

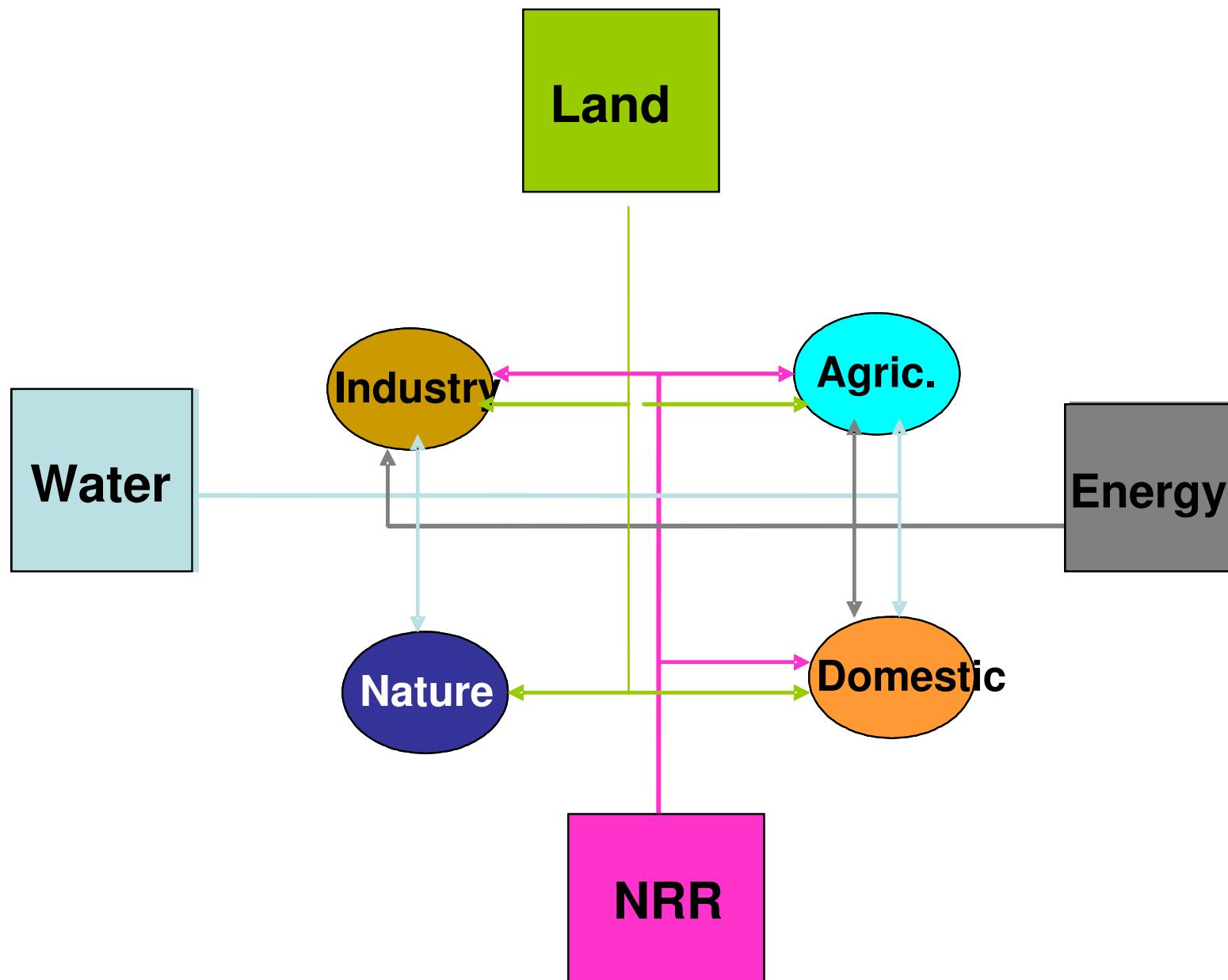


SUSTAINABILITY
AT THE NATIONAL ACADEMIES

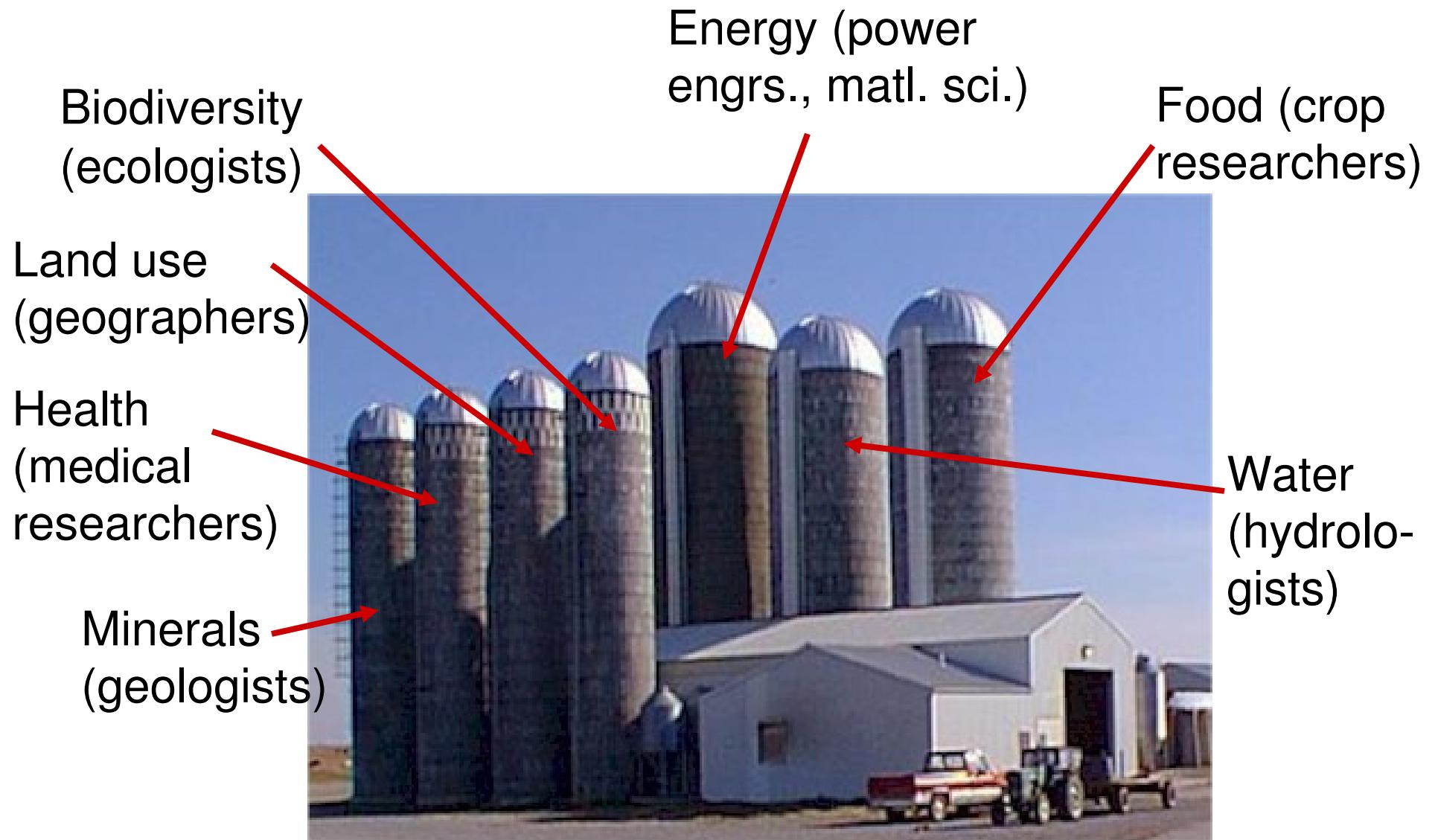
THE NATIONAL
ACADEMIES

Sustainability Linkages in the Federal Government

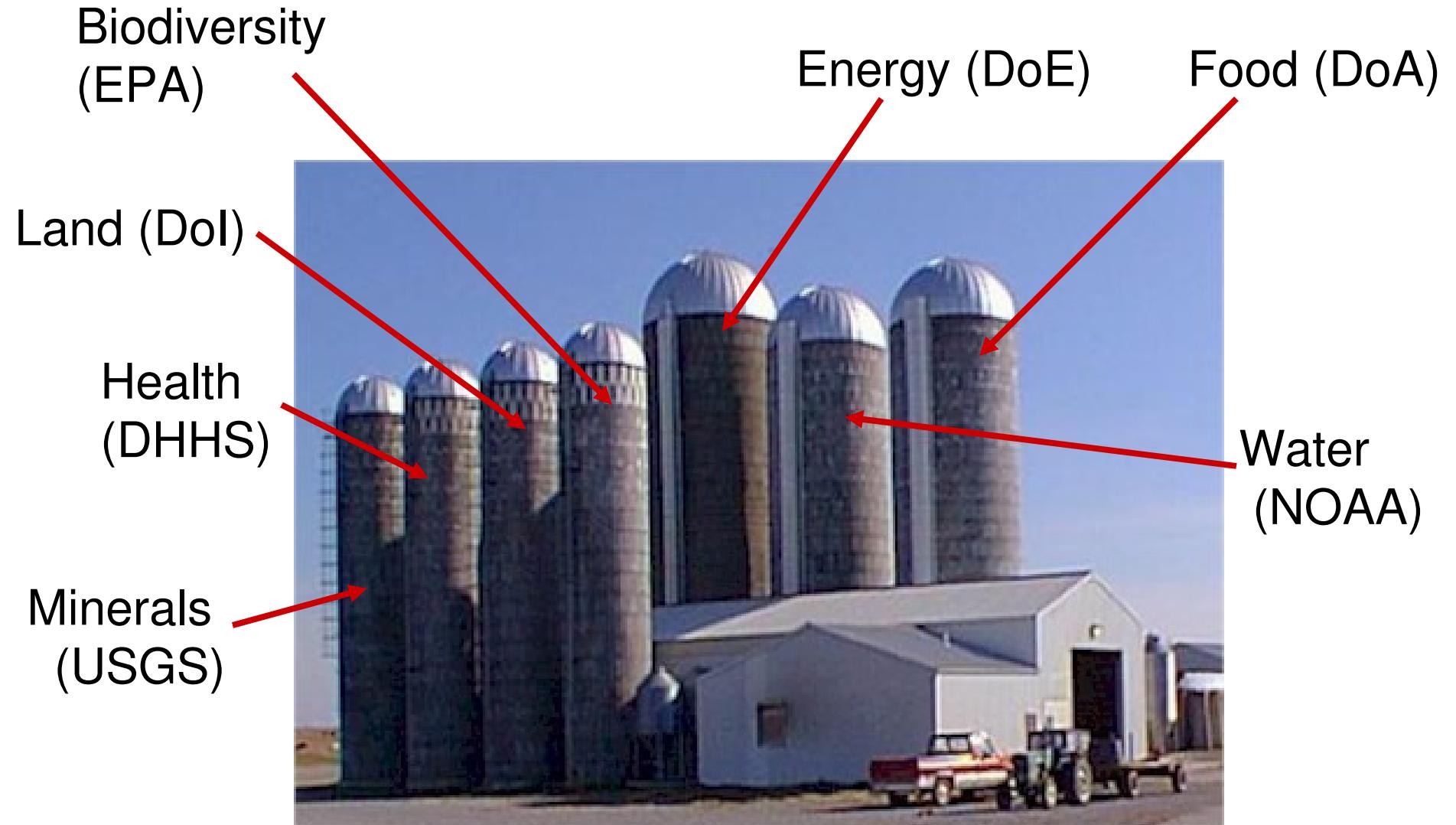
**Science and Technology for
Sustainability Program
The National Academies**



The Sustainability Silos of the Experts



The Sustainability Silos of the U.S. Government



Example of a Linkage Situation
Involving a Number of Federal and
State Agencies:
The Pebble Mine, Alaska

Regional

Legend

-  General Dev
-  Possible Po
-  Possible Ro
-  National Pa
-  National Ph
-  Borough Bo
-  Communities
-  Existing Roi



Scale 1:250,000
Alaska State Plane 3
1943 North Area

See [Feedbacks](#) (20)

