
A Framework for Evaluating Carbon Footprint Tools

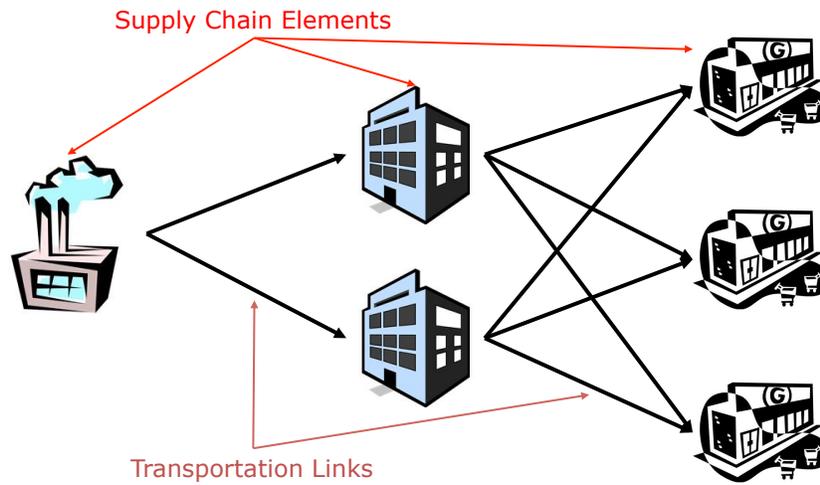
The Carbon Footprint of Freight: Tools & Methods
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Cambridge, MA

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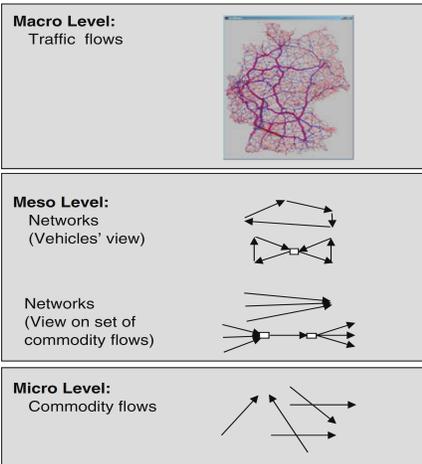
Agenda

- Network view of supply chains
- Programs, methodologies, and tools
- Carbon accounting systems
- Criteria for evaluating tools

Supply Chain Network View



Logical vs. Physical Network

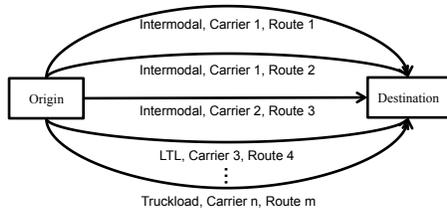


Physical network



Logical network

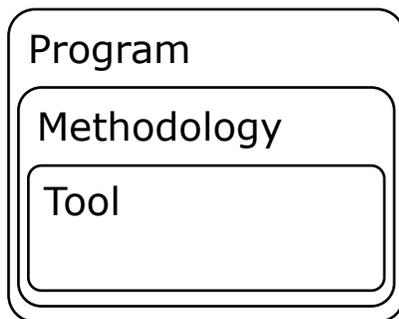
Constructing the Virtual Network



- Each link represents a possible route
- Potentially large number of links
- Carbon calculated for each link

How do we determine which links should be included?

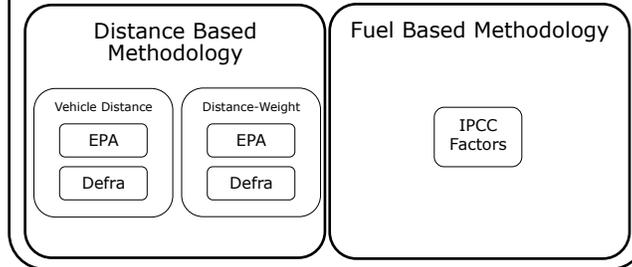
Programs, Methodologies, and Tools



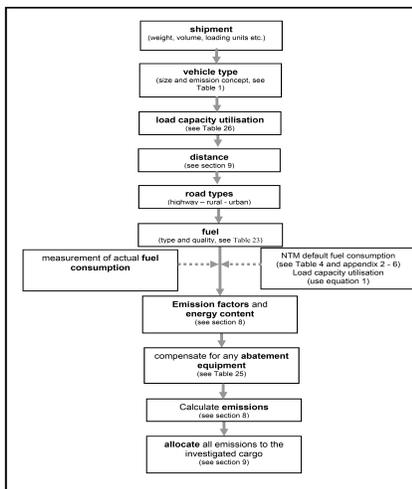
- Programs
 - Guidelines that specify what to include
- Methodologies
 - Describe the process for calculating emissions
- Tools
 - Implement methods with actual data/numbers

