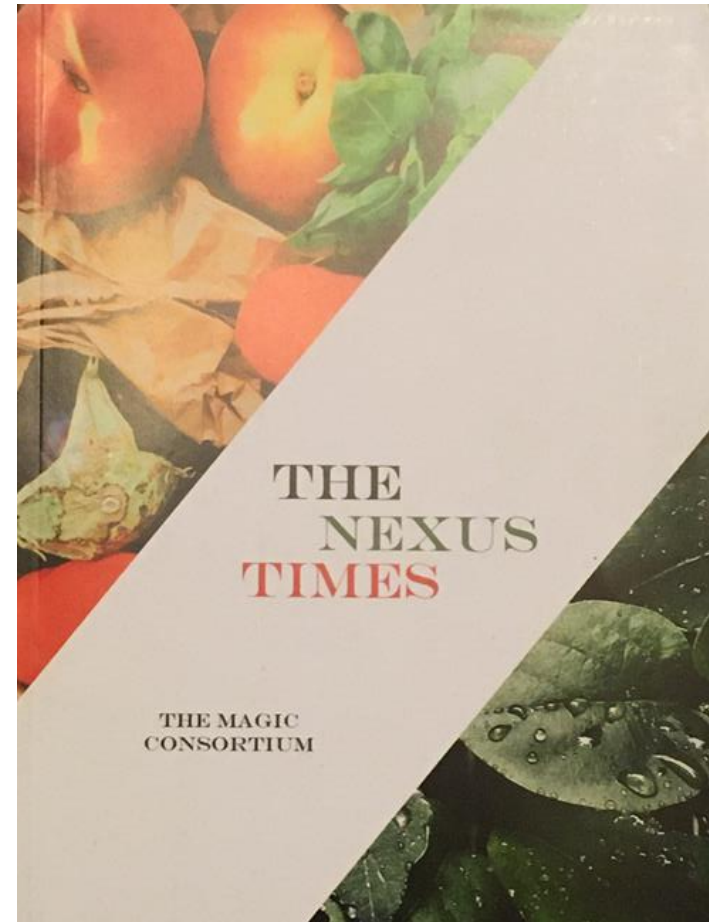
Science 02 Sep 2016:
Vol. 353, Issue 6303, pp. 969
DOI: 10.1126/science.aai8837



http://www.magic-nexus.eu/documents-repository?field_document_type_tid=100&sort_by=published_at&Apply=Apply

Opportunities

- Nexus Times book
- EEA – Water and Agriculture Report
- Current SRP – exploiting MAGIC results
- Macaulay Development Trust Fellowship (bid)
- Follow up Horizon Europe project(s)
 - Green Deal
 - Farm to Fork Strategy
 - Agriculture and Environment policies



<http://www.magic-nexus.eu/nexus-times>



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The H2020 MAGIC project – www.magic-nexus.eu

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