



West Coast Climate & Materials Management Forum

18 April 2019

**A Review of Sustainability Frameworks: Expanding
Material Stewardship Potential**

West Coast Climate and Materials Management Forum

The West Coast Climate and Materials Management Forum is a collaboration of state, local, and tribal government

- ▣ Develop ways to institutionalize sustainable materials management practices.
- ▣ Develop tools to help jurisdictions reduce the GHGs associated with materials



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Check out the Forum's Resources

- Original Report Connecting Materials/Climate
- Research Summaries
- Turn-key Materials Management Presentation
- Climate Action Toolkit
- Food: Too Good to Waste Toolkit
- Climate Friendly Purchasing Toolkit
- Reducing GHGs Through Composting and Recycling

www.westcoastclimateforum.com



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West Coast Climate Forum

Webinar Series Disclaimer

This webinar is being provided as part of the West Coast Climate and Materials Management Forum Webinar Series. The Forum is a collaboration of state, local, and tribal governments. We invite guest speakers to share their views on climate change topics to get participants thinking and talking about new strategies for achieving our environmental goals. Mention of trade names or commercial products does not constitute endorsement or recommendation for use.

Please note the opinions, ideas, or data presented by speakers in this series do not represent West Coast Climate and Materials Management Forum members policy or constitute endorsement by the forum.

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Today's Speakers



Maurie Cohen is Director of the Program in Science, Technology, and Society at the New Jersey Institute of Technology. He is also Editor of *Sustainability: Science, Practice, and Policy* (SSPP), Associate Editor of *Environmental Innovation and Sustainability Transitions*, and co-founder and co-coordinator of the Future Earth Knowledge-Action Network on Systems of Sustainable Consumption and Production. His books include *The Future of Consumer Society: Prospects for Sustainability in the New Economy*, *Social Change and the Coming of Post-consumer Society*, *Putting Sustainability into Practice: Applications and Advances in Research on Sustainable Consumption*, *Innovations in Sustainable Consumption: New Economics, Socio-technical Transitions and Social Practices*, and *Exploring Sustainable Consumption: Environmental Policy and the Social Sciences*. He received his PhD. in regional science from the University of Pennsylvania.



Minal Mistry is the business initiatives lead with the Oregon Department of Environmental Quality. He works with a wide range of entities to implement strategies for [Oregon's 2050 Vision for Materials Management](#). His primary focus is on helping businesses produce and consume materials in more sustainable ways. Minal supports concept development, research, and capacity building in support of the Vision. His professional experiences include life cycle assessment, environmental testing, information services, technical training, and consulting for implementing Design for Environment (DfE) strategies for consumer-packaged goods. Minal is a biologist with experience in business, environmental NGOs and government.



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Today's Speakers



- **Moderator: Babe O'Sullivan** is a Sustainable Consumption Specialist with the Oregon Department of Environmental Quality, Materials Management Program. She's worked as a consultant for the Urban Sustainability Directors' Network (USDN), leading the Sustainable Consumption in Cities project, a multi-year initiative exploring the role of cities in advancing sustainable consumption. She helped to design and launch the USDN Sustainable Consumption Toolkit providing guidance and resources to cities. Previously, Babe was the Sustainability Liaison for the City of Eugene, Oregon and a solid waste and recycling program coordinator for the City of Portland, Oregon. She holds an MBA from the University of California, Berkeley and a Bachelor of Science degree in Environmental Policy from the University of California, Davis.



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Sustainability frameworks



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Sustainability frameworks



- Array of frameworks
- Multiple “truths”
- Limitations



Sustainability frameworks

10

What are we aiming for?

How do these frameworks help us get there?

What from these multiple frameworks can inform a holistic, integrated approach?



Q&A



Maurie Cohen
New Jersey Institute of
Technology



Minal Mistry
Oregon Department of
Environmental Quality



Babe O'Sullivan
Oregon Department of
Environmental Quality



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Q&A

Links for more information:

□ <https://www.oregon.gov/deq/FilterDocs/mm-matsust.pdf>



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Fall 2019: More to come in the Webinar series



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THANK YOU!

Please fill out the survey you receive after the webinar.

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A Brief Overview of the United Nations' Sustainable Development Goals

Maurie Cohen, Director
Program in Science, Technology and Society
New Jersey Institute of Technology
E-mail: mcohen@njit.edu

Webinar Convened by the West Coast Climate & Materials Management Forum, April 18, 2019



SUSTAINABLE DEVELOPMENT GOALS











Millennial Development Goals

The SDGs grew out of a prior framework implemented in 2000 called the Millennium Development Goals (MDGs) which were largely focused on addressing extreme poverty in developing countries.



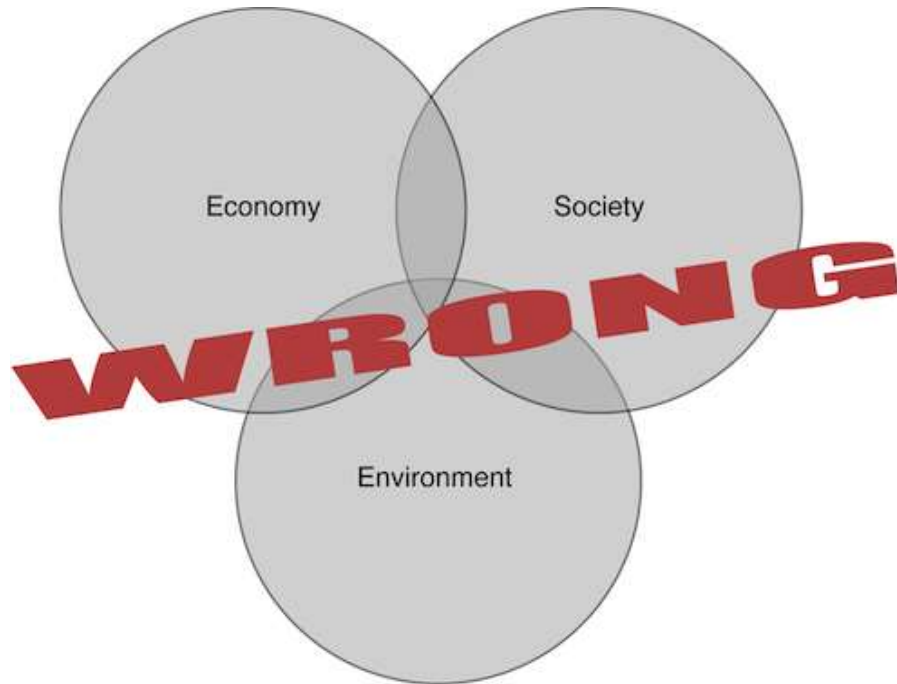
How Did We Do Meeting the MDGs?