Program, Methodology, and Tool Example

GHG Protocol Accounting Standards



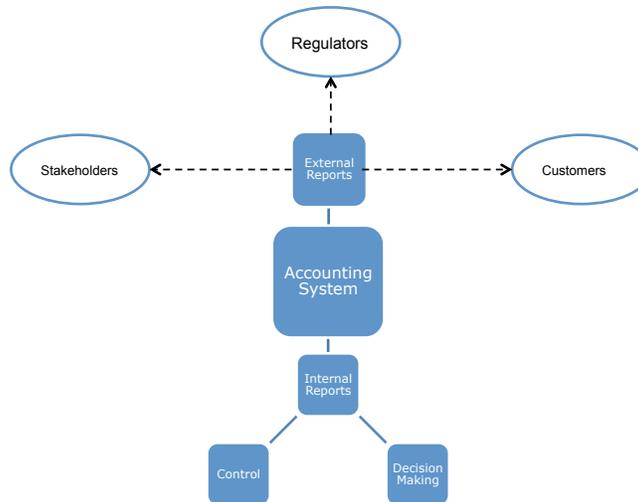
Methods vs. Data



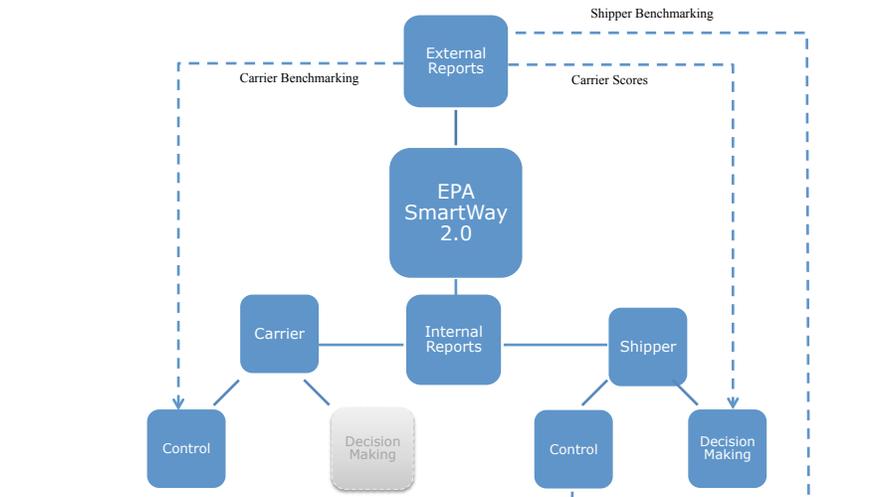
- EPA ClimateLeaders
 - National estimate of fuel
 - Ton-miles statistics from FHWA
- Defra
 - Surveys
- NTM
 - Emission modeling software
 - Defined scenarios

How do we decide what is the best approach?

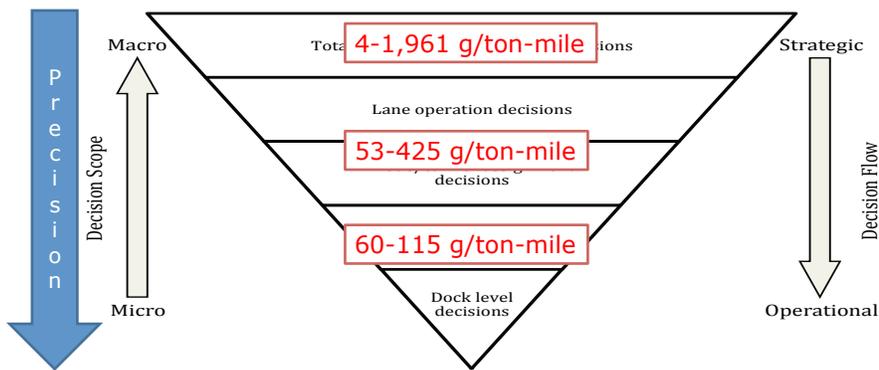
Multiple Roles of Carbon Accounting Systems