The Pebble- Deposit

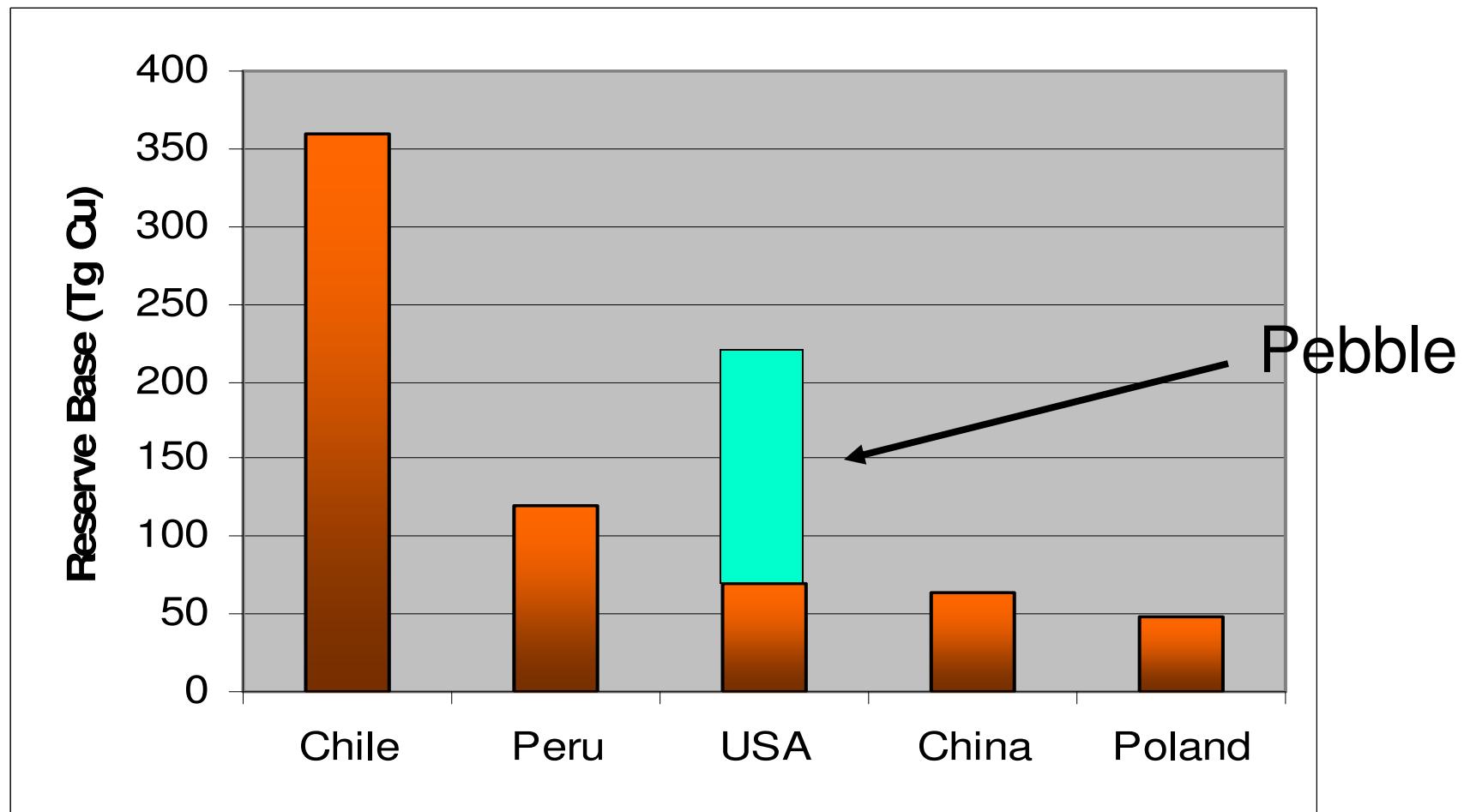
Bristol Bay Salmon



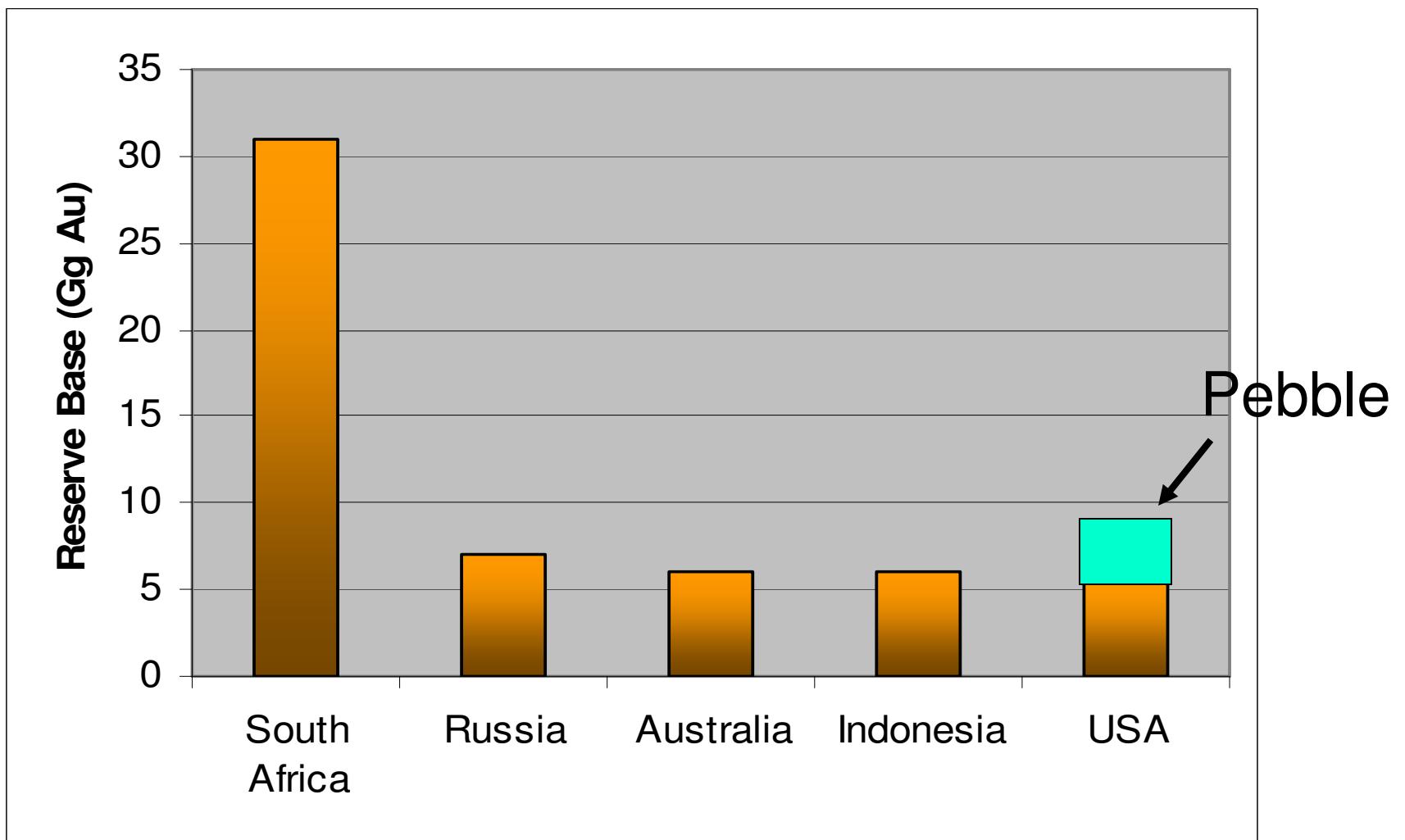
Resources in the Pebble Mine

- 67 billion pounds (150 Tg) of copper (perhaps the largest undeveloped copper deposit in the world)
- 4 billion pounds (8.8 Tg) of molybdenum
- 82 million ounces (2.6 Gg) of gold