Millennium Development Goal	Rating
1 – Halve Extreme Poverty	
2 – Achieve Universal Primary Education	
3 – Promote Gender Equality and Empower Women	
4 – Reduce Child Mortality	
5 – Improve Maternal Health	
6 – Combat HIV/AIDs, Malaria and other diseases	
7 – Ensure Environmental Sustainability	
8 – Develop a Global Partnership for Development	

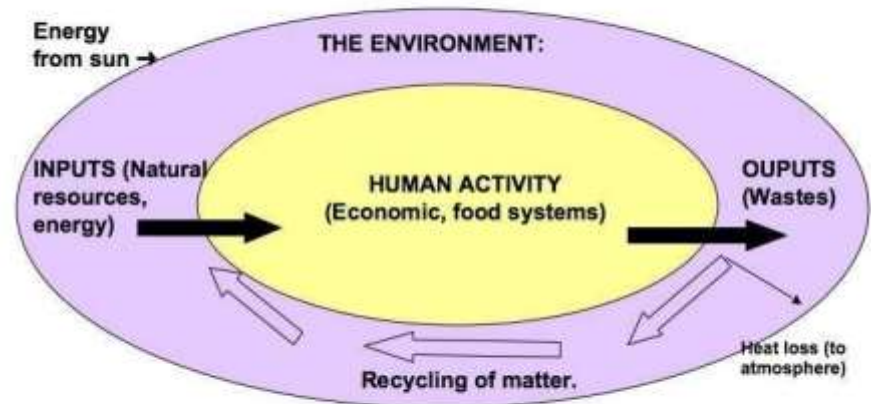
What Has Changed Since 2000?



What Has Changed Since 2000?



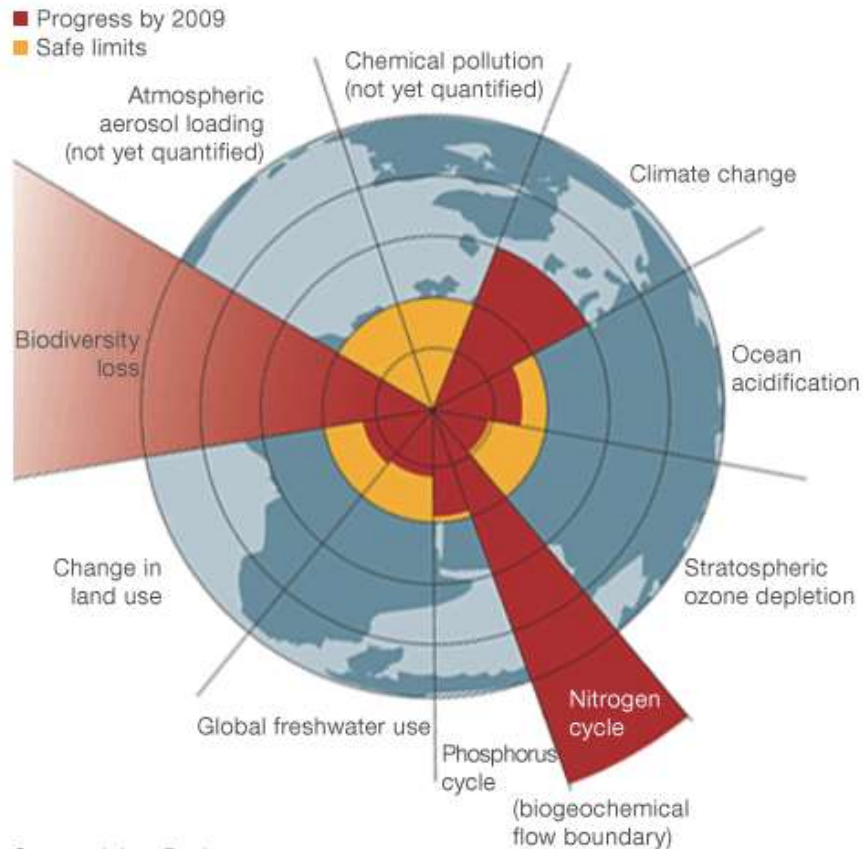
Ecological Economics Model: All human activity is embedded in the environment



Adapted from Herman Daly, "Introduction to the Steady-State Economy," in *Economics, Ecology, Ethics: Essays Toward a Steady-State Economy*, Herman Daly, editor. San Francisco: W.H. Freeman, 1980

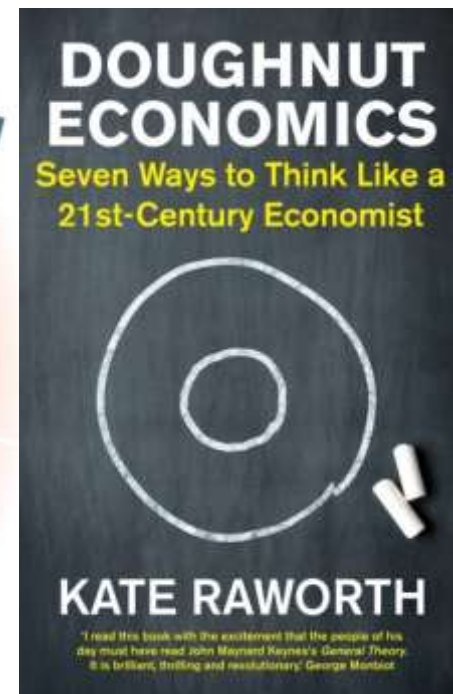
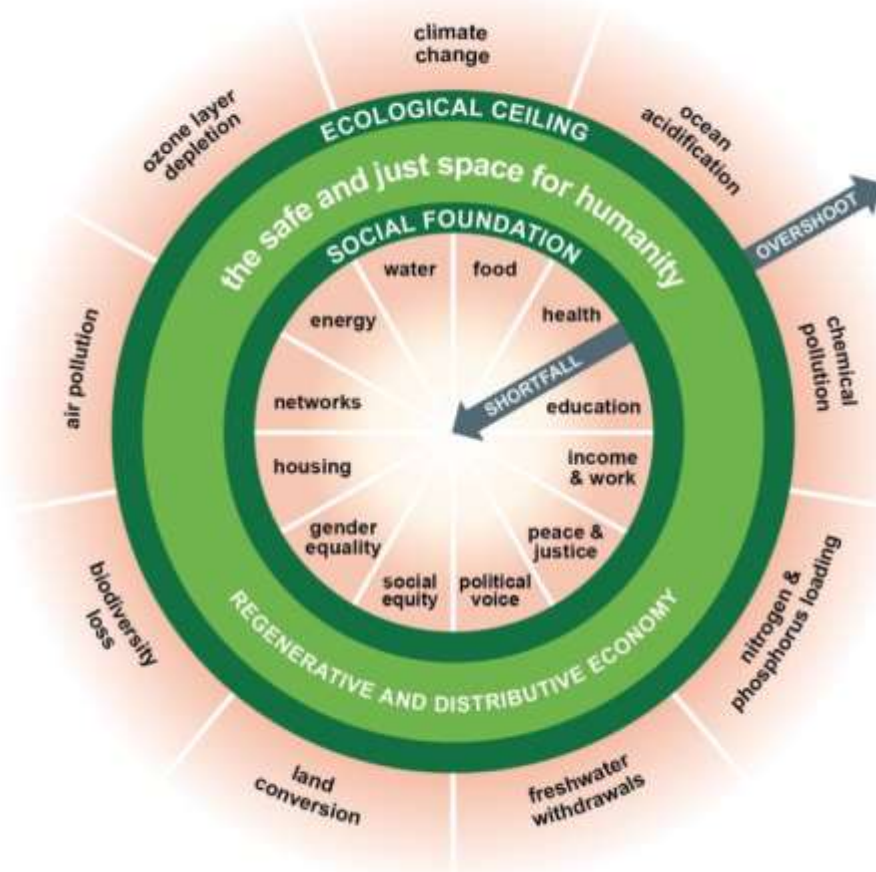
What Has Changed Since 2000?

