



Valueflows

REA accounting for the climate

<https://valueflo.ws>

REA Ontology

REA stands for **Resources**, **Events**, **Agents**.

It started out as an enterprise accounting model but has developed into an overall economic model for networks.

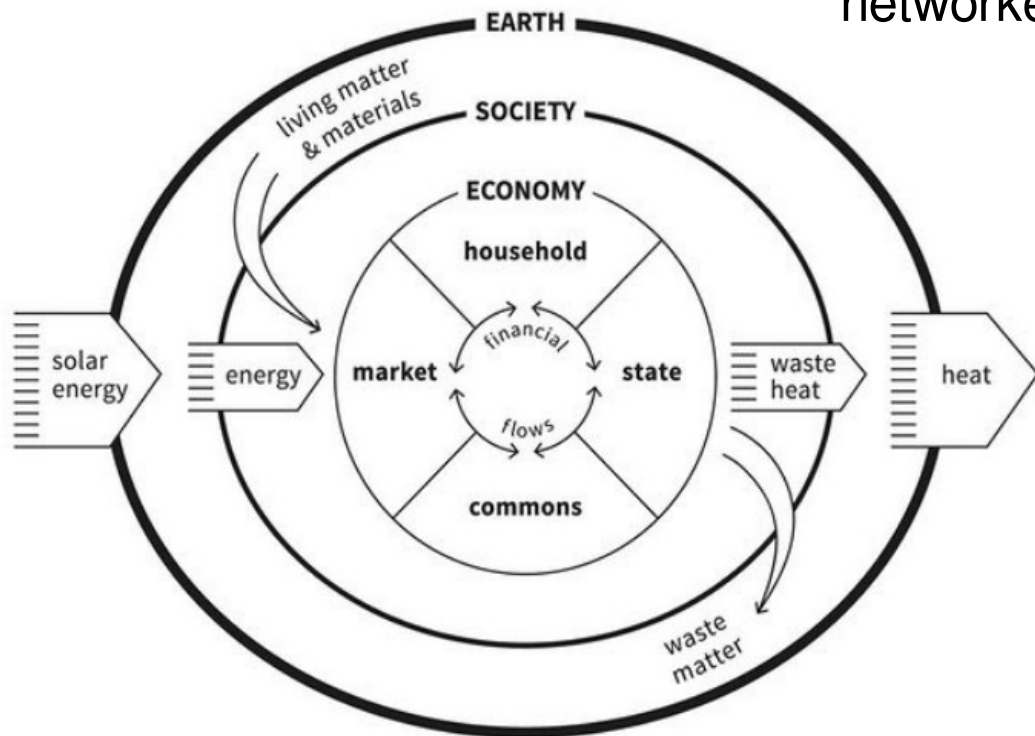
The traditional double entry accounting ($\text{Assets} - \text{Liabilities} = \text{Owner Equity}$) model does not work for networks, because a network does not have a singular ownership.

The REA economic model does work.

Climate accounting for the earth's networks of resource flows needs REA or something like it.

Valueflows

Value Flows is a set of common open vocabularies based on REA. It describes **flows of economic resources of all kinds** within networked economic ecosystems.



But it works for everything in this version of Kate Raworth's doughnut model, not just the Economy circle.

And it's a lot easier to record and analyze all these circles of resource flows with a common vocabulary.

REA core definitions

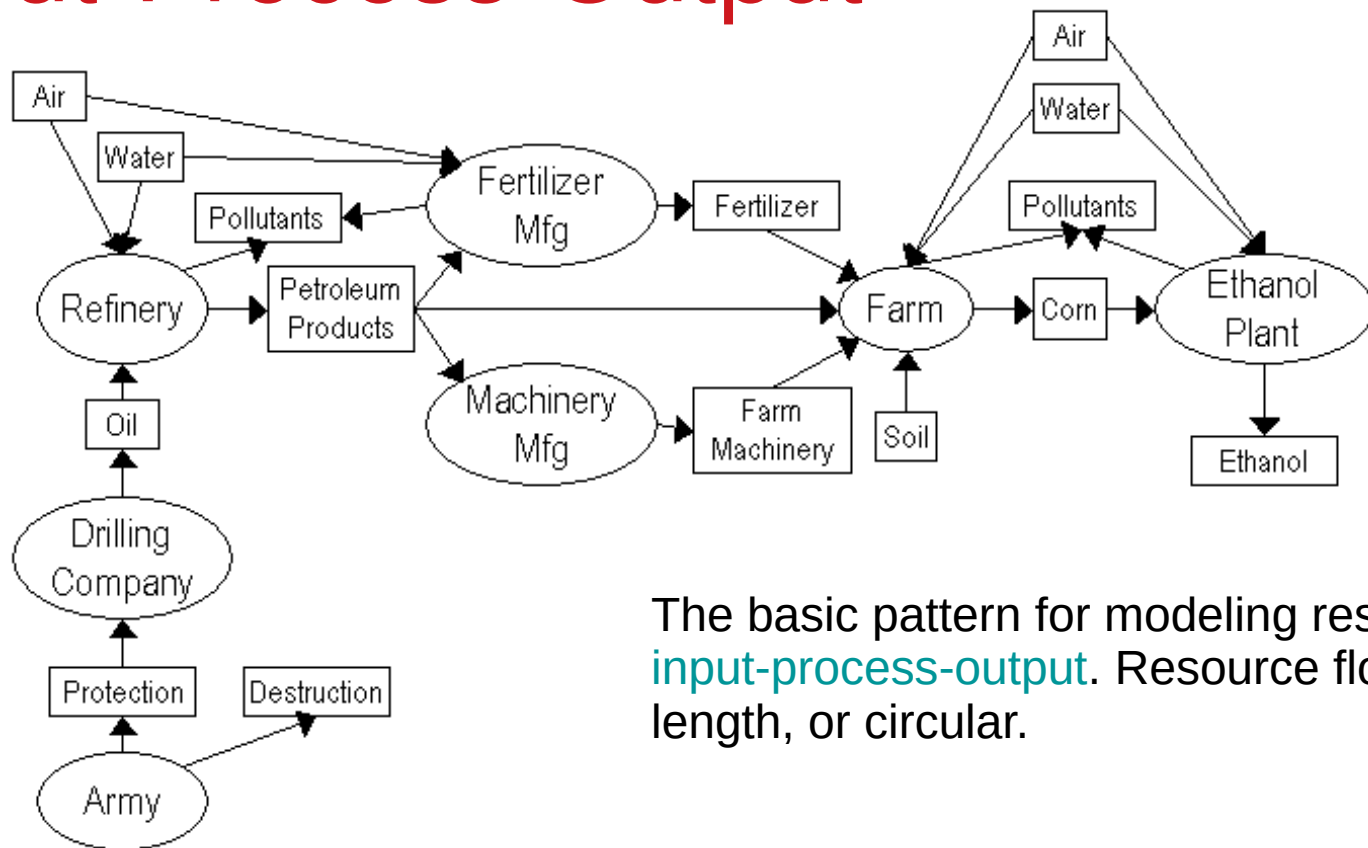
Agents are Economic Agents, who perform Economic Events affecting Economic Resources. Agents can be individual persons or organizations.... or ecological agents?

