# REDEFINING SUSTAINABILITY

for a



J.H. Giordanengo

Ecosystems as Models for

Restoring our Economies



#### Turbulence (indicator of imbalance)



#### Indicators of Imbalance

"Can we resolve our most important social & environmental problems without first resolving the structural flaws responsible for their creation?"

1/4 of humans suffer moderate-severe food insecurity Mass Human Migration

Housing, Healthcare, Education, & Food Costs

### Putting Global-Scale Agriculture to the Test



**Two billion people** suffer moderate to severe food insecurity. (FAO/WHO. 2019)

**Lower nutrient density** & nutrient diversity (Murphy et al, 2008; Brown, 2020)

Many countries suffering food insecurity are **net exporters** of food (Lappé et al., 1998)

**35% of food** is wasted before reaching the plate. (Recycle Track Systems, 2023)

#### **Productive Capacity & NDP**

Increase when we use resources more efficiently

### GEPP = Gross Exaggeration of Productivity



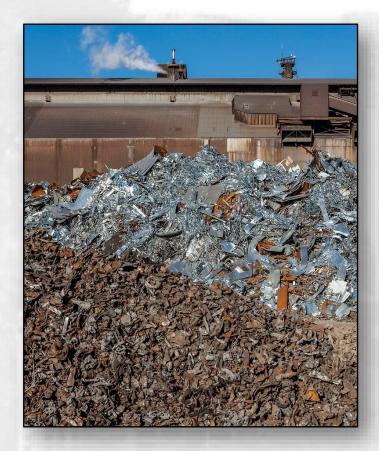




# Seven Aspects of Diversity



Richness
Functional Redundancy



### Big Benefits of Diversity



More even distribution of biomass (wealth)? Greater human fulfillment?

# Exogenous

- Fossil Fuels
- Wind or Solar Power (when imported)

# Endogenous

- Biofuels
- Wind or Solar Power
- Human Power



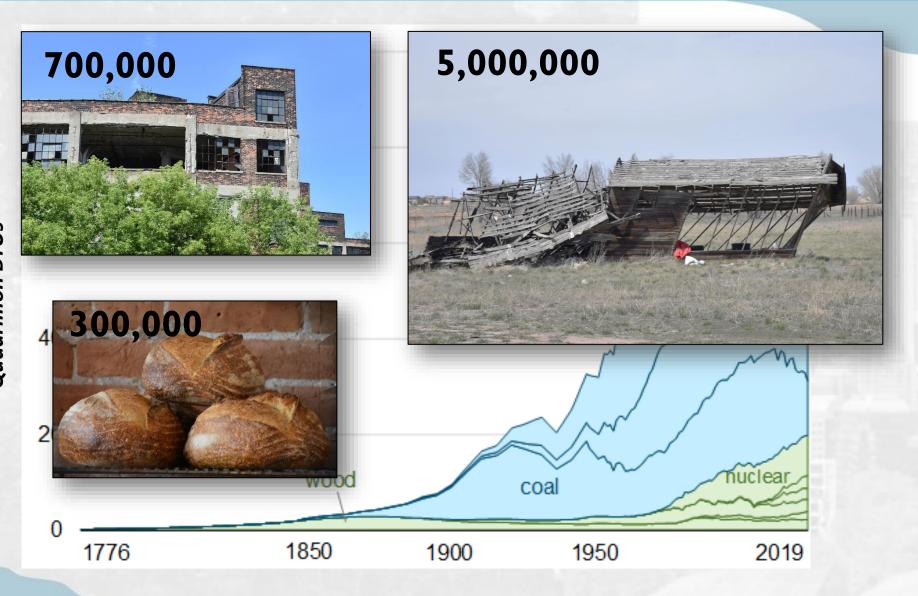
### What Happens When Energy is Transferred in?