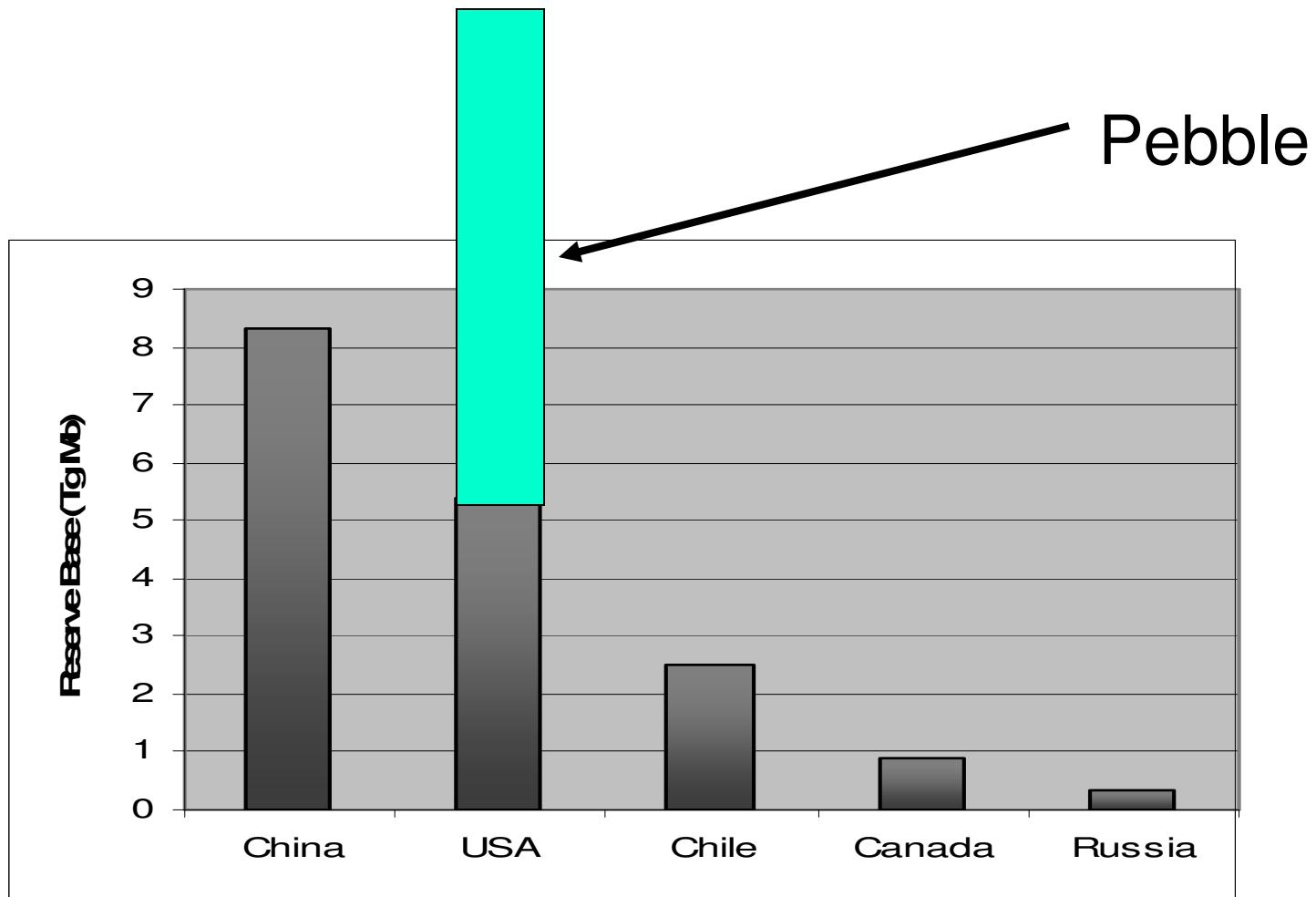
Copper: The Global Reserve Base



Gold: The Global Reserve Base



Molybdenum: The Global Reserve Base



The Pebble Mine Linkages Issue:

Do we need these metals badly enough to justify threatening a unique natural resource?

To Mine or Not to Mine?



The Pebble Mine social science
and ethics issue *for each of us:*

Is it moral to use materials for
your own benefit if you refuse to
allow them to be mined and
processed in your own country?

If you do not permit the Pebble Mine to operate, what will you give up?