An Economic **Event** can take actions like create, change, consume, use, or destroy Economic Resources, or transfer them from one Agent to another, or transport them from one place to another.

Economic **Resources** could be

- Useful goods and services
- Money, tokens, credits
- Energy
- Labor power, skills
- Pollutants, CO₂, methane, heat
- Air, water, soil microbiota

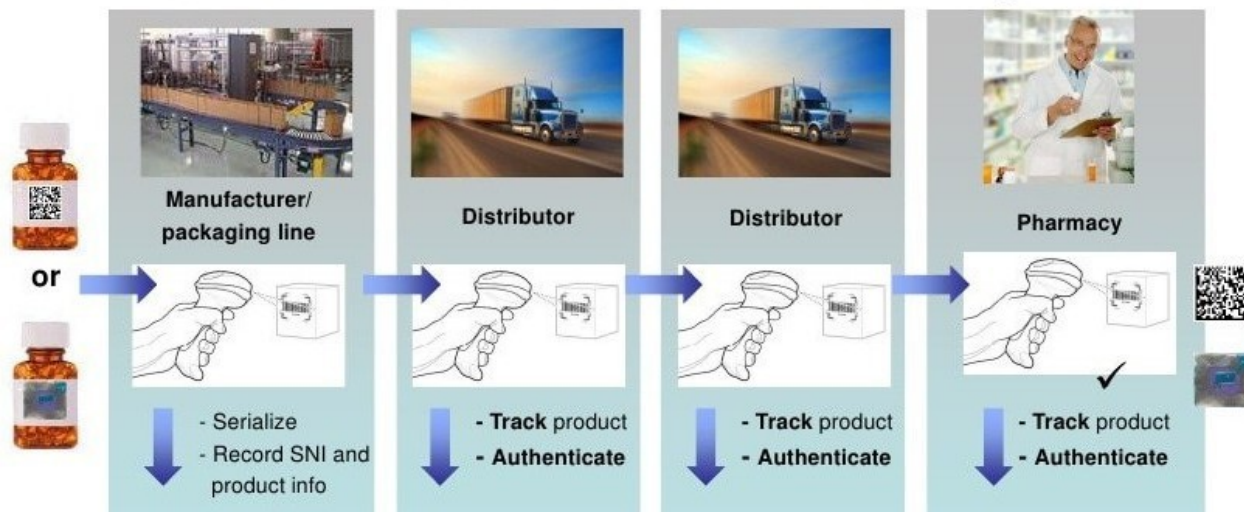
Input-Process-Output



The basic pattern for modeling resource flows is **input-process-output**. Resource flows can be of any length, or circular.

