

# Sustainable and Healthy Communities

## Office of Research & Development

Rick Linthurst, Interim National Program Director

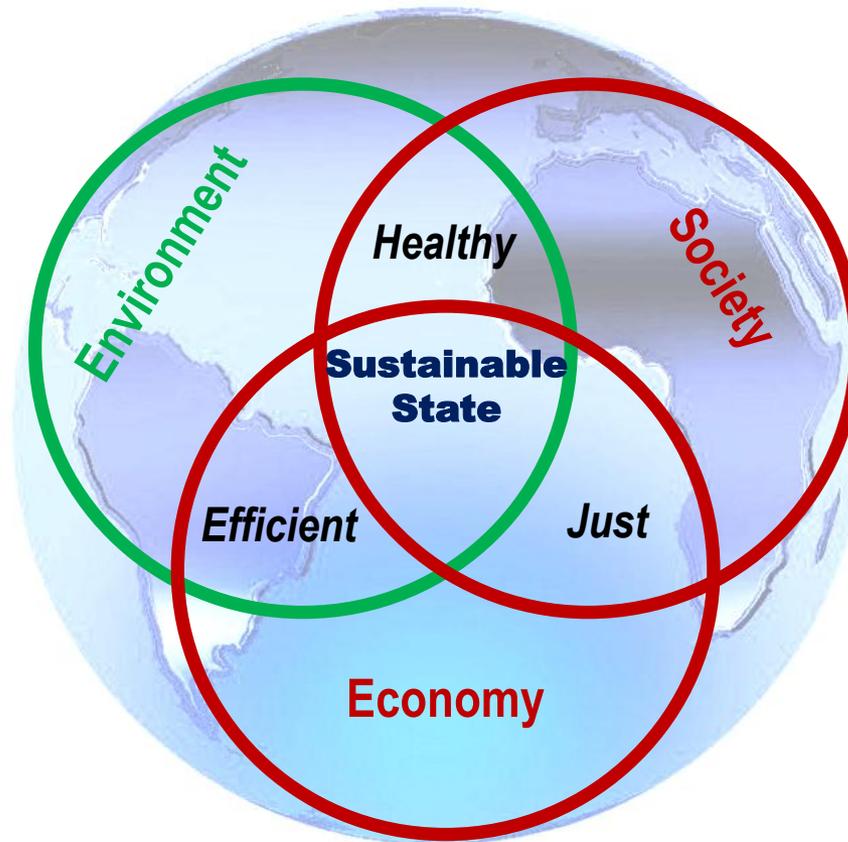


# SHC Overarching Problem Statement

**Communities** face social, economic, and environmental trade-offs in a resource-constrained world. These trade-offs are often not well characterized in terms of the implications and interactions between human health, ecosystem services, economic vitality, and social equity. Conventional decision-making often does not adequately address this problem.

**Solution:** Communities need holistic, integrated, and functional science, practical technical tools and support to find solutions that are sustainable: that is, they are equitable, efficient, and effective.