Energy Exogenous

BioDiversity

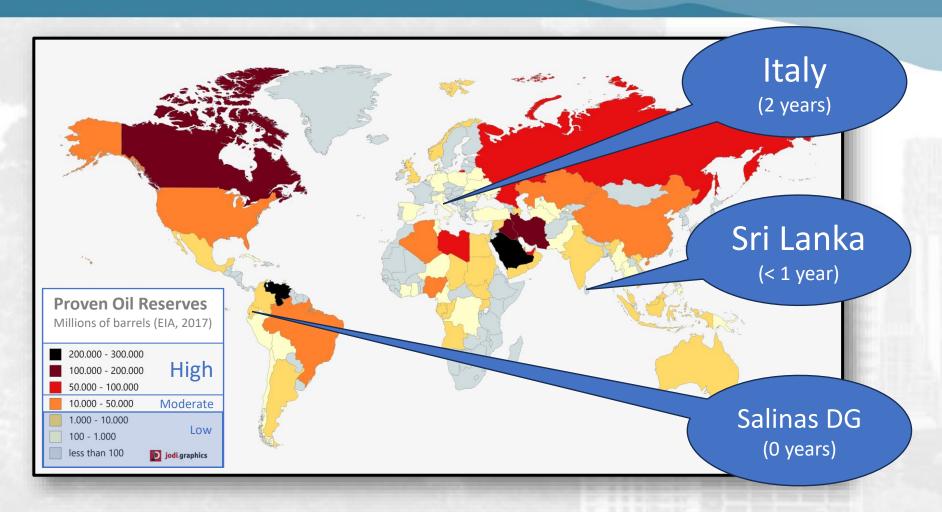


## Ether gyrean fluencemoin Excinotion Divertsity



**Quadrillion BTUs** 

### Energy Neutrality = Energy Sovereignty



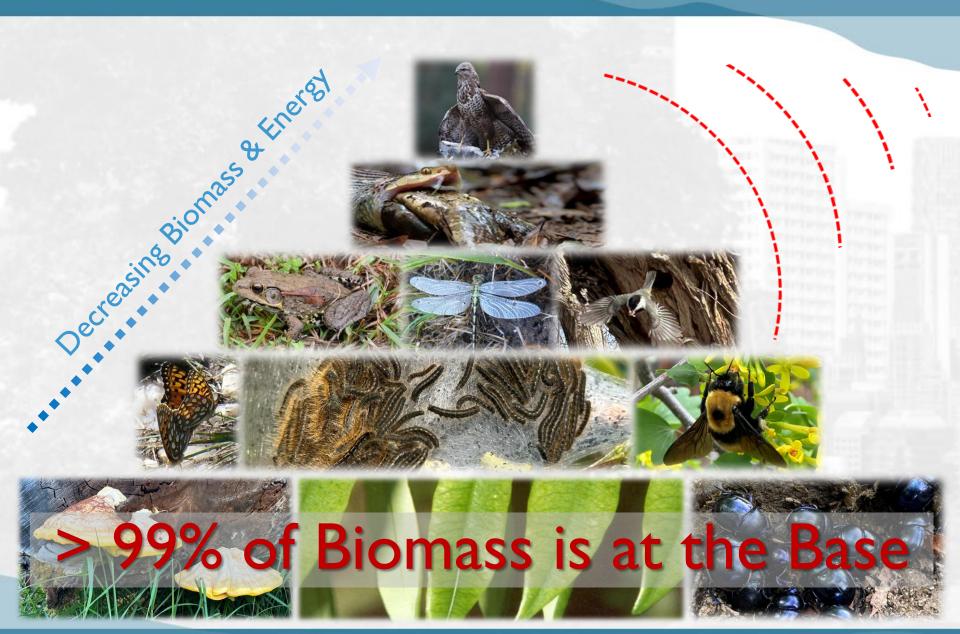
No. Nations with Low or No Petroleum Reserves: 180