Track and trace

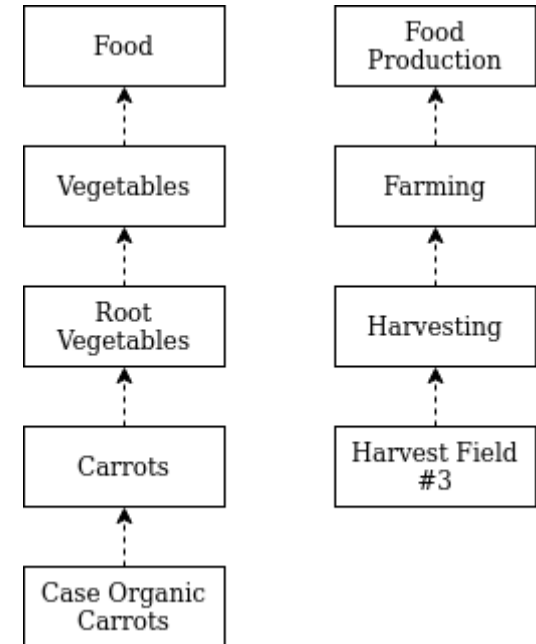
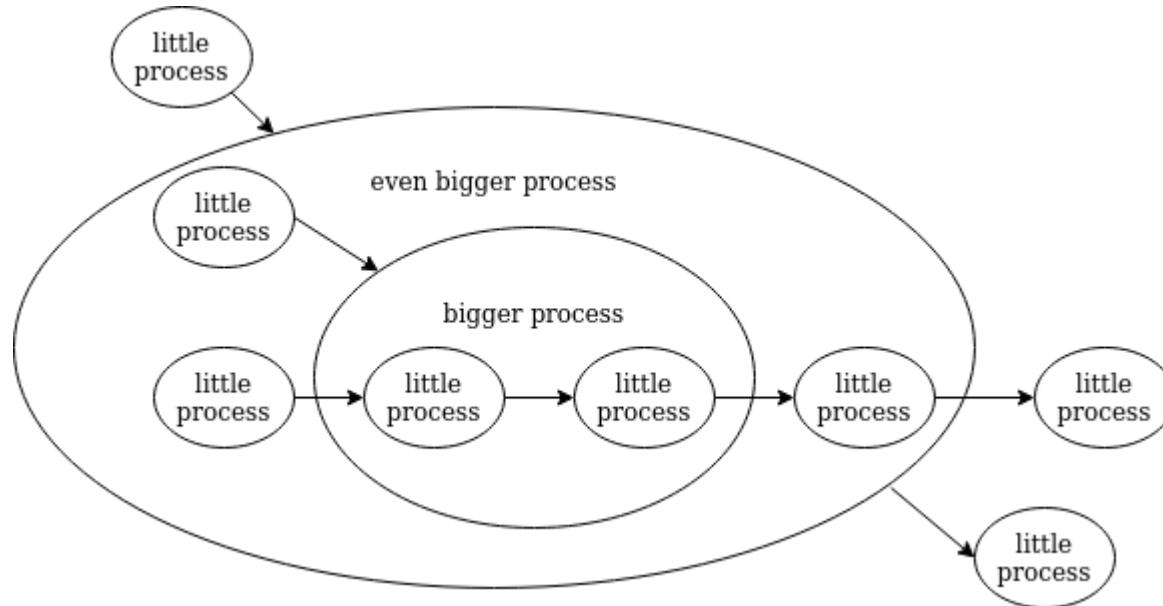
Resource flows can be **traced and tracked**, to see the whole history of a resource, or what happened to a resource after it was produced.



Material Passport. Drawing on feature of multiple signature aggregation, Reflow can be used to implement a material passport for circular economy applications to maintain the genealogy of a specific product, providing authenticated information about the whole set of actors, tools, collaborations, agreements, efforts and energy involved in its production, transportation and disposal.

[Dyne.org, 2020]

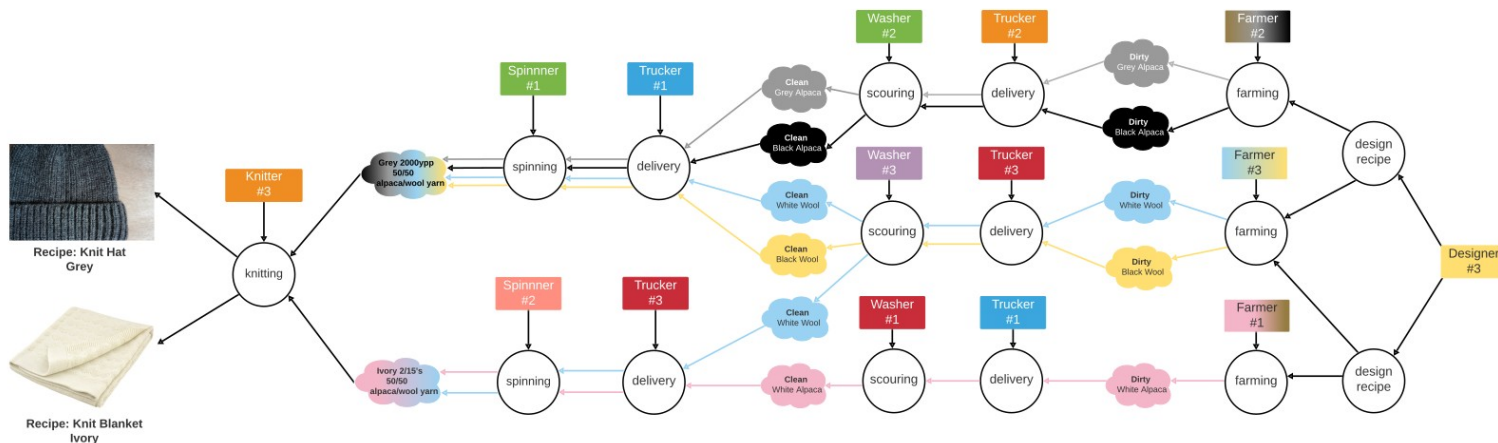
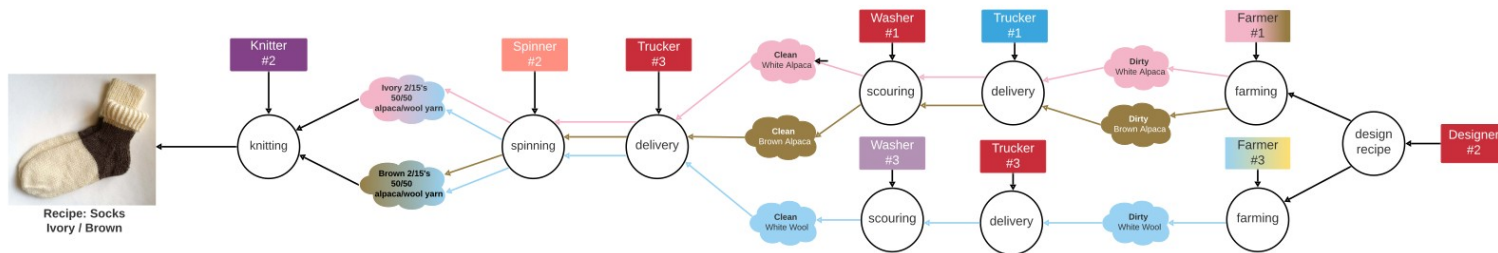
This works at different levels...