# The three pillars of community sustainability: “the triple bottom line”

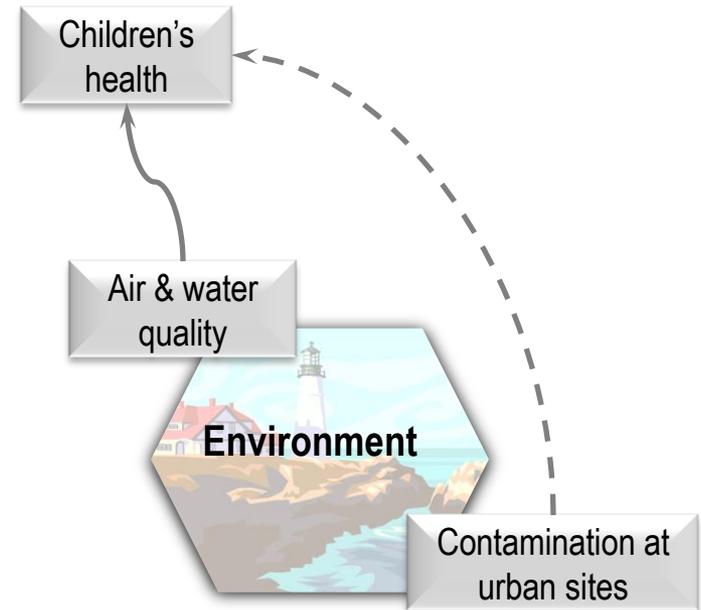


# Traditionally



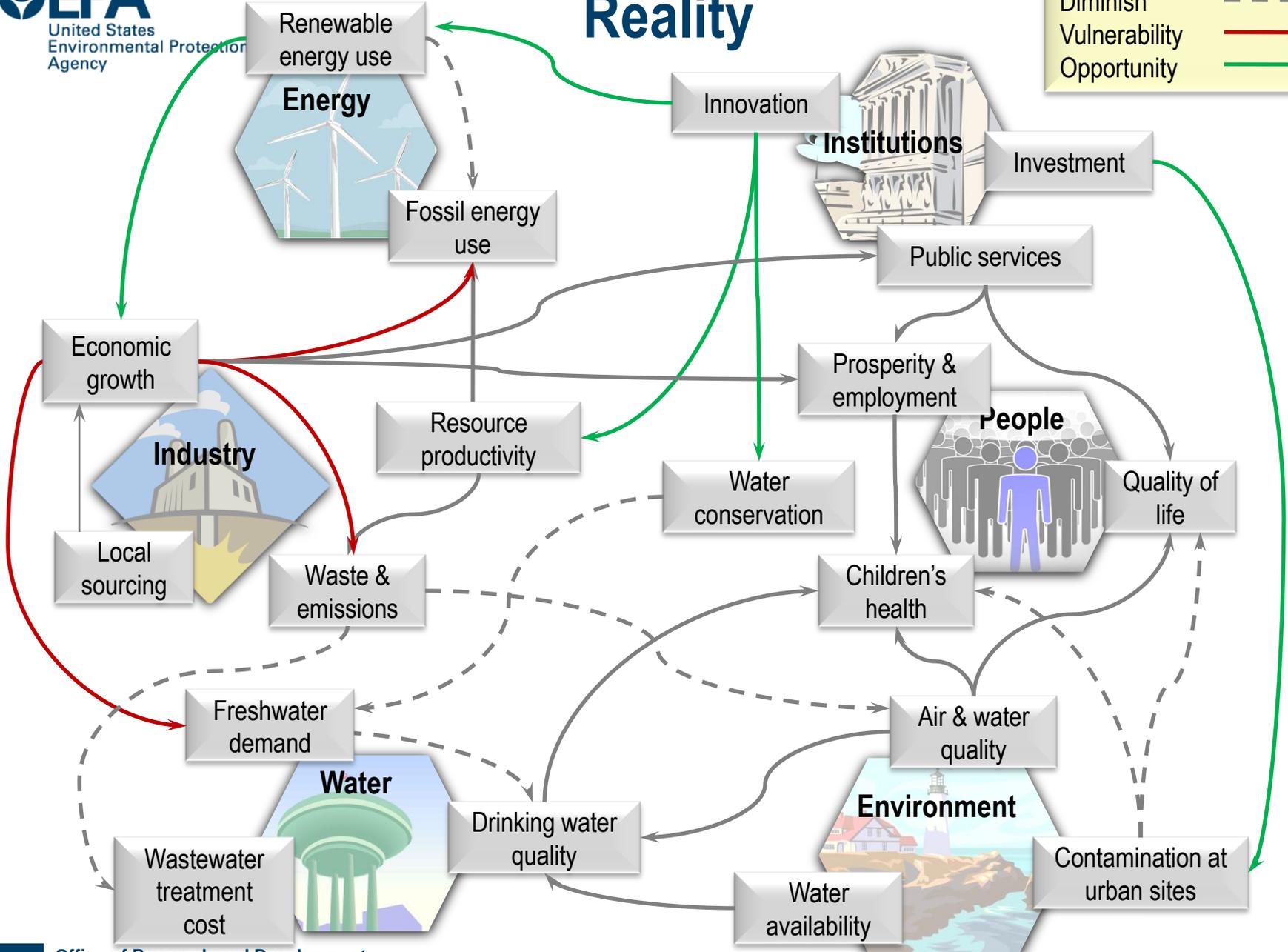
## Current research focus in linear

- Study effects of x on y
- Regulate to reduce “x”