#### **Energy Neutrality**

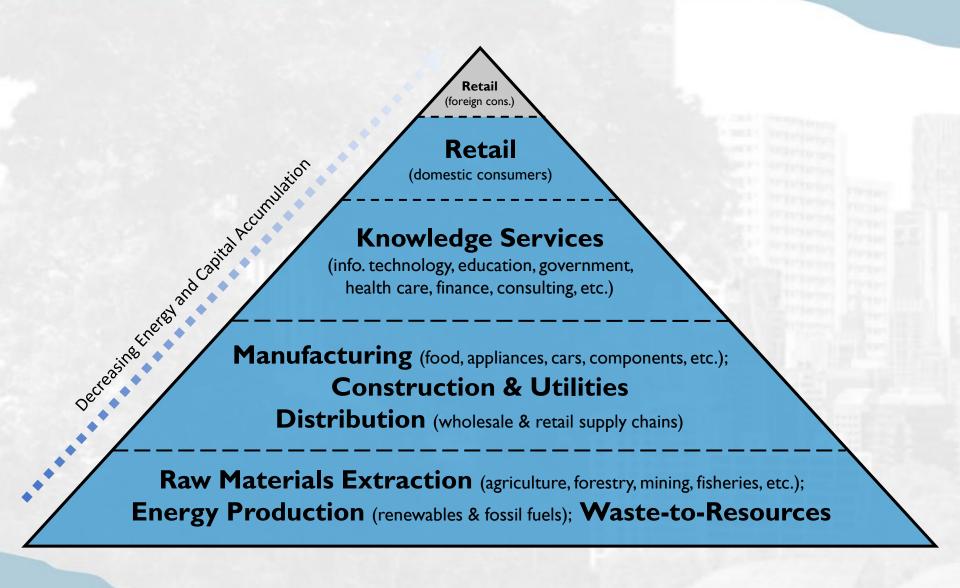
Energy consumed = energy produced



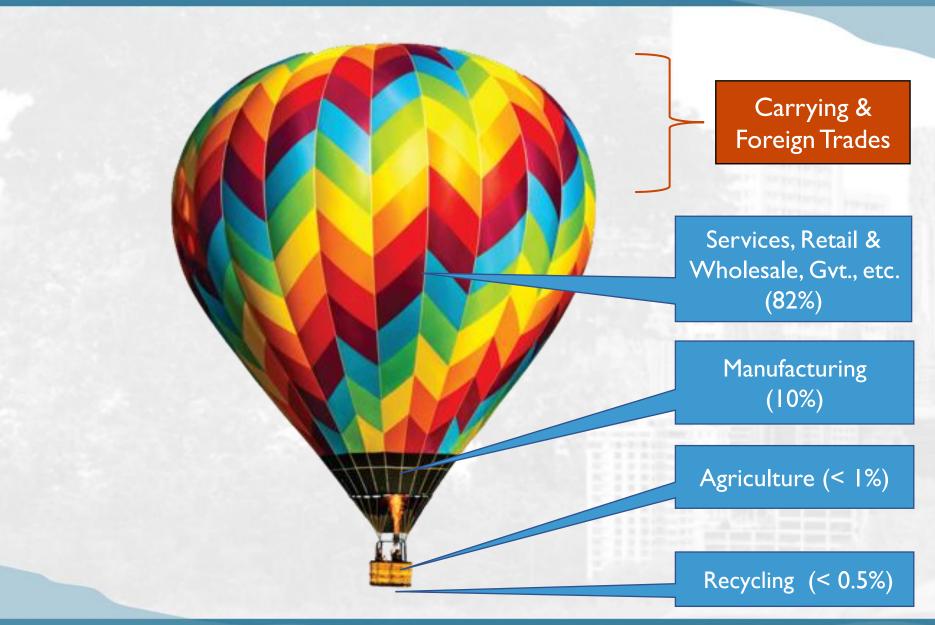
#### Two Primeval Trade Rules

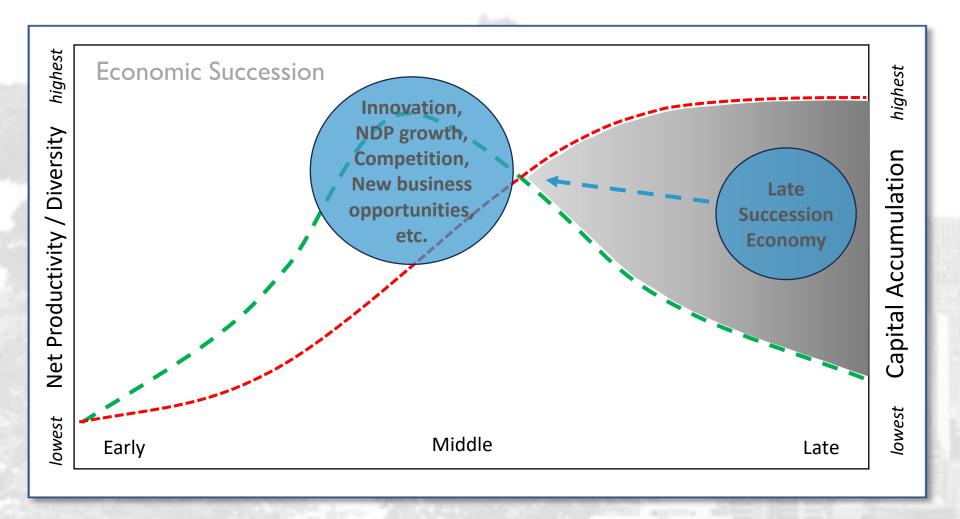


### The Balanced (Sustainable) Trade Pyramid



#### U.S. Trade Balloon





#### Innovation "returns on investment" have declined since the 1970s

(Paul Romer, Pulizer Prize economist)