Operations: supply chain



“New York Textile Lab designs yarns and textiles. The fibers we use are grown on healthy, climate beneficial soil within our region, and we partner with mills and manufacturers that are local, transparent, and ethical.”



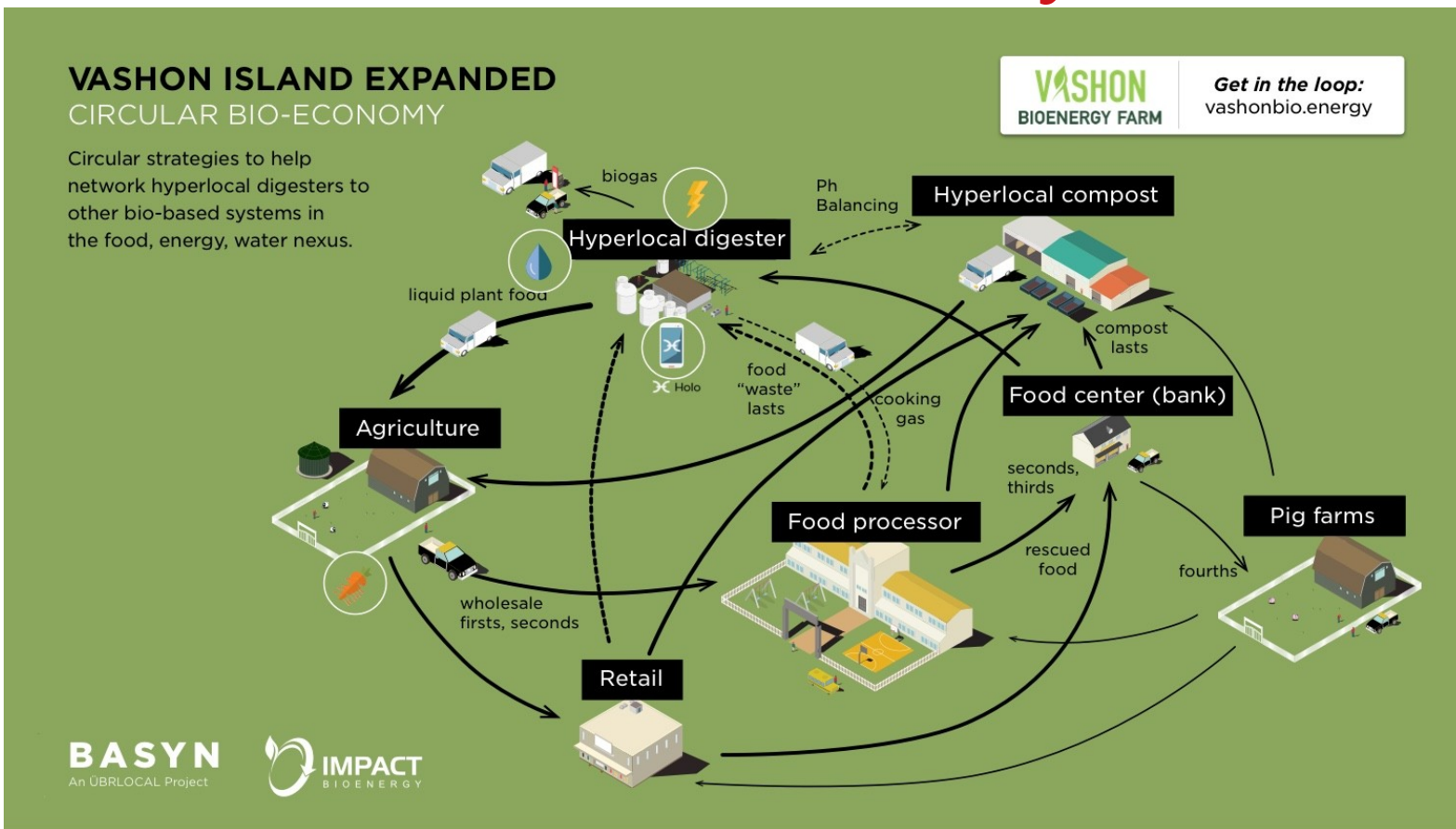
Operations: supply chain

NY Textile Lab is one network of Fibershed.

