



Should We Increase Localization of Fluid Milk Consumption in the Northeast? System Impacts

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ENHANCING FOOD SECURITY IN THE NORTHEAST WITH REGIONAL FOOD SYSTEMS
DECEMBER 10-11 2015
Marriott Greenbelt, Greenbelt, MD

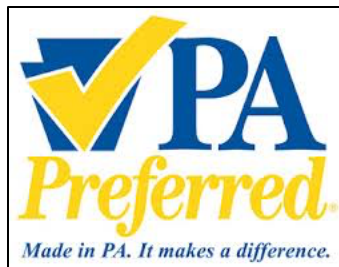
Enhancing Food Security in the Northeast through Regional Food Systems
 USDA Grant # 2011-68004-30057

Local food often viewed as...

- Healthier
- Lower-cost
- Better for the environment
- Better for OUR economy



State Governments Have Promoted State-Origin Products



What Happens if all Fluid Milk Consumed in a State is Produced, Processed and Consumed in the Same State?

Use the Northeast States as a Case Study



What Impacts to Consider?

- “Food miles”
- Supply chain costs
- GHG emissions
- Economic activity
- Employment



Environmental and Economic Impacts of Localizing Food Systems: The Case of Dairy Supply Chains in the Northeastern United States

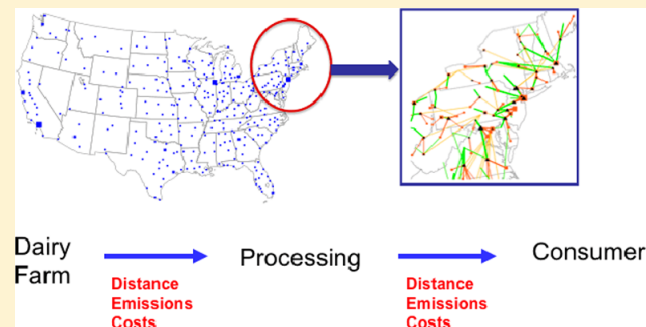
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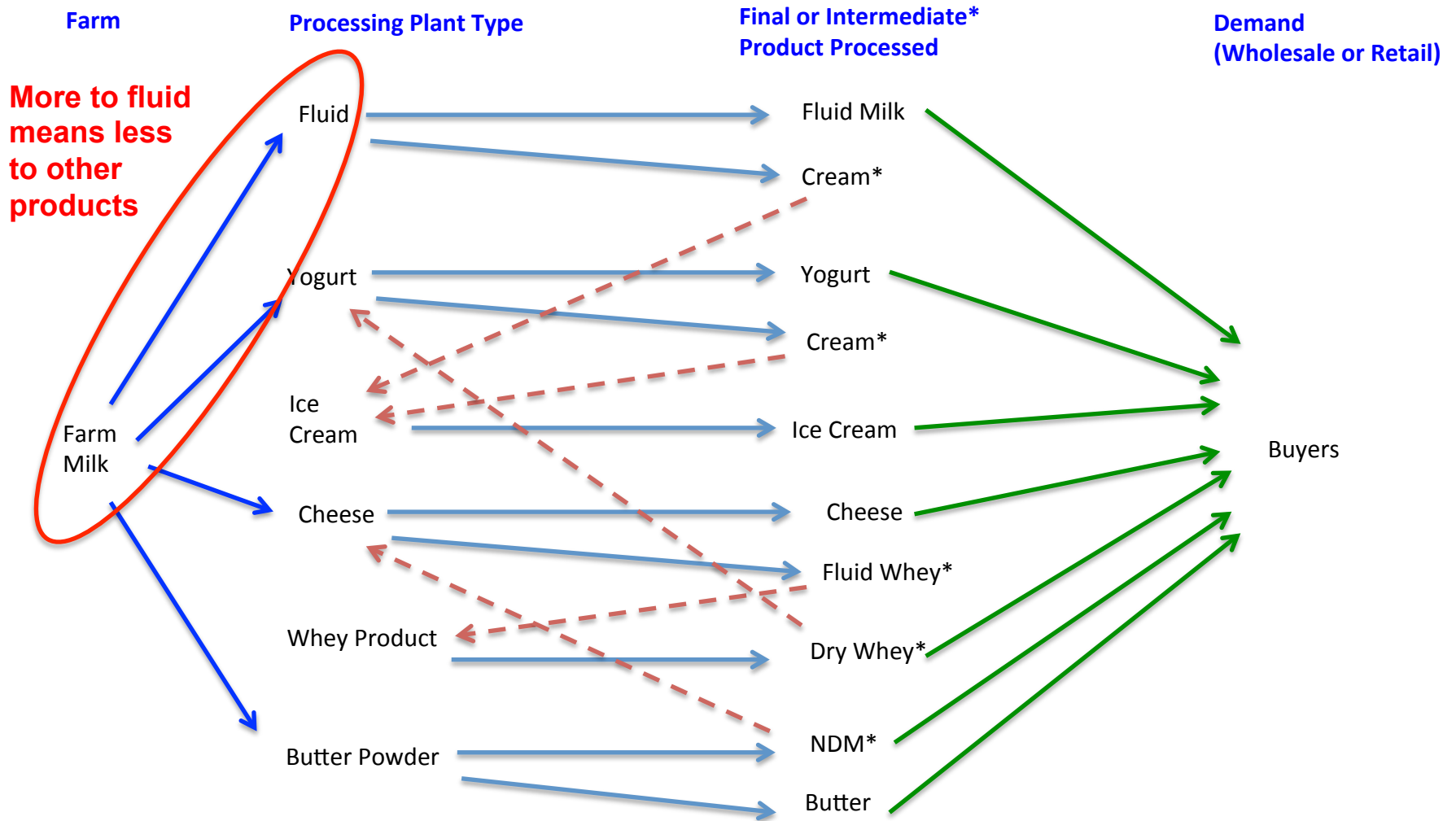
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S Supporting Information