Flat Real Wages

Declining GDP Growth (Per Capita)

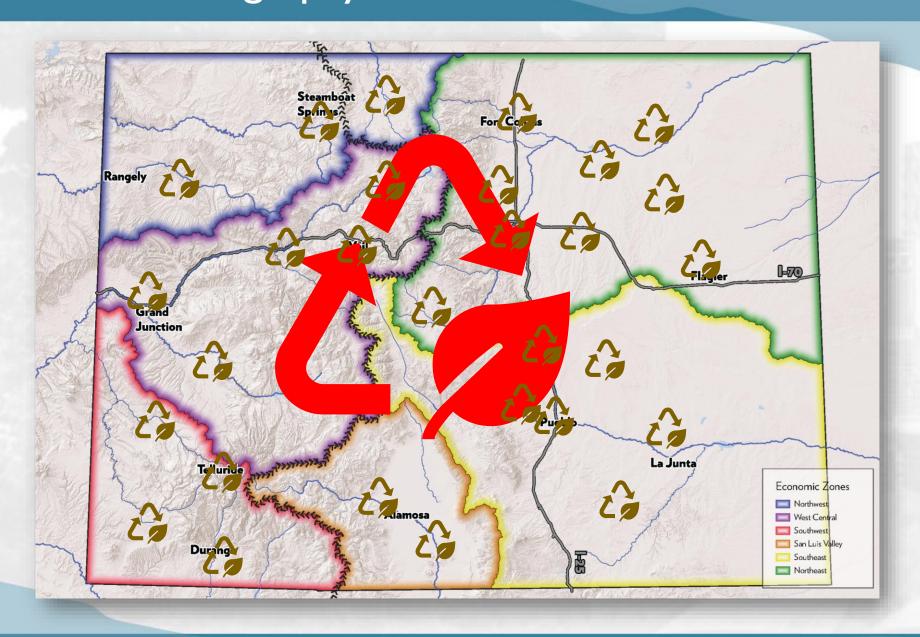
Increase in Wealth Gap
Increase in Relative Poverty



## Natural Geography of Circular Economy



# Natural Geography of Circular Economies



#### Where to Focus Economic Restoration?



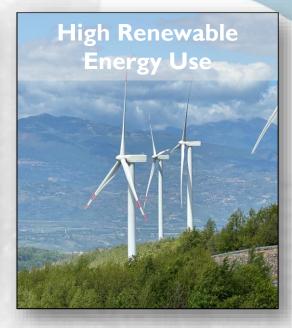
## Circular Manufacturing Strategies

- Agile Manufacturing
- Cooperatives
- Ecological Clustering, etc.



# Italy's Per Capita GDP Rank in the World (ueb)?









Number 40

France: Number 42

Germany: Number 43

USA: Number 65

#### Stimulating Circularity in a Turbulent 21st Century

#### Focus Policies & Programs

On diversifying the bottom of trade pyramid

#### **New Messaging**

Job creation, increased NDP, increased resilience & resistance, and (yes) env. and social justice.



#### **Energy Neutrality**

Requires greater efficiencies of production.



#### **Trade Policy Shifts**

To Stimulate Sustainable Regional Economies

Business & Industry Development scaled to meet regional needs.



Times of great turbulence favor the evolved models, not those of the past.

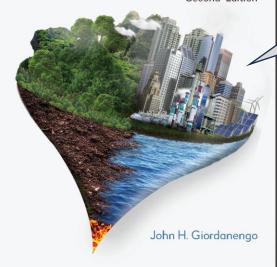
#### **Books & Collaboration**



**ECONOMIES** 

to a sustainable state

Second Edition



20% off through November 15

With code: EMR20





John@EconomicRestoration.org