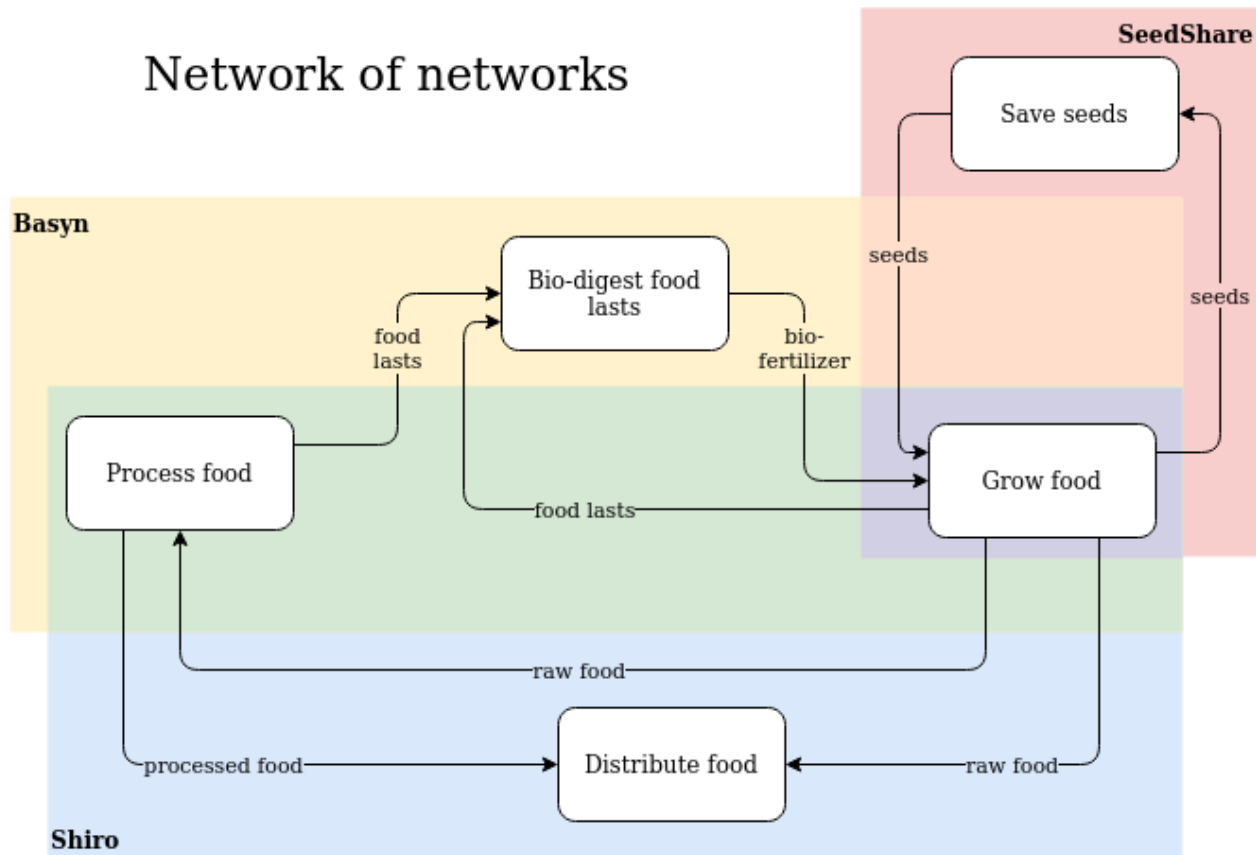
“We are a network of farmers, ranchers, land-managers, designers, ecologists, sewers, knitters, felters, and natural dyers, spinners and mill operators that have defined a strategic geography to work and create within. We develop regional fiber systems that build soil & protect the health of our biosphere.”