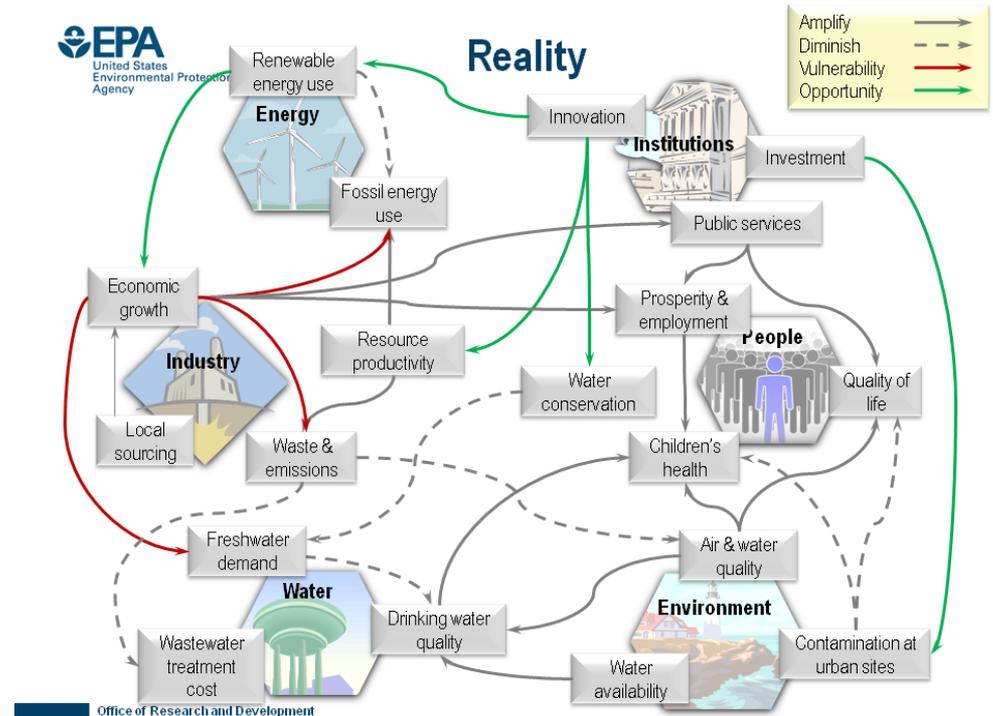
# Reality

Amplify	→
Diminish	- - - →
Vulnerability	→
Opportunity	→



# Realizing Sustainability in Real Communities

- Characterize the “full” system and its interconnections
- Identify multiple intervention points
- Quantify the response of the system to alternative decisions
- Adaptive management
  - implement action
  - monitor performance
  - adjust decisions



# What do communities need to become more sustainable? We asked and listened.



**Conducted** regional listening sessions, webinars, workshops, meeting and conference calls involving more than 200 community leaders, decision-makers, and NGO representatives.

**Communities told us** their most frequently identified needs:

- *An integrated package of tool/models that give community decision-makers a full accounting of the environmental, social and economic costs and benefits (“Triple Bottom Line Accounting”) of alternative management solutions affecting human health and ecosystems.*
- *Better performance measures and metrics to track progress*
- *Better ways of communicating, educating and framing sustainability discussions*

# What do communities need to become more sustainable? We asked and listened.

## Further they told us:

The decisions that were most common and challenging were about:

Landuse Planning

Building and Infrastructure

Transportation

Waste Management



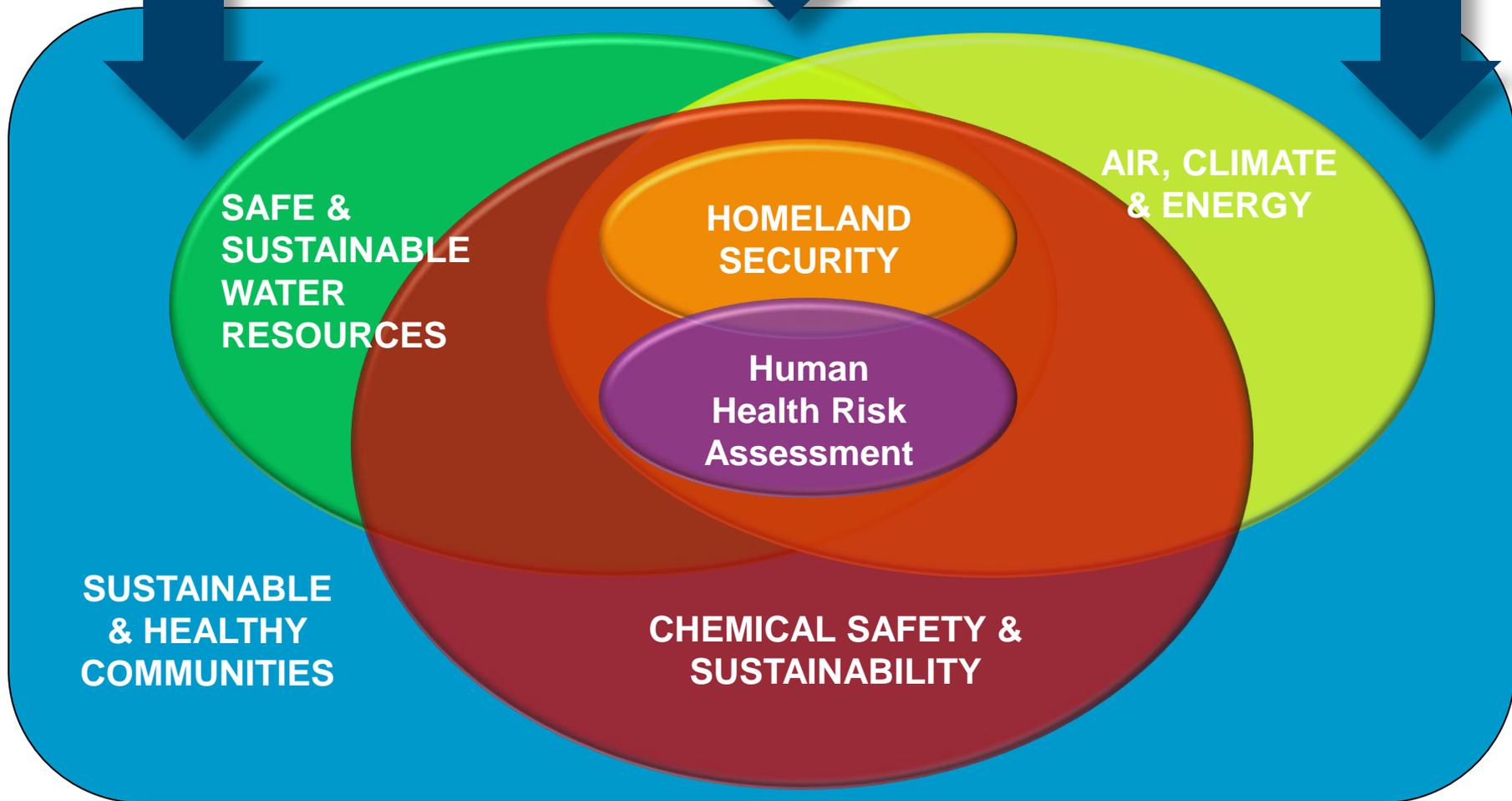
**RESEARCH:**

**EPA Labs, Centers &  
Program Offices**

**INTEGRATED RESEARCH**

**RESEARCH:**

**External Research  
Partners**



RESEARCH:

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External Research Partners

SAFE & SUSTAINABLE WATER RESOURCES

HOME & COMMUNITY SECURITY

AIR, CLIMATE & ENERGY

Human Health Risk Assessment

SUSTAINABLE & HEALTHY COMMUNITIES

CHEMICAL SAFETY & SUSTAINABILITY

**“Triple Bottom Line” Accounting of Alternative Management Decisions**

# SHC Research Structure

## Theme 1 – Solutions for Sustainable Communities:

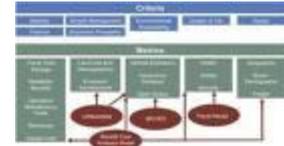
- System Integration (Durham, NC Pilot)
- Building and Infrastructure
- Land use: planning and zoning
- Transportation
- Waste and materials management and site remediation



# Theme 1 Science Questions - Just the beginning

- What are the most important decisions and crucial barriers influencing the ability of communities to achieve more sustainable states?
- What are the interconnections among community planning and management decisions that would best allow decision-makers to recognize possibilities for co-benefits and unintended consequences?
- What are the most important considerations in maximizing the resilience of planning and management options in the face of changing contexts including climate change, demographic change, and change in economic base?
- What are the most important factors guiding community decision-making, and how can understanding these factors allow us to better engage communities, invoke change, and more effectively assist them in achieving their sustainability goals?
- Which decisions and approaches are best suited to EPA expertise and experience ?

# SHC Research Structure



## Theme 2 - Decision Support Tools, Models, Data, And Metrics

- Decision Analysis
- National Atlas
- Indicators and Metrics
- Community Health
- Ecosystem Services and benefits
- Sustainable Technology