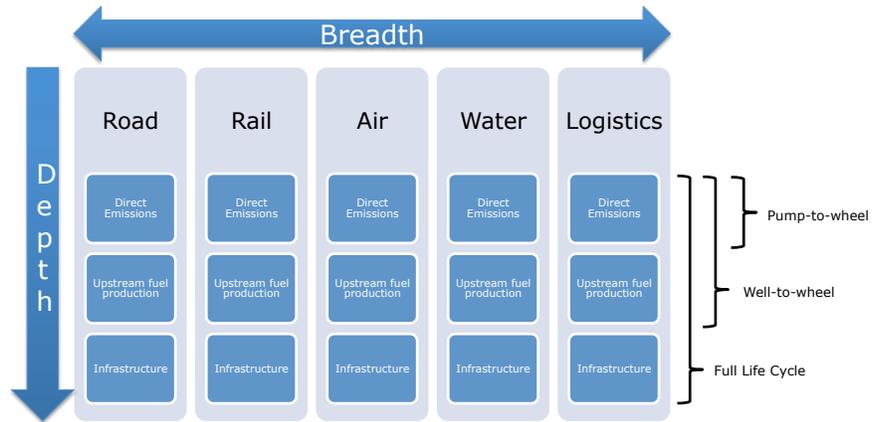
Identifying the Uses of a Tool



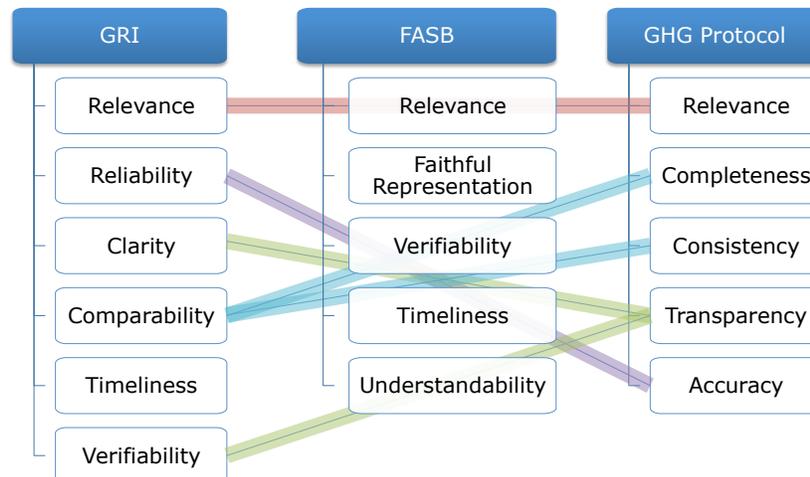
Precision



Breadth and Depth

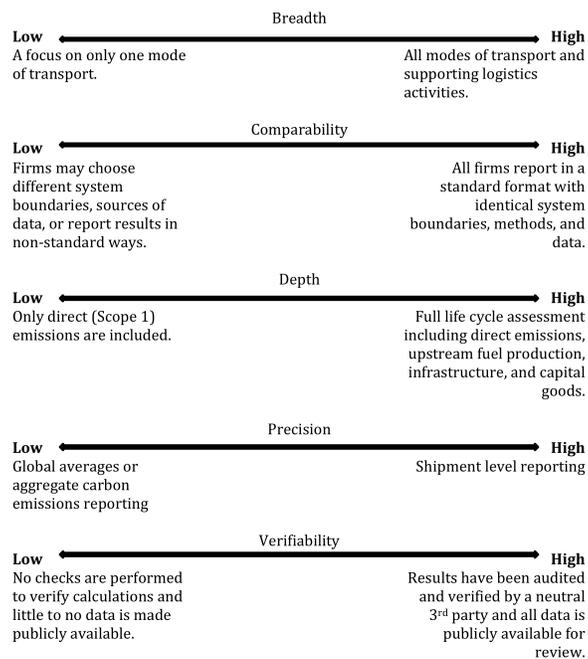


External Reporting Program Principles

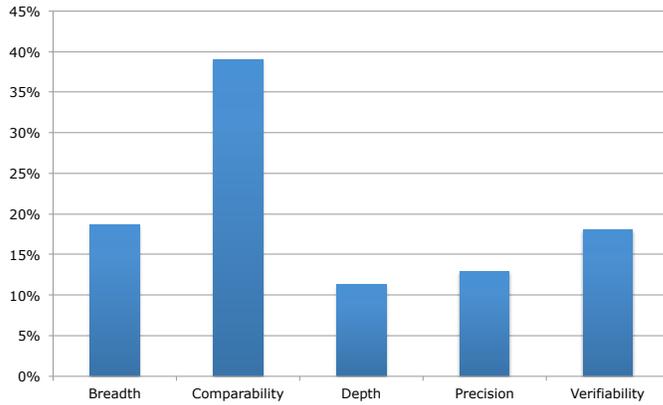


Evaluating Tools: Five Criteria

- **Breadth**
 - The scope of activities included in the measurement
- **Depth**
 - The range of direct and indirect emissions included in the measurement
- **Precision**
 - The level of detail provided by the measurement
- **Comparability**
 - The degree with which measurements can be compared across time, organizations, and
- **Verifiability**
 - Degree of assurance and transparency in the measurement



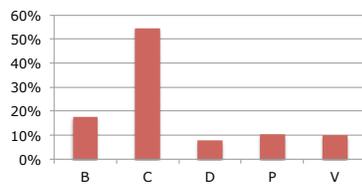
Individual Average Weighting



Inconsistency = .009

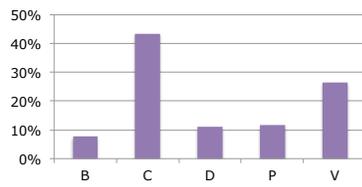
Group Weightings

Group 1



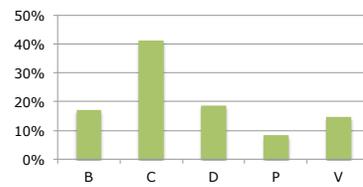
Inconsistency = .044

Group 3



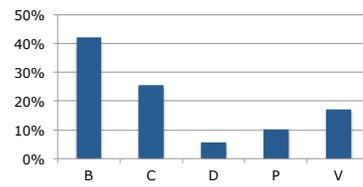
Inconsistency = .055

Group 2



Inconsistency = .024

Group 4



Inconsistency = .065

Thank You