Operations: circular economy

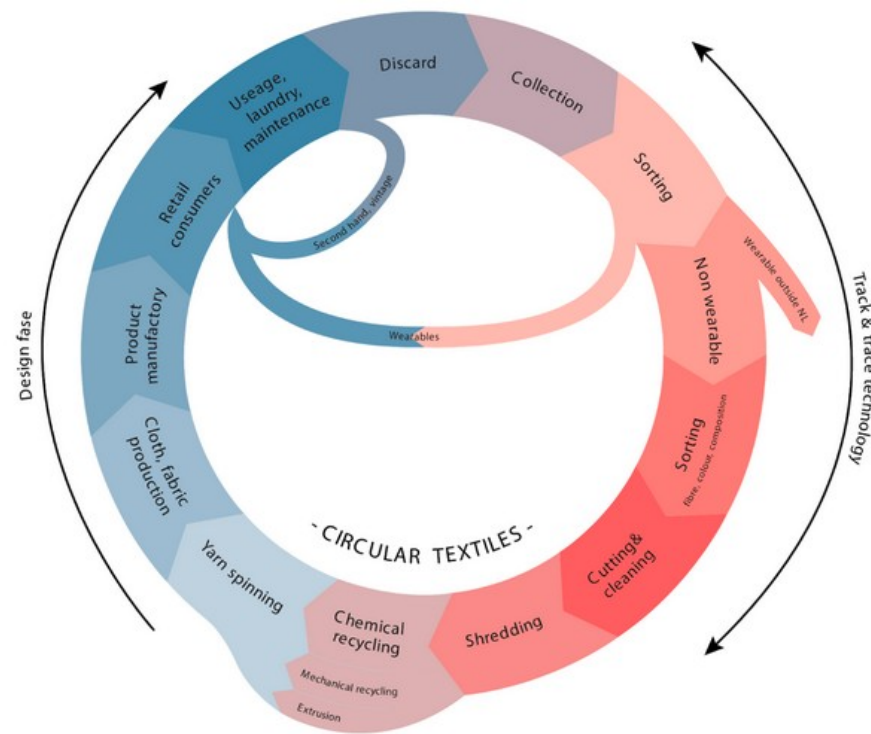
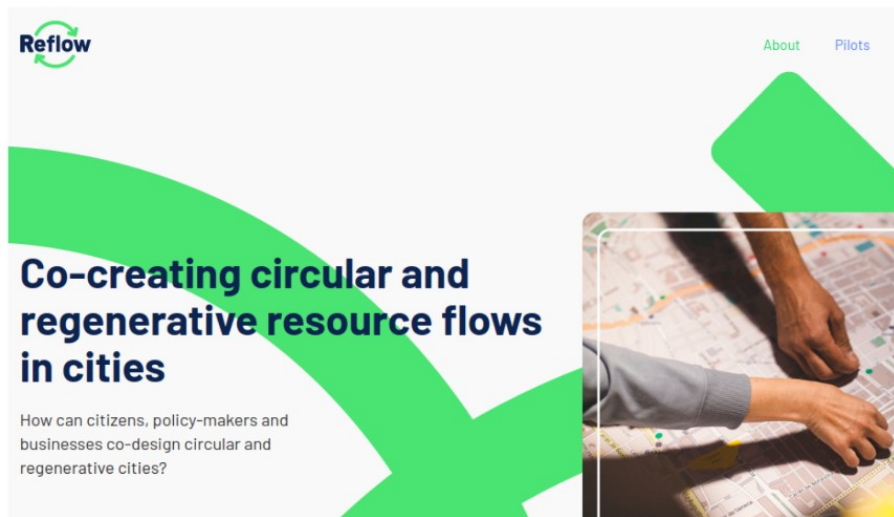


