

# **Sustainability, Human Health and Well-Being: Introduction**

NAS Roundtable on Science and Technology for Sustainability  
December 6, 2013



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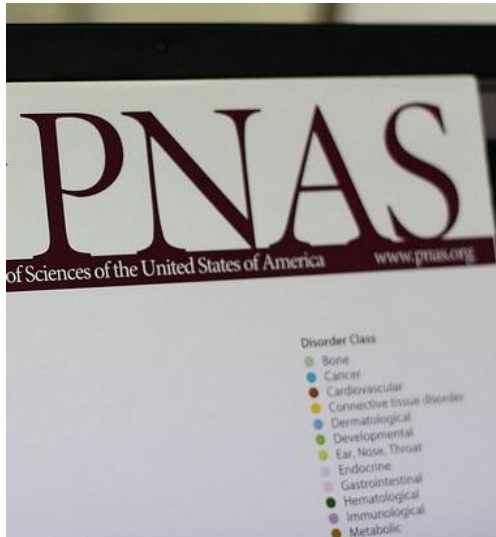


# Sustainability science and health

2007-11: of **308** papers published in *PNAS*

Sustainability Science section:

- Most on forests & crops, waterways & coastal systems, land use, nutrient cycles, energy production, ecosystem services
- Only **15** (<5%) papers directly and quantitatively focused on human outcomes:
  - 1 each on heat stress, kidney stones, Rift Valley fever, diarrhea, social vulnerability to natural hazards, cardiovascular disease
  - 2 each on pollution-related mortality, public health systems
  - 5 on parasitic diseases
  - (not counting 7 papers in a 2007 special issue on poverty and hunger)



## Sustainability Science

Proceedings of the National Academy of Sciences of the United States of America



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### About

PNAS has launched a section of the journal dedicated to sustainability science, an emerging research area dealing with the interactions between natural and social systems, and with the challenge of sustainability: meeting the needs of present and future generations while substantially reducing poverty and conserving the planet's life support systems.

# Sustainability science and health

Search major medical journals on  
“environmental sustainability” (2002-11)

-  The NEW ENGLAND  
JOURNAL of MEDICINE : 1 paper
-  **JAMA**<sup>®</sup> : 2 papers



# The core concepts



## Health:

“a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity”

-WHO

## Public health:

“what we, as a society, do collectively to assure the conditions in which people can be healthy”

- IOM, *The Future of Public Health*

## Sustainability:

“harvesting or using a resource so that the resource is not depleted or permanently

-Merriam Webster

What's  
missing?

## Development:

“development that meets the needs of the present without compromising the ability of future generations to meet their own needs”

- WCED "Our Common Future"



# The core concepts

## **Health:**

“a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity”

## **Public health:**

“what we, as a society, do collectively to assure the conditions in which people can be healthy”

1. No time dimension
2. Limited sense of context
3. No mention of equity

# The core concepts



1. No concept of health
2. Limited curb appeal
3. No mention of equity

## **Sustainability:**

“harvesting or using a resource so that the resource is not depleted or permanently damaged”

## **Sustainable development:**

“development that meets the needs of the present without compromising the ability of future generations to meet their own needs”

# Sustainable health

A state of complete physical, mental and social well-being,  
in physical, social, economic and political conditions in which people can thrive,  
with equitable access to those conditions,  
and achieved in ways that do not deplete or permanently damage needed resources,  
so that future generations can also enjoy such conditions.

# Where do health and sustainability intersect?

- Buildings



- Transportation



- Urban design



- Nature



- Materials



- Energy



- Agriculture



- Preparedness



- Data





# This session's agenda:

## Domains of Sustainability with Health Implications

- Urban design



**GEORGE  
LUBER**

- Transportation



**RALPH  
BUEHLER**

- Energy



**KIRA  
FORTUNE**

- Agriculture



**DAVID  
WALLINGA**

## The second session's agenda:

### Translation of Sustainability Science to Public Health

- Linking health agencies and organizations to sustainability
- Health Impact Assessment as a sustainability strategy

# Themes to watch for

- How are (or aren't) health and sustainability compatible concepts?
- Can they be combined (“sustainable health”)?
- How and where is “sustainable health” implemented?
- How can co-benefits be a) optimized, and b) quantified?
- How can health agencies and organizations engage with sustainability?

Thank you!