Regulatory oversight for the Pebble Mine

No Single Permit to Mine: there are many permits & authorizations

STATE	FEDERAL
■ Plan of Operations (DNR)	■ US EPA Section 402 NPDES Water Discharge Permit
■ Reclamation and Bonding (DNR)	■ US EPA Air Quality Permit review
■ Waste Management Permits and Bonding (ADEC)	■ US EPA Safe Drinking Water Act (UIC Permit)
■ Certification of NPDES and ACOE Permits (ADEC)	■ US ACOE Section 404 Dredge and Fill Permit
■ Sewage Treatment System Approval (ADEC)	■ US ACOE Section 10 Rivers and Harbors Act
■ Air Quality Permits (ADEC)	■ US ACOE Section 106 Historical and Cultural Resources Protection
■ Fish Habitat and Fishway Permits (DNR)	■ NMFS Threatened and Endangered Species Act Consultation
■ Water Rights (DNR)	■ NMFS Marine Mammal Protection Act
■ Right of Way/Access (DNR/DOT)	■ NMFS Essential Fish Habitat
■ Tidelands Leases (DNR)	■ NMFS Fish and Wildlife Coordination Act
■ Dam Safety Certification (DNR)	■ USFWS Threatened and Endangered Species Act Consultation
■ Cultural Resource Protection (DNR)	■ USFWS Bald Eagle Protection Act Clearance
■ Monitoring Plan (Surface/Groundwater/Wildlife) (DNR/DEC)	■ USFWS Migratory Bird Protection
■ Coastal Zone Consistency Determination (DNR)	■ USFWS Fish and Wildlife Coordination Act

(These are only some of the authorizations required)

And many agencies.

- **Department of Natural Resources**
- **Department of Environmental Conservation**
- **Department of Fish and Game**
- **Department of Transportation & Public Facilities**
- **Department of Commerce, Community and Economic Development**
- **Department of Law**
- **US Environmental Protection Agency**
- **US Army Corps of Engineers**
- **US Fish and Wildlife Service**
- **National Marine Fisheries Service**
- **Bureau of Land Management**
- **U. S. Forest Service**
- **National Park Service**

Source: Alaska Department of Natural Resources



The **Critical Sustainability Challenge**

Move beyond sectoral or organizational approaches within the federal (and perhaps state) government to take more integrated approaches to sustainability challenges involving complex interactions among systems

The National Academies study on
Sustainability Linkages
in the Federal Government



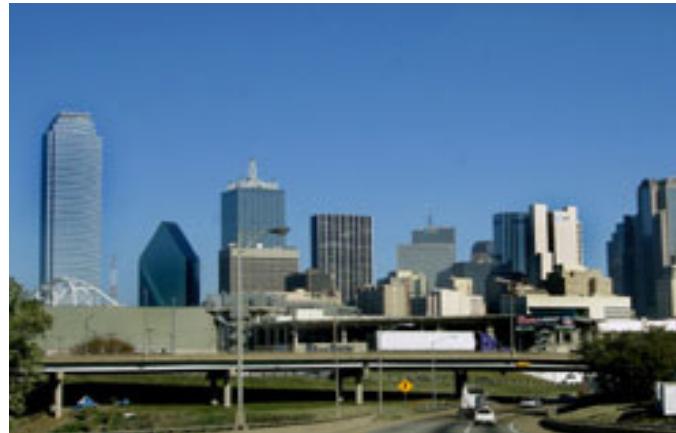
Meeting the Sustainability Challenge in the Federal Government

Establish a committee of the US National Academies to design workshops that explore linkage challenges across federal (and perhaps state) governments, hold the workshops, synthesize the results of those workshops, and make recommendations to the sponsors

Issues for the Fact-Finding Meetings

- Linkages form potential constraints to many key components of sustainability
- The linkages are often not considered in sustainability discussions or analyses
- Linkages need to be much better quantified
- The policy implications of linkages need to be explored and communicated to government agencies