Exceeding the planet's boundaries



Source: Johan Rockstrom

What Has Changed Since 2000?



What Has Changed Since 2000?

Recognition of the tremendous chasm between climate science (what needs to be done) and contemporary politics (what can be done).



What Has Changed Since 2000?



ANGUS DEATON
RECEIVES
NOBEL PRIZE
IN
ECONOMICS

**THE
GREAT
ESCAPE**
health, wealth,
and the origins
of inequality
**ANGUS
DEATON**

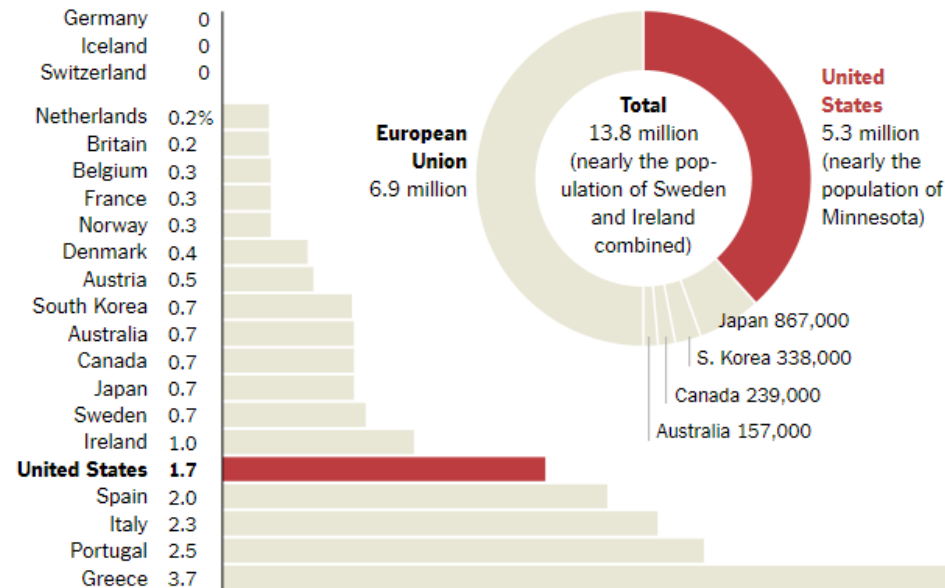
What Has Changed Since 2000?

Deeply Poor in Wealthy Lands

A tally of those living on \$4 a day or less in selected developed countries.

Percentage of total population that is poorest ...

... and their estimated numbers:

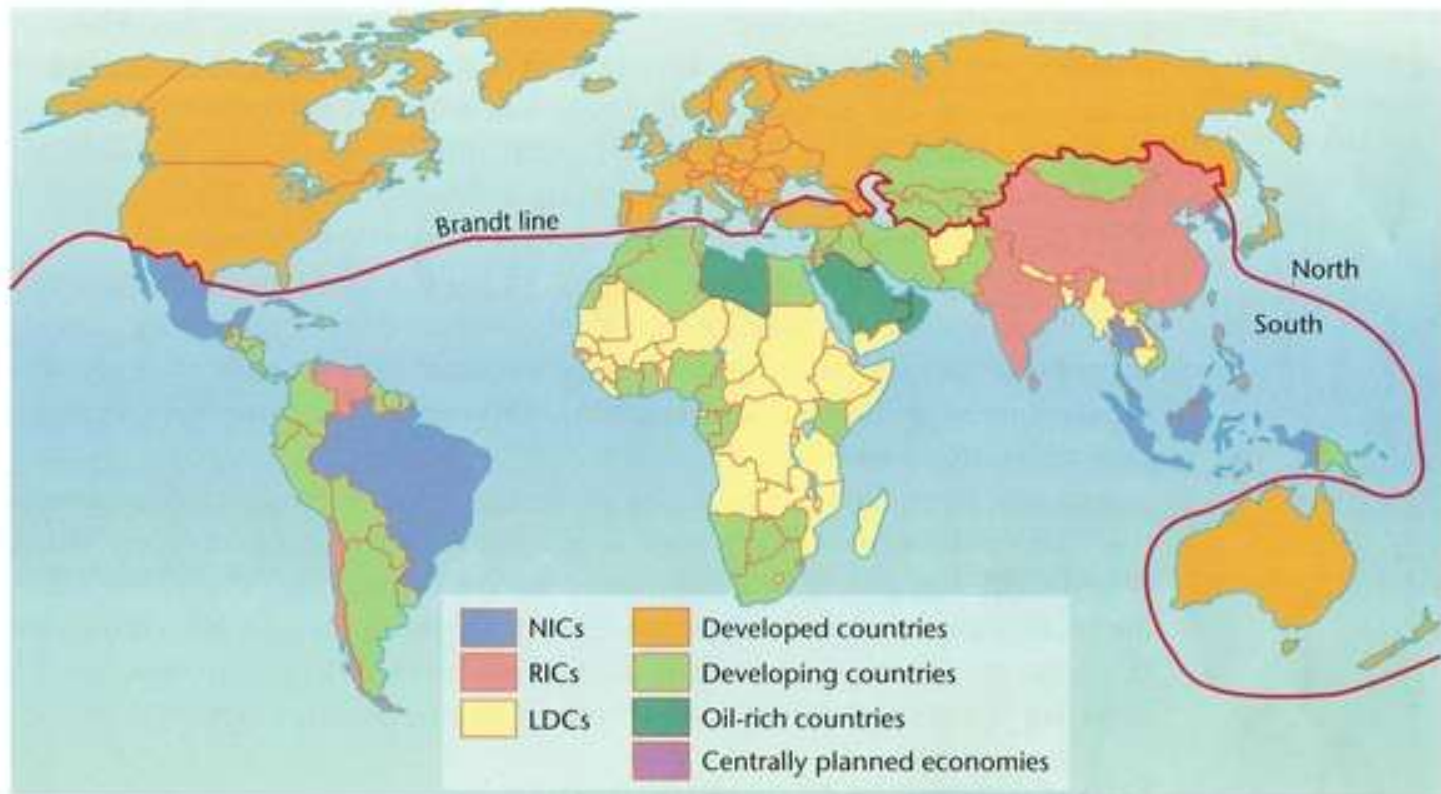


European Union total excludes Malta. Iceland, Norway and Switzerland are not in the E.U.

By The New York Times | Source: World Bank

What Has Changed Since 2000?

Recognition of the significance of “universal development” and the narrowing of distinctions between the global North and the global South.



What is Social Sustainability

The third set of factors inherent in sustainability issues are those related to social sustainability. These factors relate to the distribution of wealth and services within and between generations (i.e., intra- and intergenerational equity) as well as the distribution of rights to use environmental services contained within a given ecosystem. In addition, legal issues pertaining to property rights and the treatment of common law resources are factors of social sustainability.