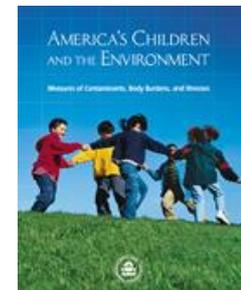


# SHC Research Structure

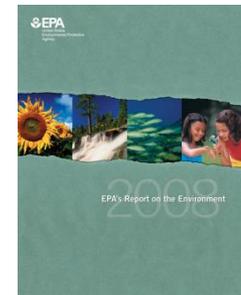


## THEME 3 – Targeted Partner Needs

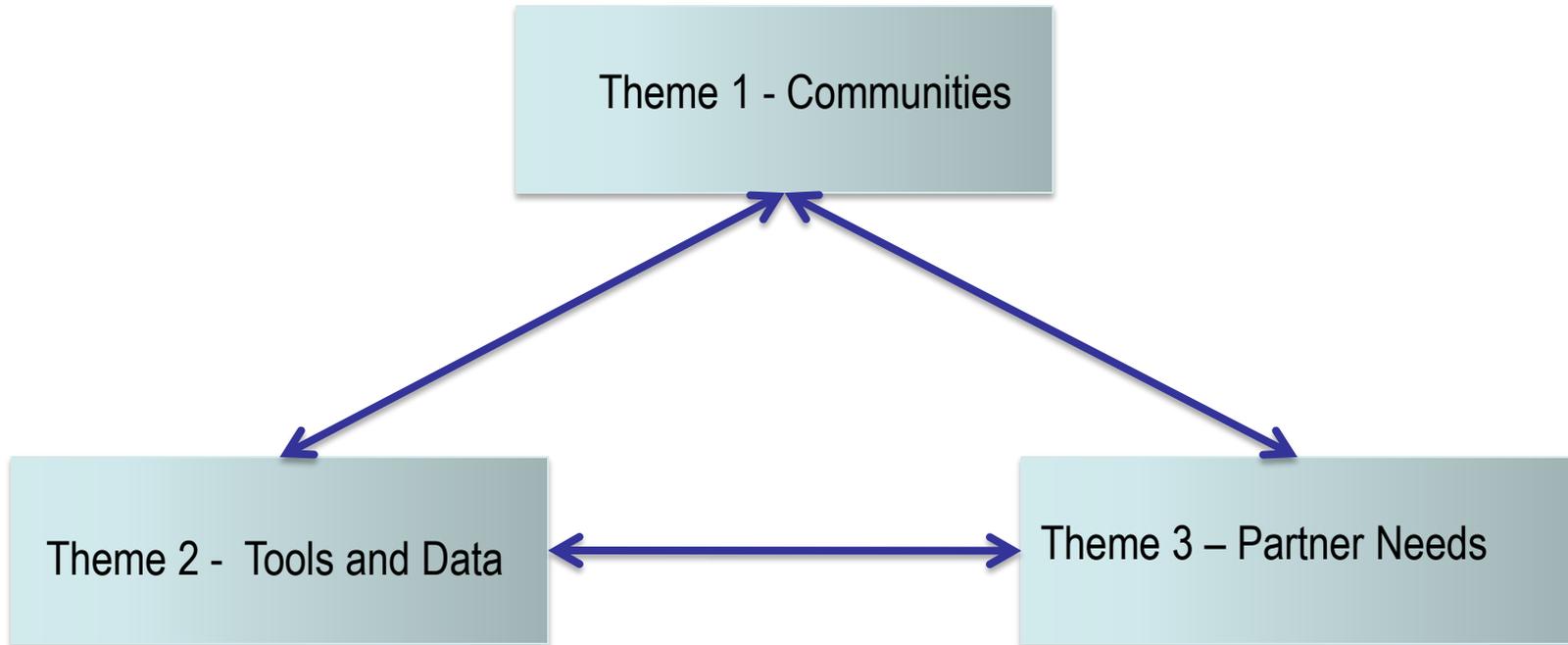
- Contaminated Site management and restoration
- Waste and Materials Management
- Nitrogen (regulatory support)
- Environmental Justice
- Children's Health
- Report on the Environment
- Fellowships



Goal will be to integrate these into themes 1 and 2 to the degree possible over time



# SHCRP Theme Structure



# Coordination

- Just about every Federal Agency/Department – HUD, DOT, DOE, USDA, USGS, DOC, NIEHS, CDC and many others.
- EPA Office of Sustainable Communities and Office of Environmental Justice
- EPA Regions and Program Offices
- Community Sustainability NGOs (e.g., ICLEI and others)
- Real Communities
- Other groups depending on the area of research (for example decision support platform, OEI).



# SHCRP+ Outcome



**Within 20 years SHCRP will :**

Lead to healthier children, protected ecosystem services, cleaner air and water, less waste, and more sustainable communities through integrated, transdisciplinary, systems research

.....and in partnership with the Agency's policy offices,

Result in an integrated systems policy and a a systems policy office that will expand the alternatives for developing solutions that complement and reinforce current regulatory approaches through increased flexibility to achieve the mission of the Agency—protect human heath and the environment