Operations: networks of networks



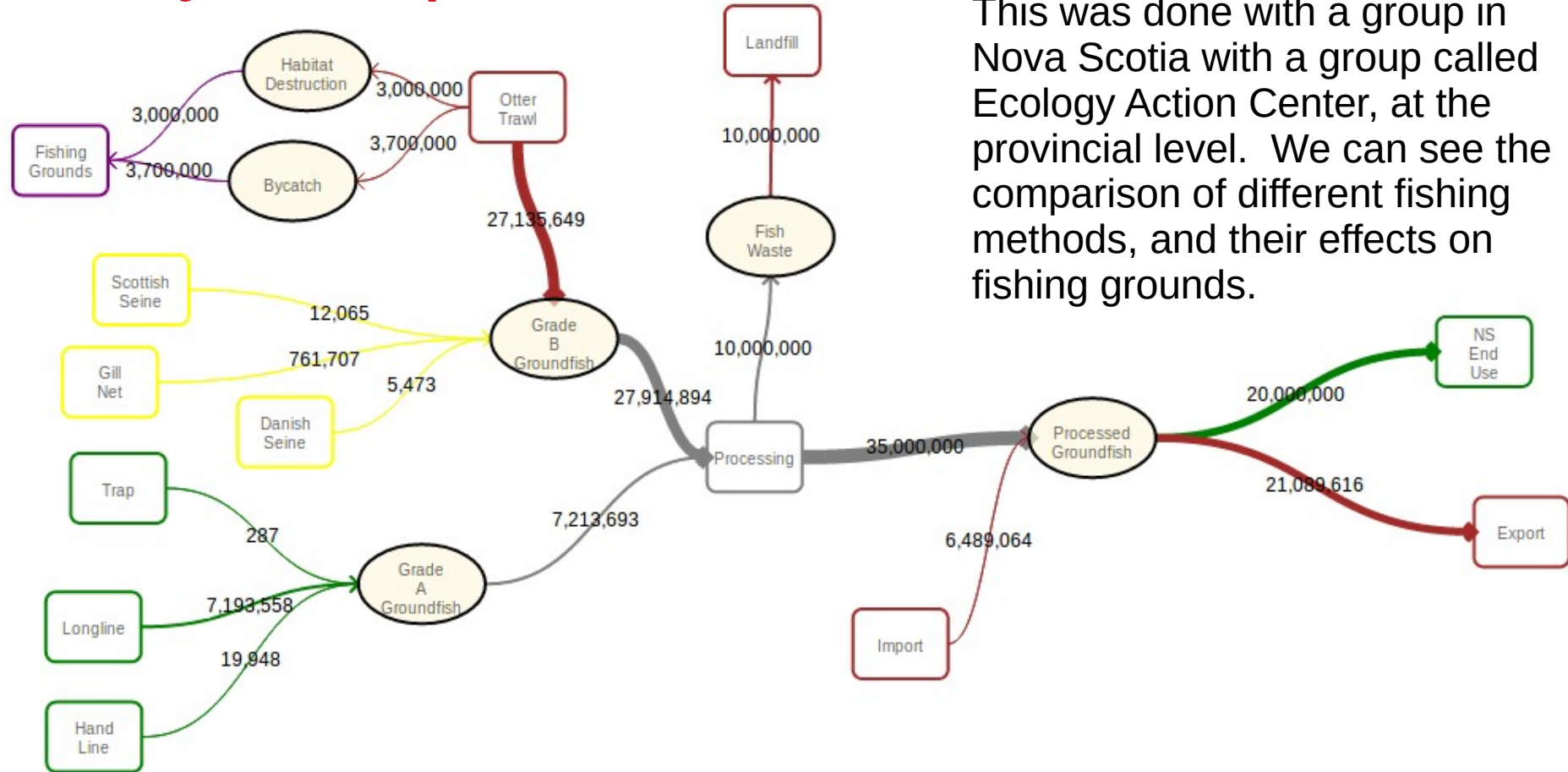
Operations: municipal

Reflow is a project in process that is using Valueflows for municipality-wide circular economy projects in Europe.



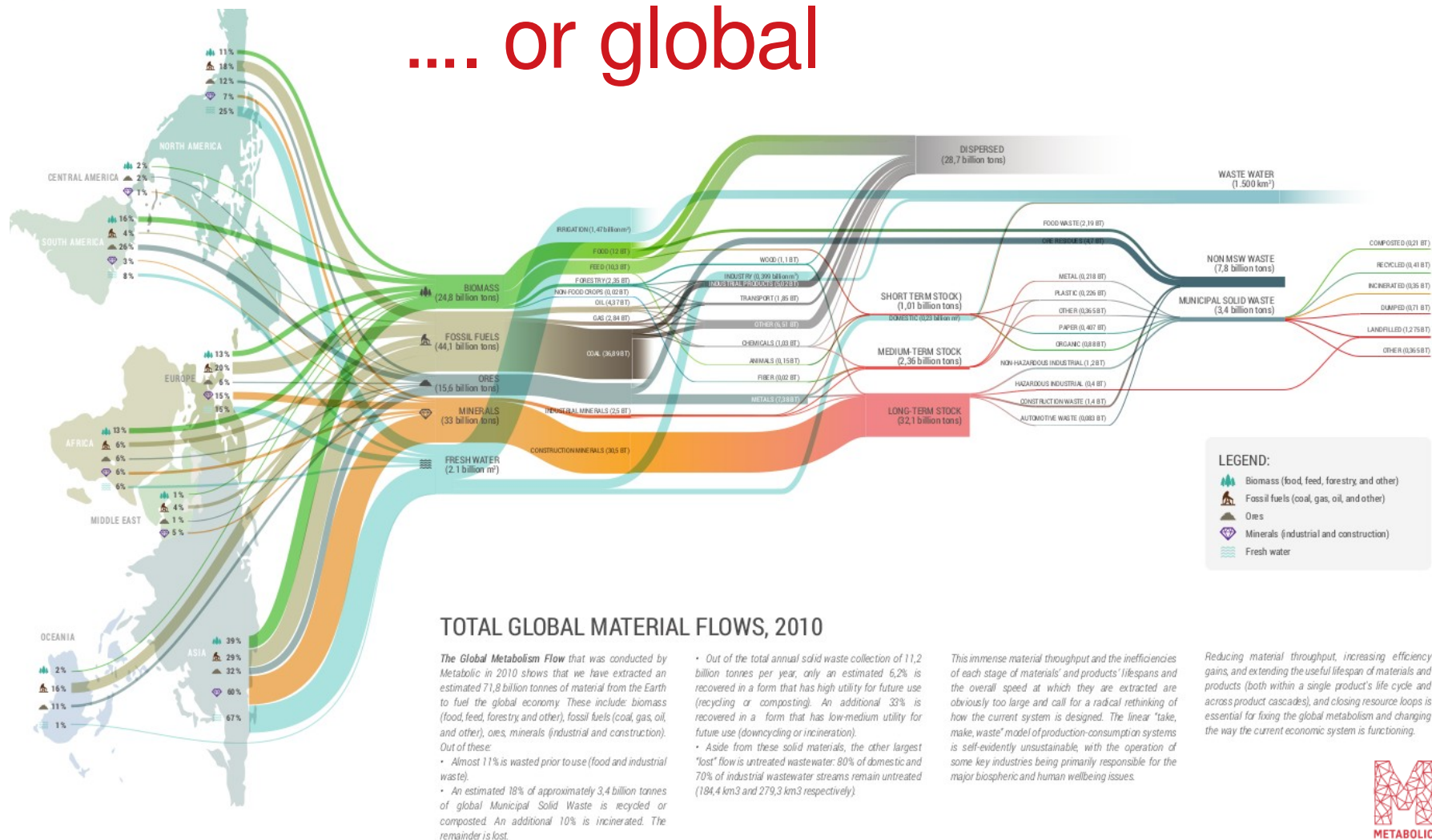
Industries include wastewater heat, food market, textiles, plastics, energy monitoring, event construction.