Road to the Sustainable Development Goals



Road to the Sustainable Development Goals



**UNITED NATIONS SUMMIT TO ADOPT THE
POST-2015 DEVELOPMENT AGENDA**

**25 - 27 SEP 2015
NEW YORK**

Road to the Sustainable Development Goals





SUSTAINABLE DEVELOPMENT GOALS



THE SUSTAINABLE DEVELOPMENT GOALS

WHAT LOCAL GOVERNMENTS
NEED TO KNOW



SUSTAINABLE
DEVELOPMENT
GOALS

15
YEARS

17
GOALS

169
TARGETS



GLOBAL CHANGE

END POVERTY

PROTECT
THE PLANET

ENSURE
PROSPERITY

**PROMOTE SUSTAINED, INCLUSIVE & SUSTAINABLE
ECONOMIC GROWTH, FULL & PRODUCTIVE
EMPLOYMENT & DECENT WORK FOR ALL**

11 SUSTAINABLE CITIES
AND COMMUNITIES



**ENSURE SUSTAINABLE CONSUMPTION
AND PRODUCTION PATTERNS**

12 RESPONSIBLE
CONSUMPTION
AND PRODUCTION

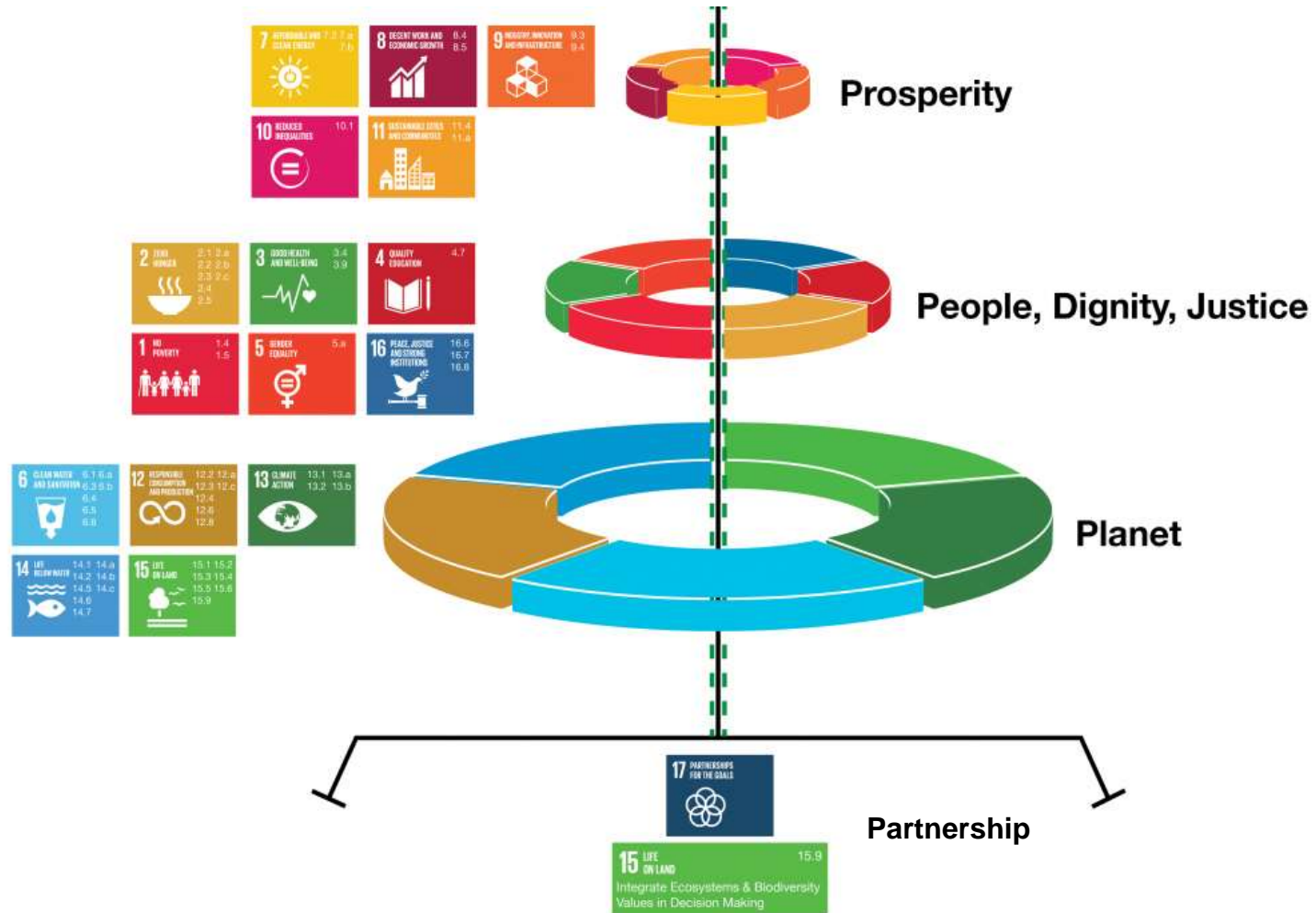


**TAKE URGENT ACTION TO COMBAT
CLIMATE CHANGE AND ITS IMPACTS**

13 CLIMATE
ACTION



Based on Six Principles



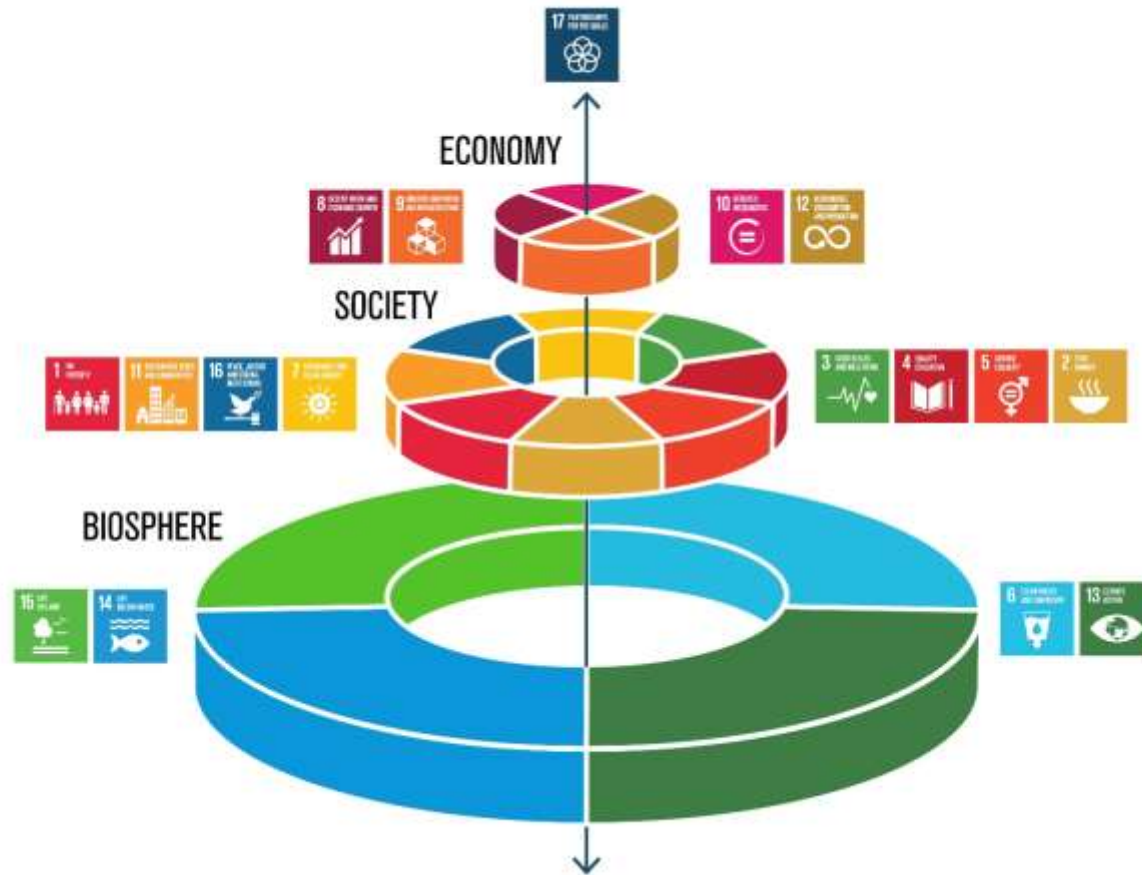
The Notion of Universality is Central to the SDGs



Universality

For the first time the goals of the 2030 Agenda are universal, and apply to developing and emerging countries as well to industrialised countries.