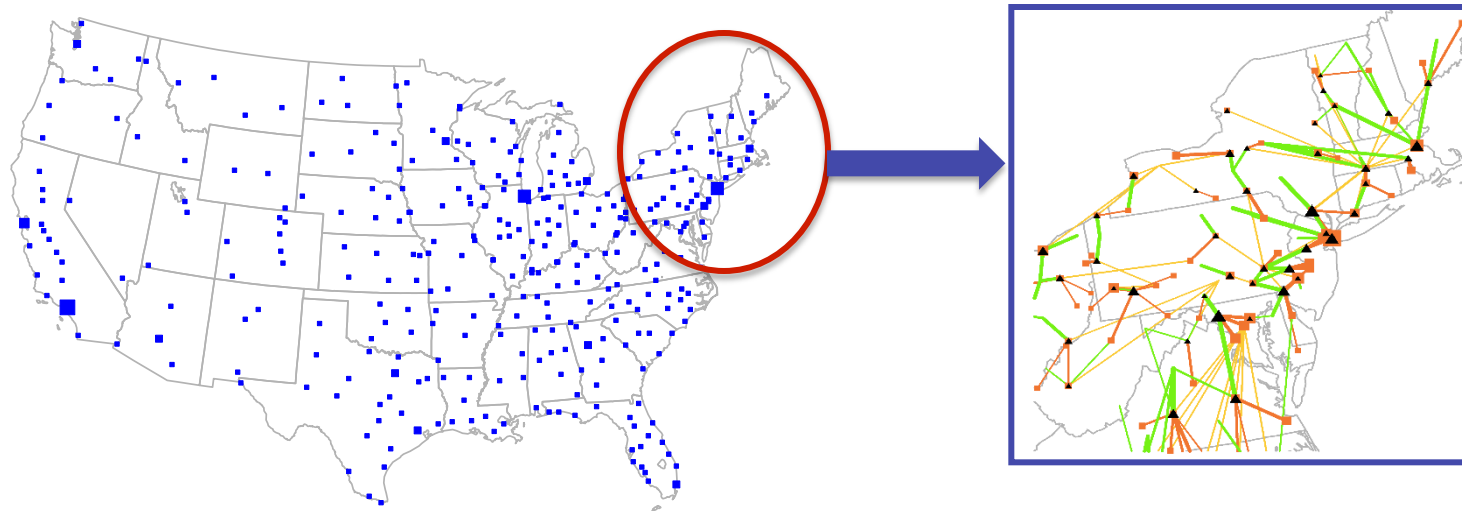
ABSTRACT: We developed and evaluated an empirical model of the U.S. dairy supply chain with a high degree of spatial and product disaggregation to assess the impacts of increasing localization of the northeast region's fluid milk supply on food miles, supply chain costs, greenhouse gas and criteria pollutant emissions, economic activity, and employment. Evaluation included comparison to regional production values and sensitivity analysis of demand and unit cost assumptions. Our analysis compares a baseline to two localization scenarios based on state boundaries and multiple-state subregions. Localization scenarios increased total distances fluid milk traveled by 7–15%, overall supply chain costs by 1–2%, and emissions of greenhouse gases (CO₂ equivalent) criteria pollutants such as oxides of nitrogen and particulate matter smaller than 2.5 μm associated with fluid milk transportation by 7–15% per month. The impacts of localization on employment and economic activity are positive, but changes are small on a percentage basis. Our analyses indicate that the definition used for localization has an impact on outcomes and that efforts to localize food systems may benefit from a more systems-oriented approach.