Analytical: provincial

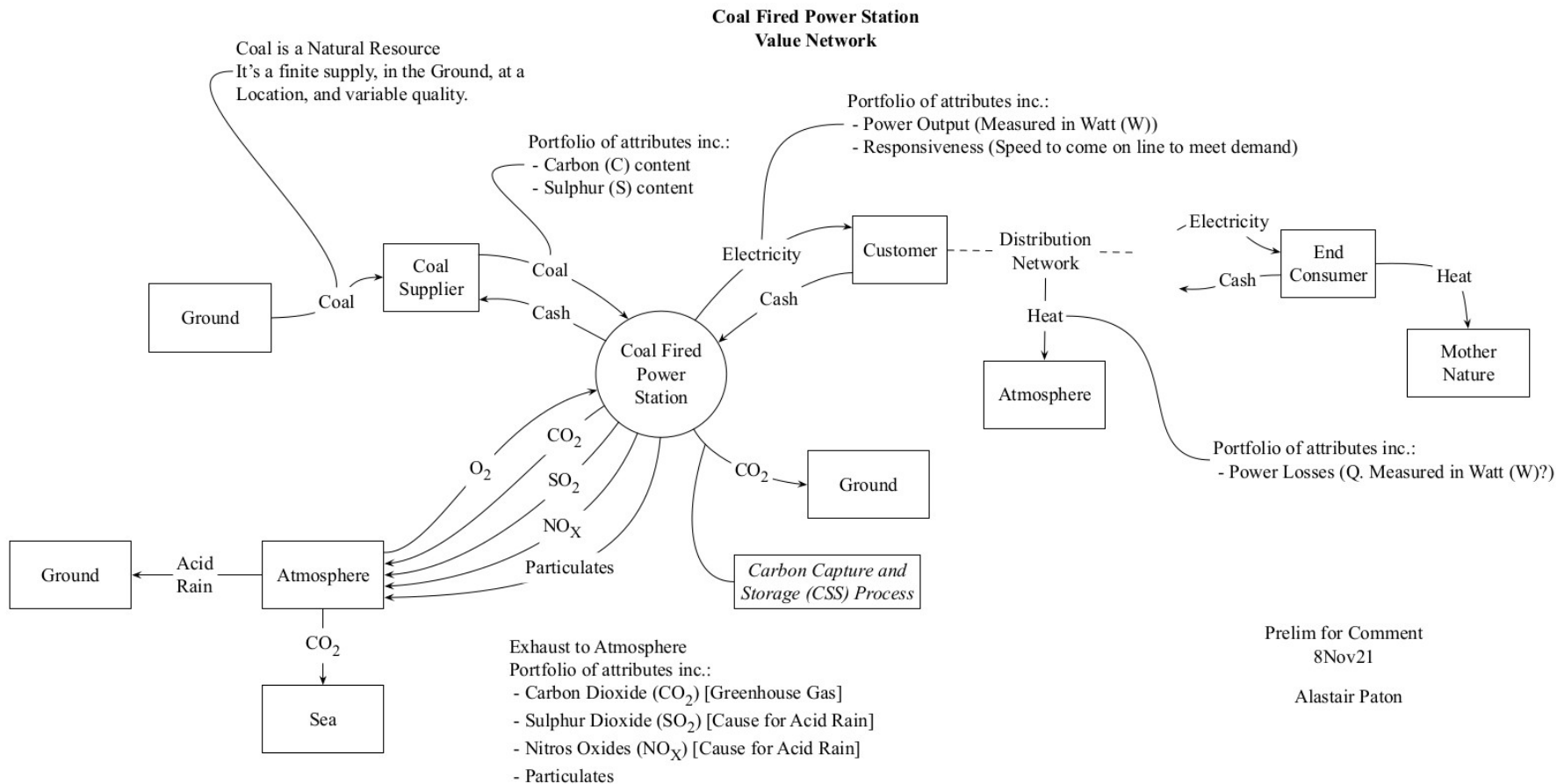


This was done with a group in Nova Scotia with a group called Ecology Action Center, at the provincial level. We can see the comparison of different fishing methods, and their effects on fishing grounds.

.... or global



Current discussion



Prelim for Comment
8Nov21

Alastair Paton

Accounting without resource flows

If continuous resource flow data is not available, accounting can be done by aggregating economic (and ecological) events.

Since events are what affect resources, including “externalities”, if anything resembling event data is available, so is much of the accounting data, and can be “sliced and diced” by organization, location, type of event, type of resource, or whatever is available.

Links and references

Value Flows documentation: <http://valueflo.ws>

Many REA links: <https://valueflo.ws/appendix/rea.html>

Kate Raworth's doughnut: <https://www.kateraworth.com/>

Nova Scotia fish project: <http://locecon.org/nova-story/>

Reflow: <https://reflowproject.eu/>

Dyne: <https://www.dyne.org/>

Metabolic: <https://www.metabolic.nl/>

NY Textile Lab: <https://www.newyorktextilelab.com/>

Fibershed: <https://fibershed.org/>

Basyn: <https://www.youtube.com/watch?v=08OPo6zWdlw&t=1s>

Shiro: <https://shirocoop.xyz/>

Seedshare: <https://www.hypergroove.org/seedshare>