SDGs are Predicated on an “Indivisible Whole” that Combines Economic, Social, and Environmental Targets



SDGs are Meant to Break Down the Silos of Customary Problem Definition and Policy Making





Future of the Sustainable Development Goals

sustaining the sustainable

a systems look at material sustainability approaches

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18 April 2019



Minal Mistry | Oregon Department of Environmental Quality

opprobrium
: harsh criticism or censure

op·pro·bri·um

/ə'prōbrēəm/

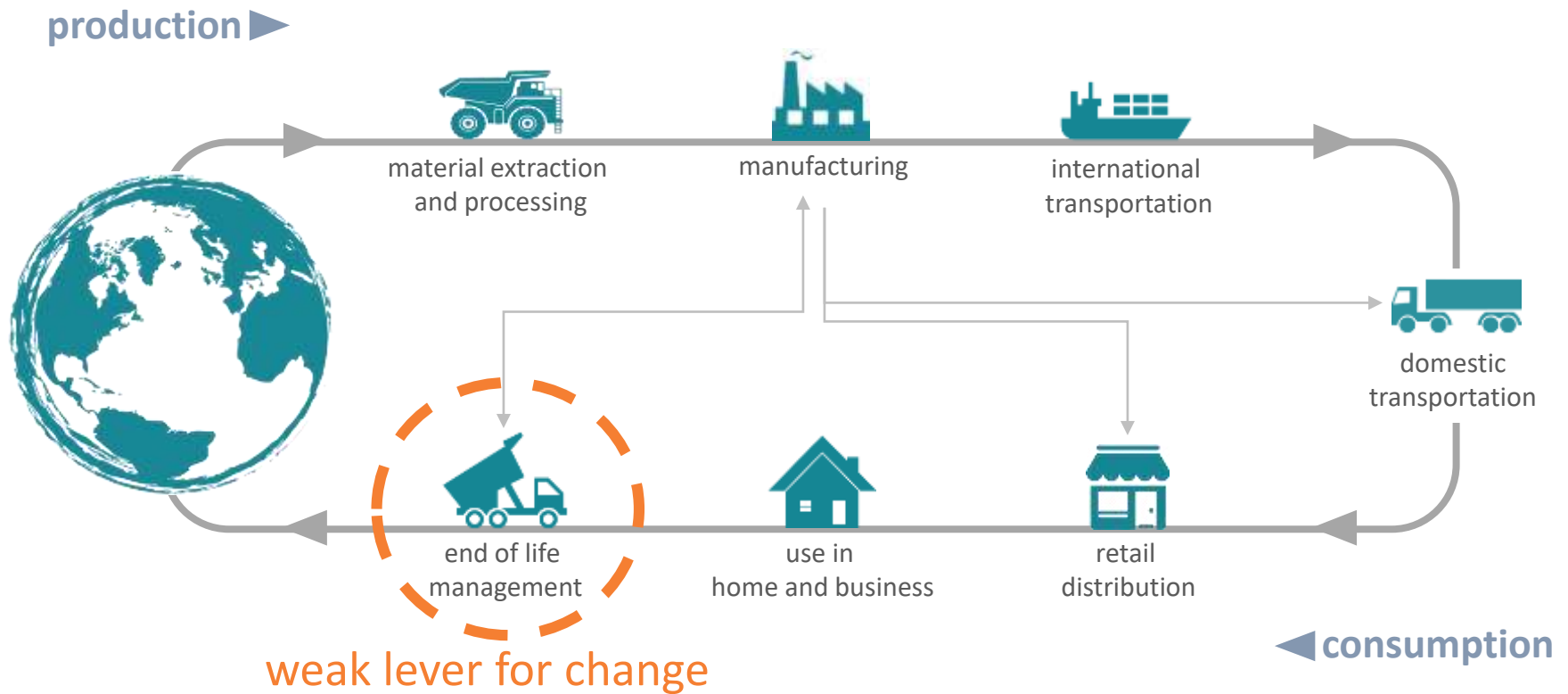


synopsis

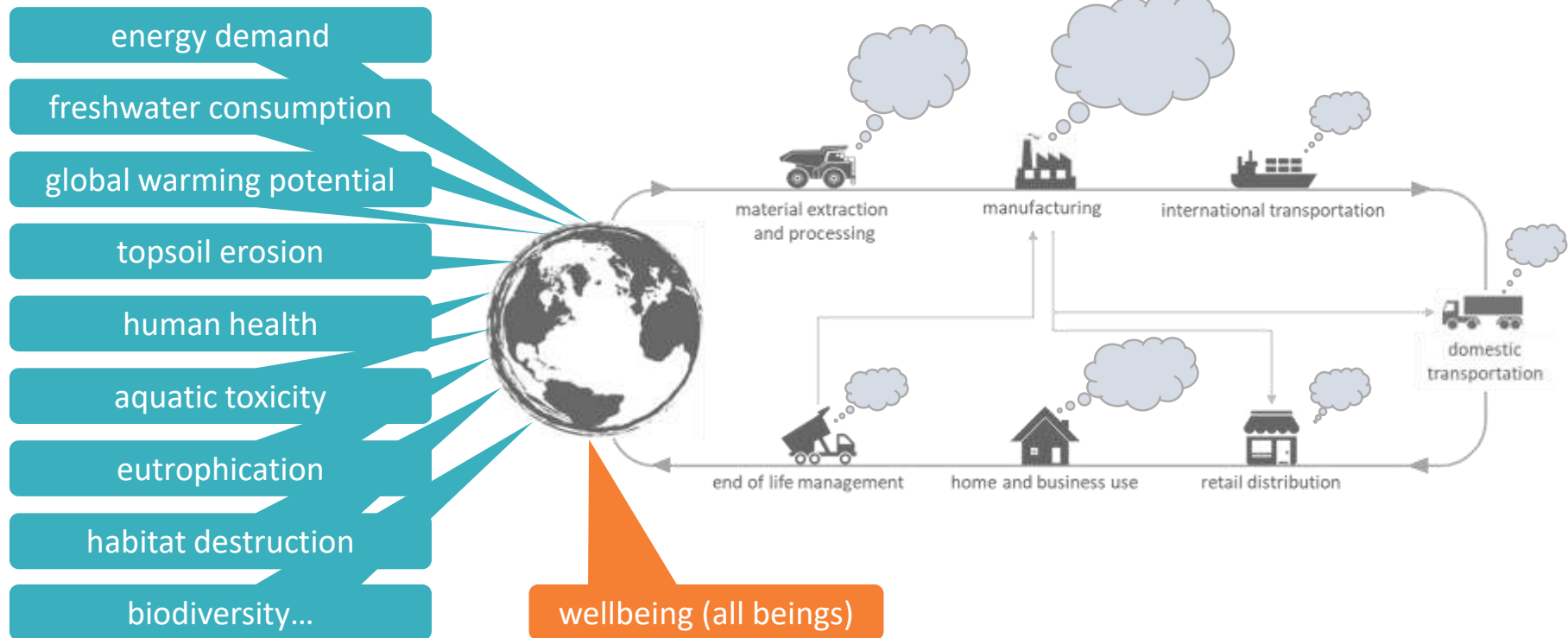
using a wide angle lens



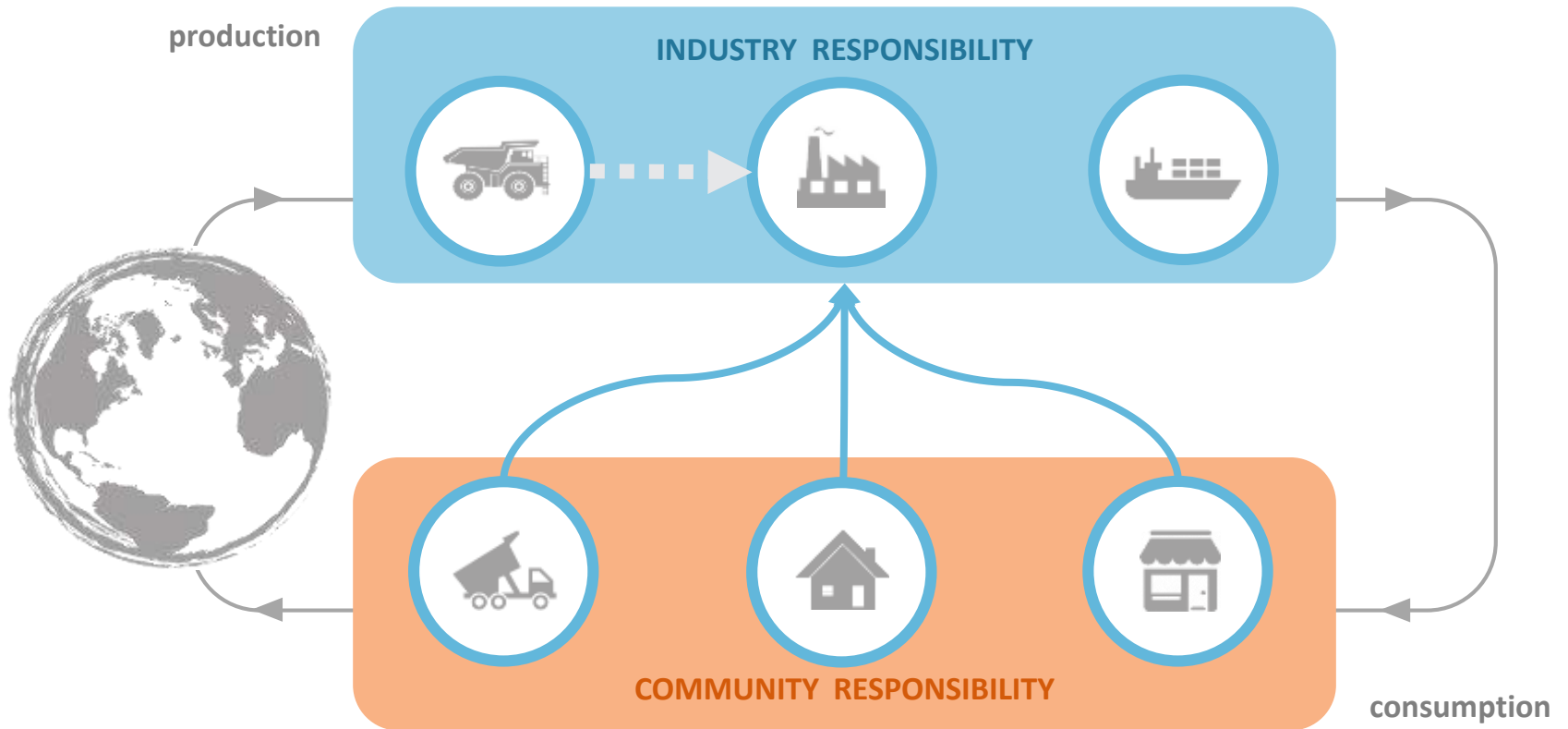
material life cycle



buttress environmental damage



life cycle material responsibility



sustaining wellbeing

sustainable human development



prelude to sustainable development



Source: UNDP

disclaimer

illuminating a path



‘Let us take the decision to **confront** the questions we have and explore our **mutual** curiosity, in order to throw light on our **similarities** without hiding our differences.’