Farm Milk is a Limited Resource with Multiple Uses



Spatial Systems Model Used to Assess the Impacts



Dairy
Farm



Distance
Emissions
Costs

Processing

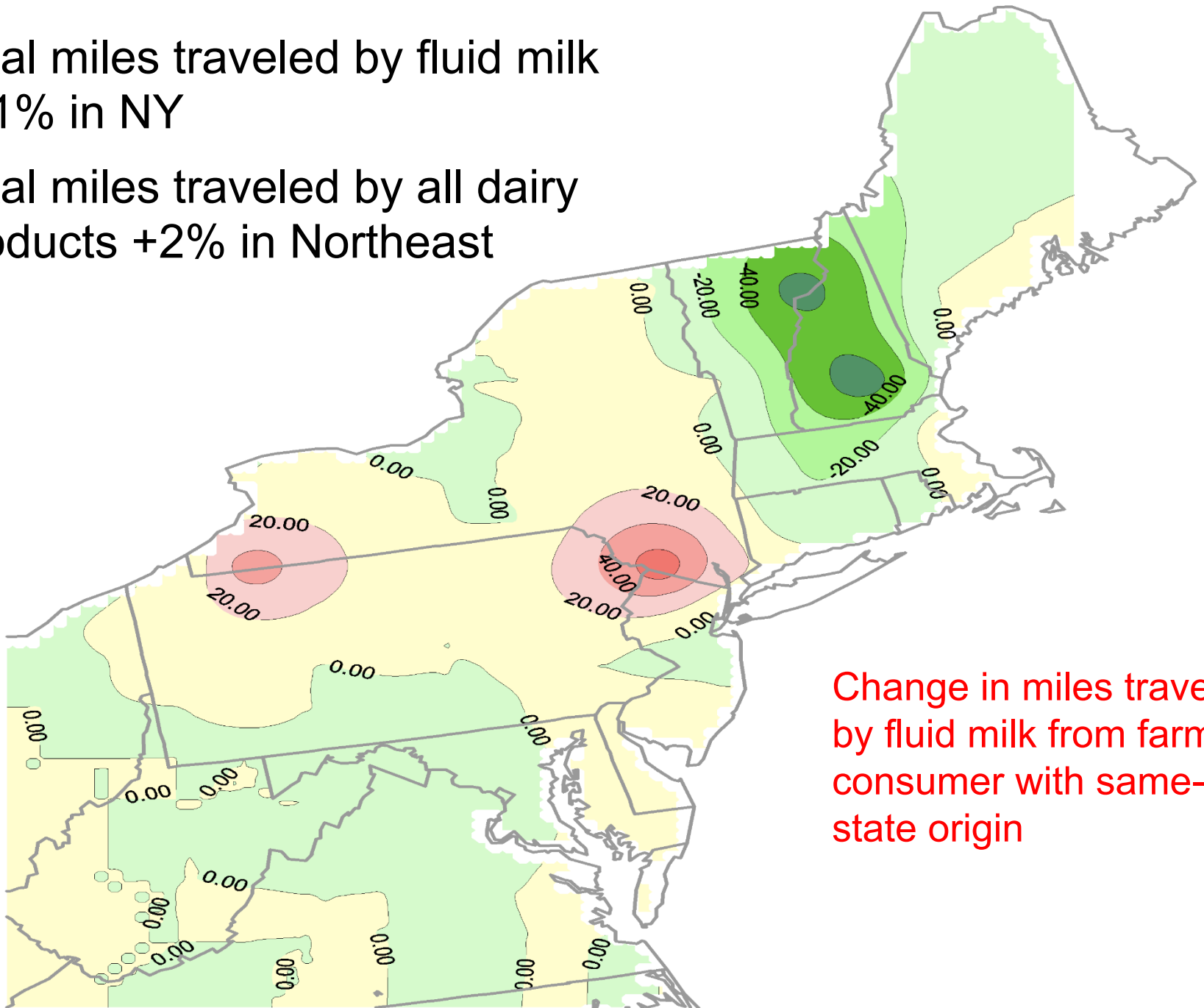


Distance
Emissions
Costs

Consumer

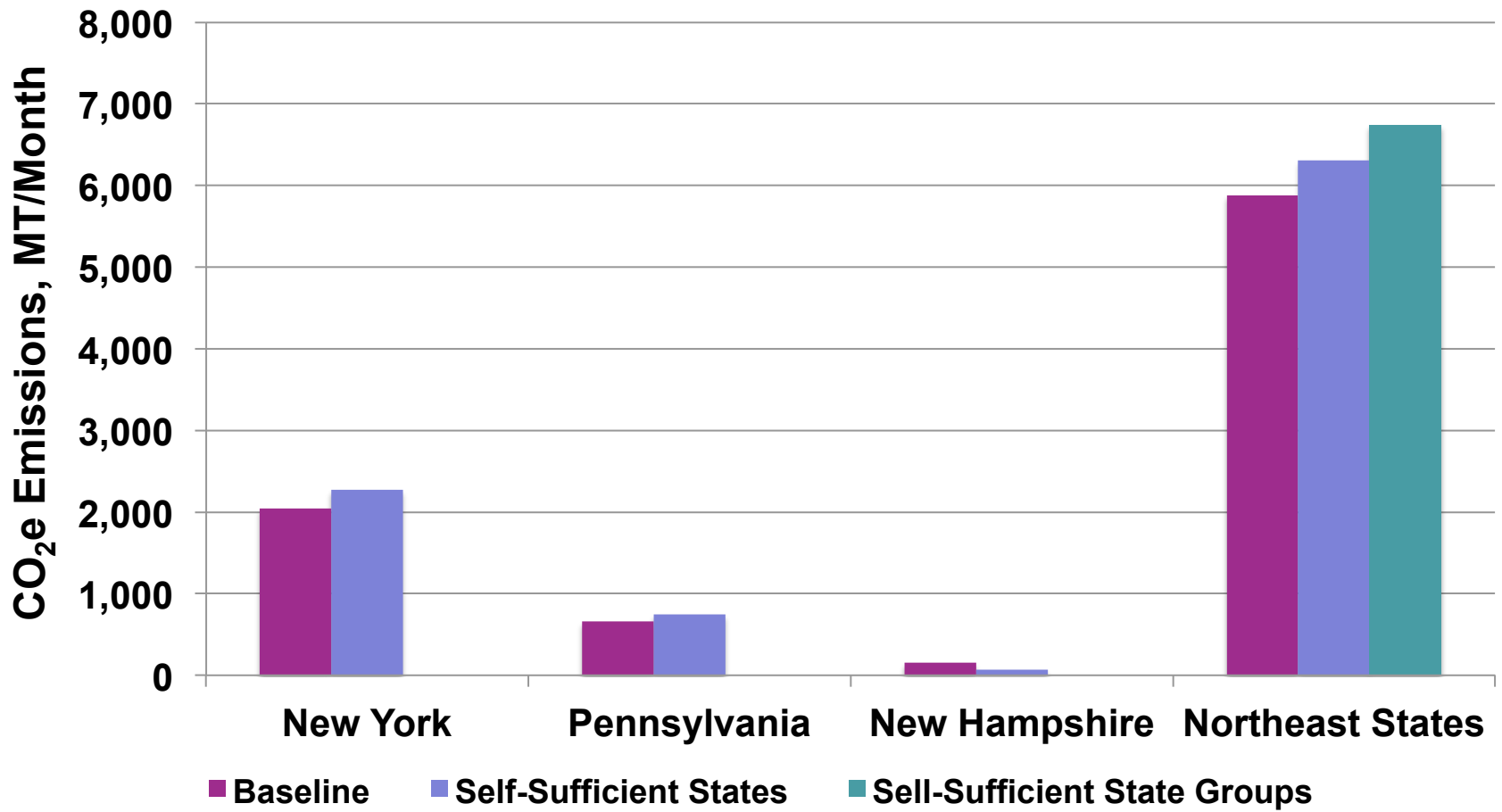
Total miles traveled by fluid milk
+11% in NY