Meetings Approach – Landscape Focus



Urban



Coastal



Mineral Rich



Rural/Agricultural

The Landscape Approach

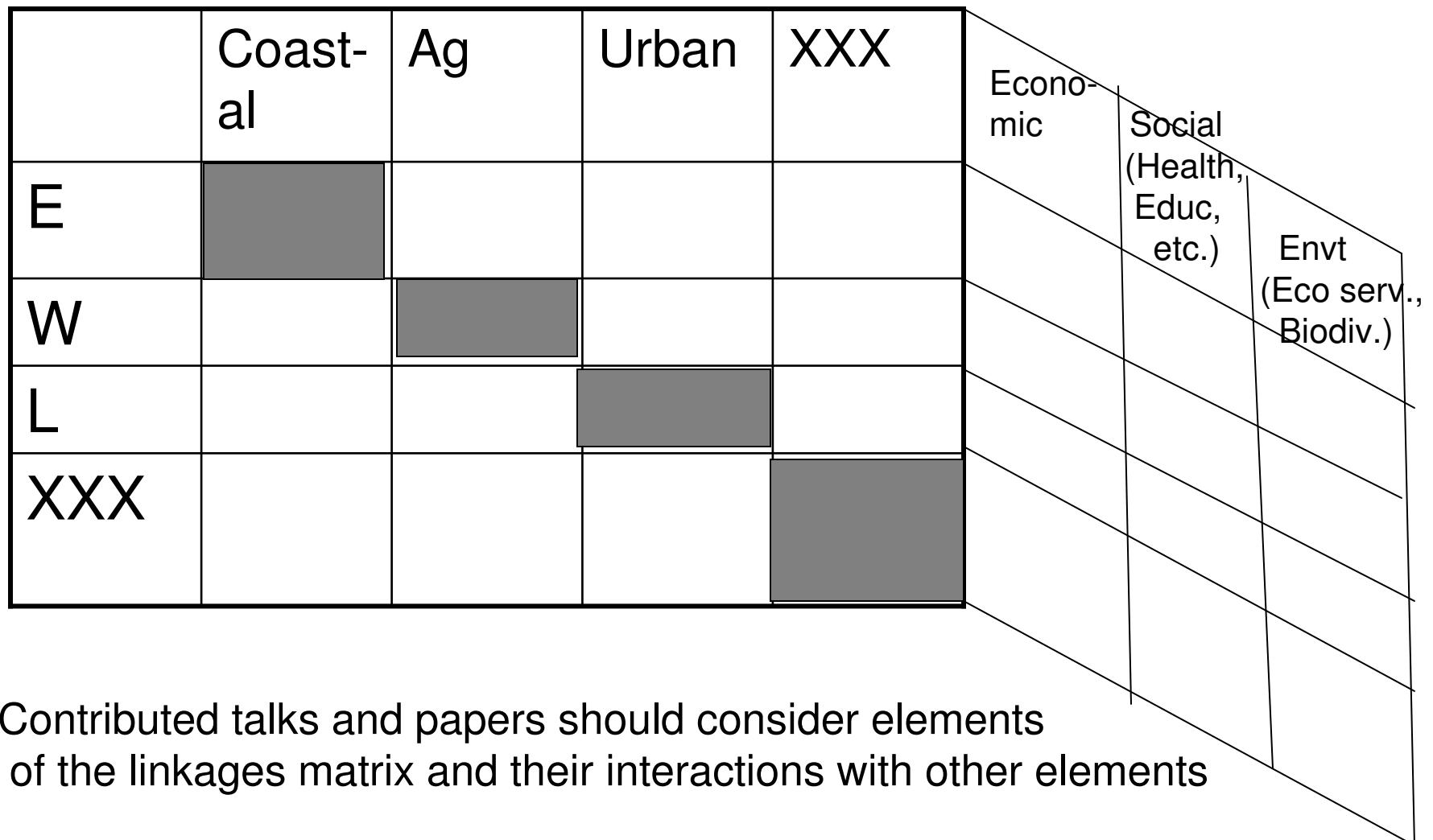
CASE STUDIES (2 per landscape)

- **Coastal:** Puget Sound, Great Lakes
- **Rural/Agricultural:** Platte River basin, Mojave Desert ecosystem
- **Urban:** Philadelphia, Miami (tentative)

The Landscape Matrix

	Urban	Coastal	Agricul-tural	XXX
Energy				
Water				
Land				
XXX				

Adding the Three-Legged Stool



Sustainability Linkages in the Federal Government: Final Report

- Describe linkages and policies and programs that support long term sustainability
- Identify gaps in understanding of these linkages and consequences for sustainability
- Identify institutional impediments
- Suggest next steps for overcoming institutional impediments