- Jean-Francois Revel

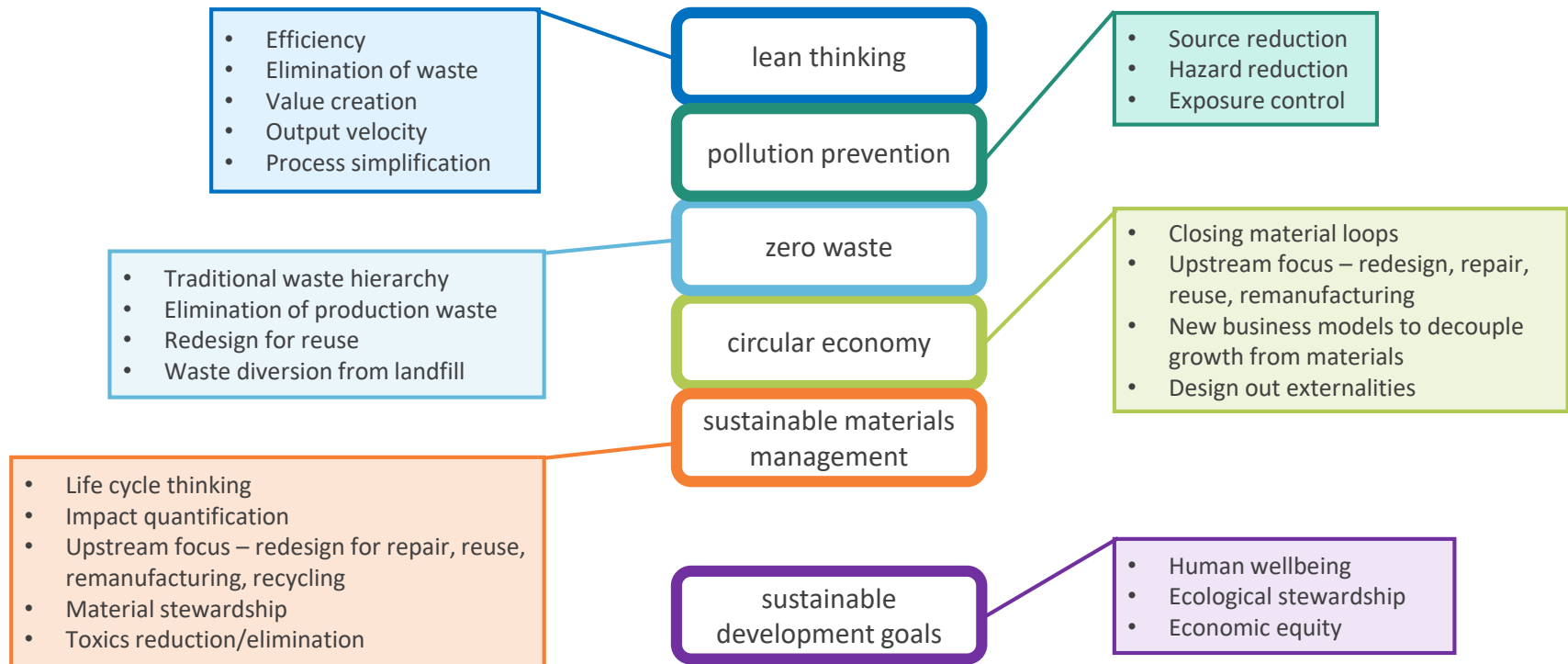


sustainability constructs

frameworks of organization

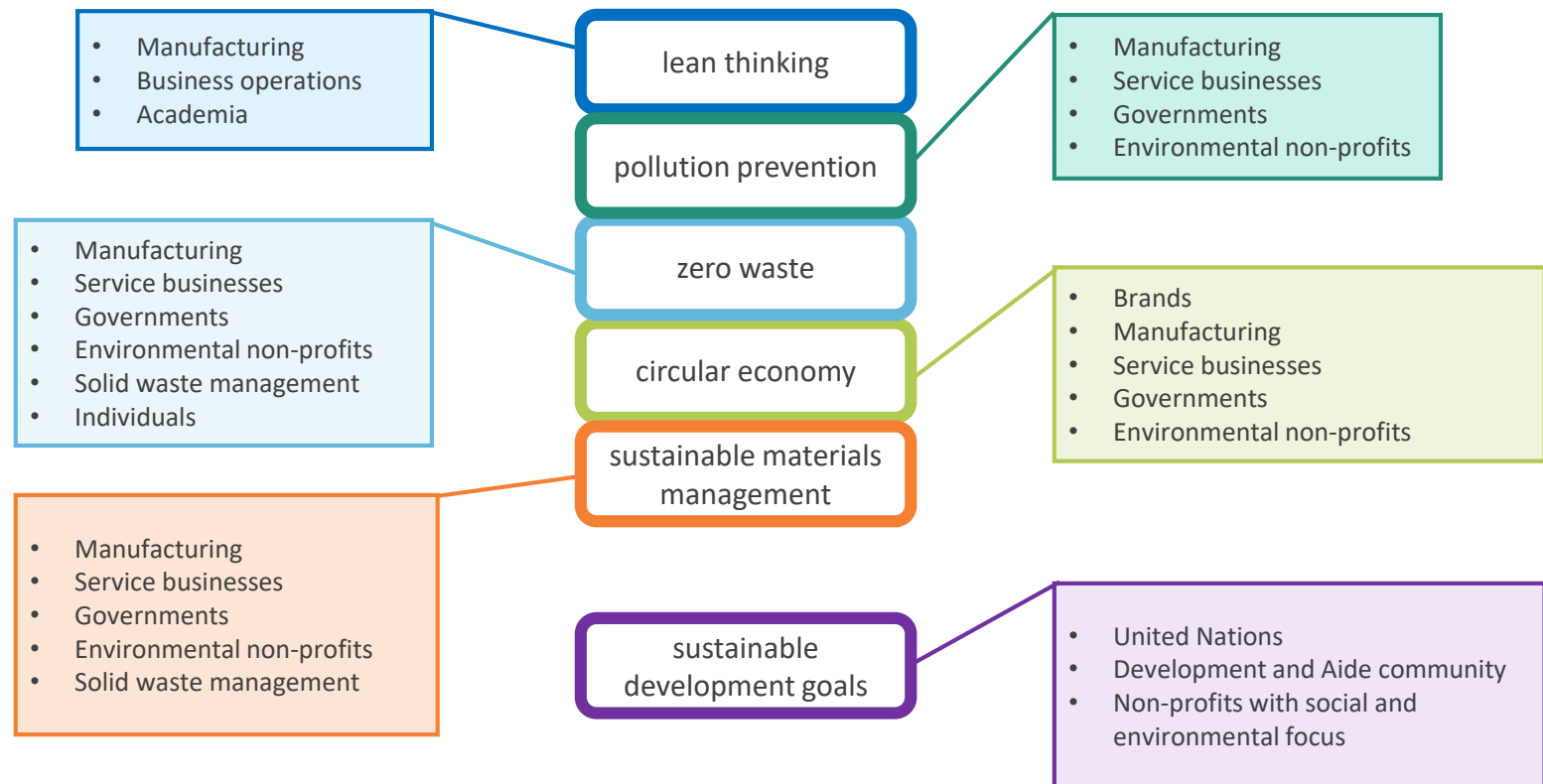


outlooks of different frameworks



*not a sustainability framework

who is **using** these frameworks



sustainability **focus** by frameworks

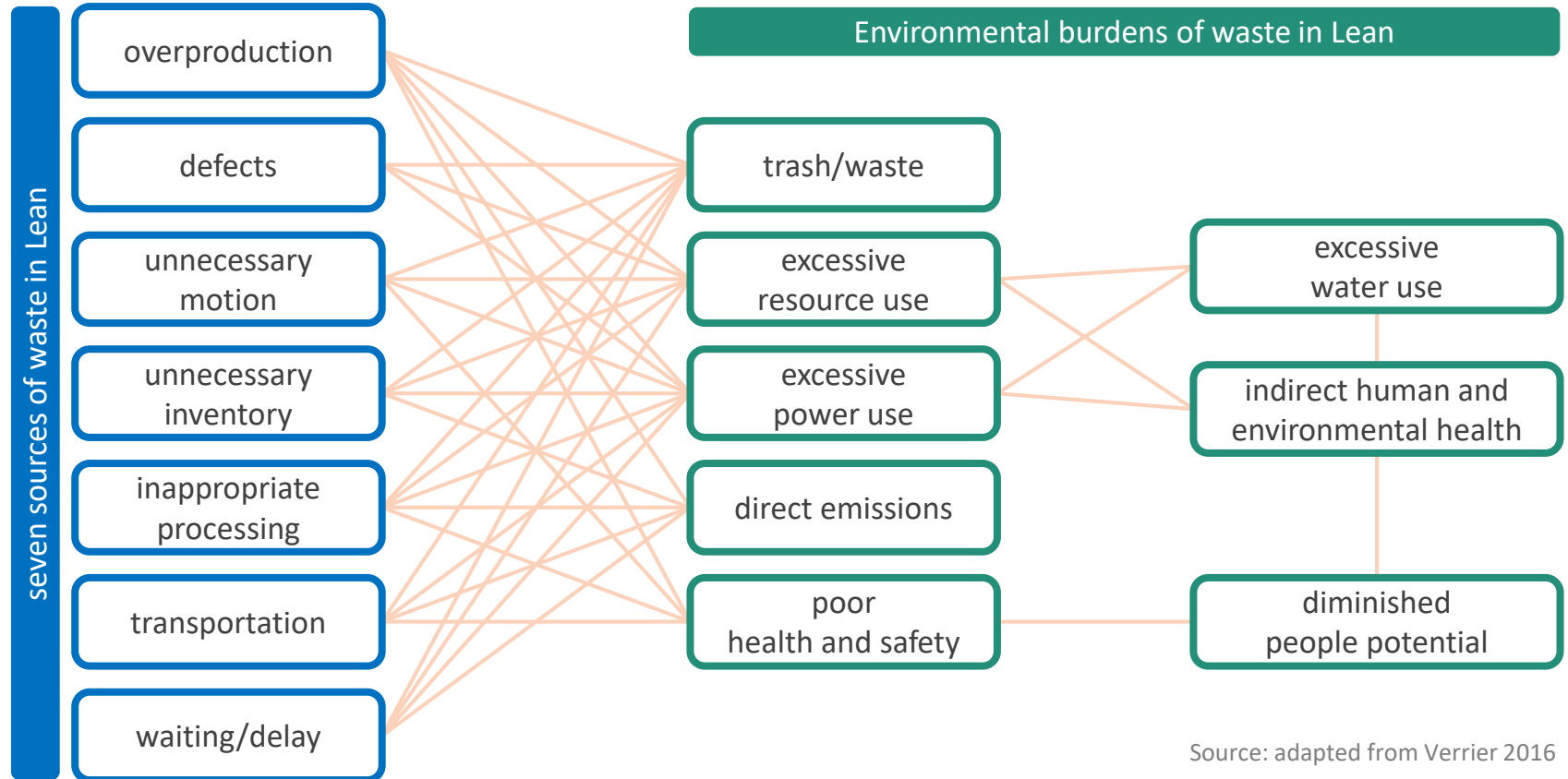
Framework	Principle Sustainability Focus Area		
	Biosphere (Environment)	Society	Economy
Lean Thinking (lean)			Business operations and production
Pollution Prevention (P2)	Avoidance of pollution via proactive preventive beyond compliance approaches		
Zero Waste (ZW)	Solid waste reduction/avoidance primarily via recycling and composting		Secondary (recycled) materials market
Circular Economy (CE)			Business growth via material circularity (recovery, closed loops, and redesign)
Sustainable Materials Management (SMM)	Reduction of environmental burdens associated with making and using materials		Secondary (recycled) materials market