Total miles traveled by all dairy
products +2% in Northeast



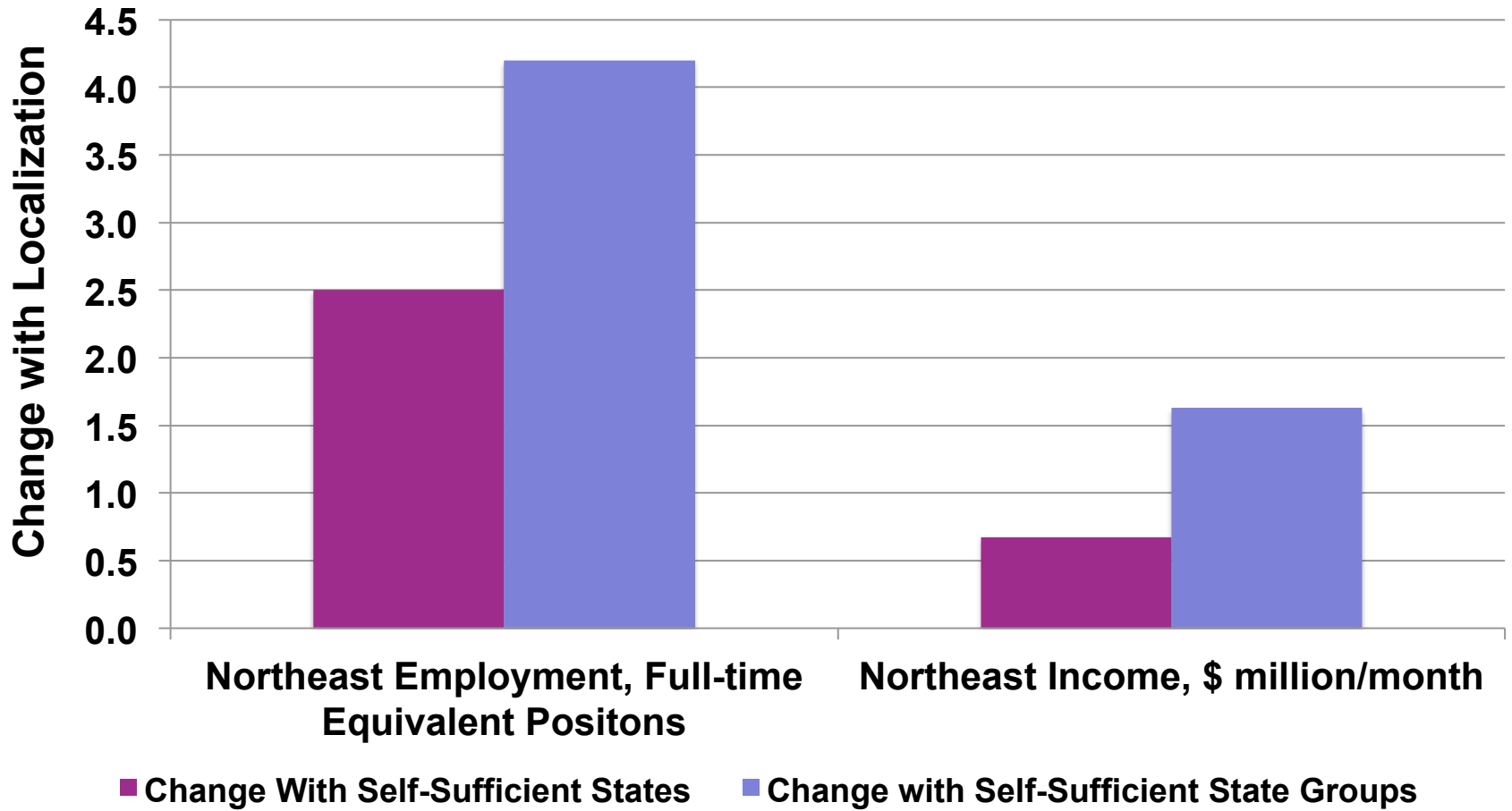
Change in miles traveled
by fluid milk from farm to
consumer with same-
state origin

- CO₂ Equivalent Emissions for Fluid Milk Transportation, Three States and for the Northeast Region, Baseline and Two Localization Scenarios



GHG emissions + 7-15% in Northeast States

- Changes in Employment and Regional Income with Two Fluid Milk Localization Scenarios



Localization of fluid milk creates 2-4 new jobs, ~\$1 million/month in GDP

Is Localizing Fluid Milk Consumption a Good Idea?

Outcome	Conventional Wisdom	Our Finding
Food miles	Large reduction	+7 to 15% increase
Supply chain costs	Reduction	+1 to 2% increase
GHG emissions	Reduction	+ 7 to 15% increase
Employment	(Large) increase	Modest increase
Regional Income	(Large) increase	(Modest?) increase

Doesn't account for impacts in other areas, including:

- Increased food miles for some products
- Increased supply chain costs
- Decreased employment and income

NOT the Conclusion

“Local food is bad”



THE Conclusion

- For localized food systems to provide us with the **economic, environmental and social benefits** we want...
 - 1) More **careful analysis** is needed
 - 2) **Systems analyses** can be very beneficial this process

Other

Questions or Comments?