lean thinking

optimize production via systematically eliminating waste to meet customer need

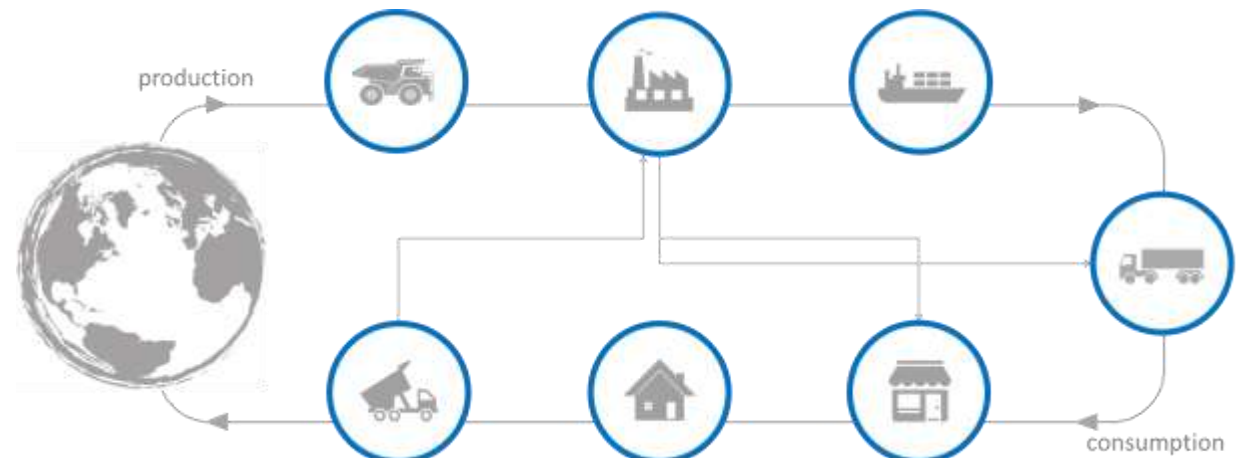


links between lean thinking and 'green'

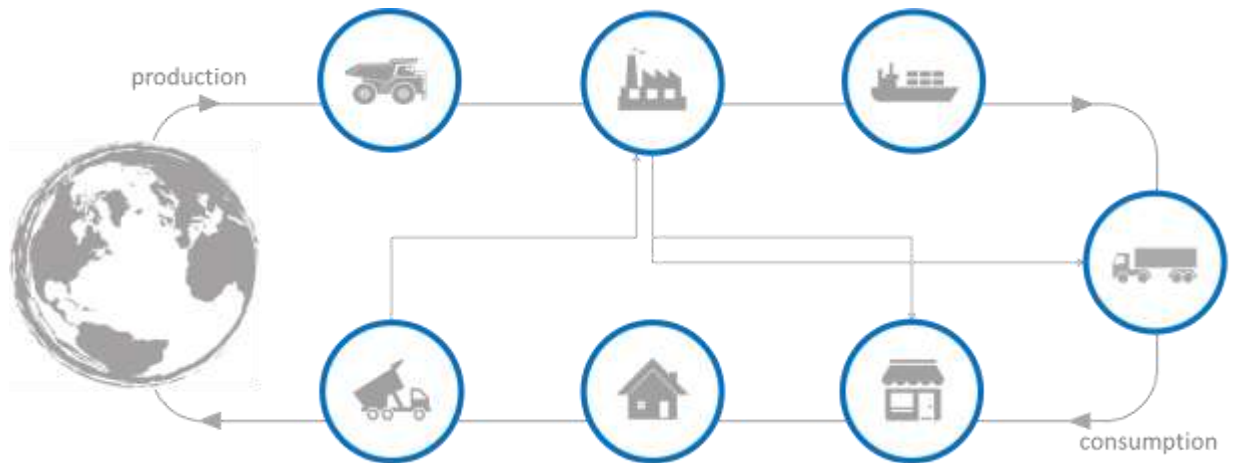


Source: adapted from Verrier 2016

Lean in theory



Lean in practice



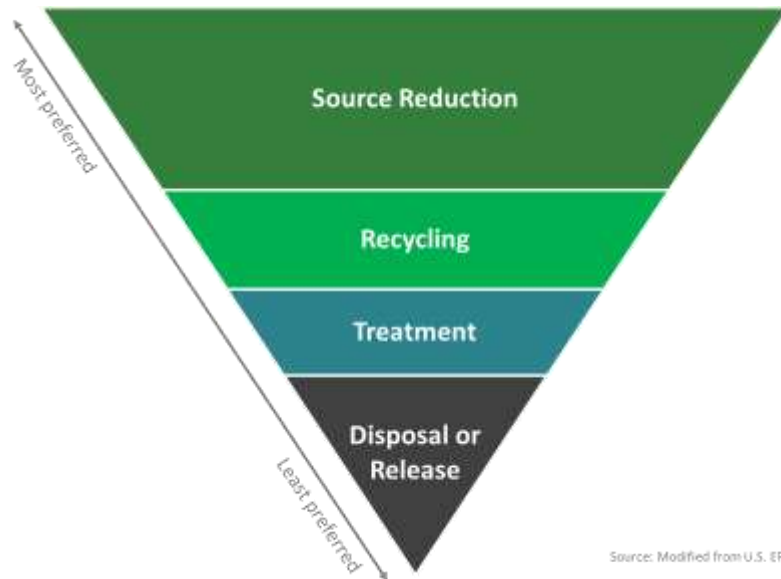
pollution prevention

reduce, eliminate, prevent pollution at the source



pollution prevention (P2)

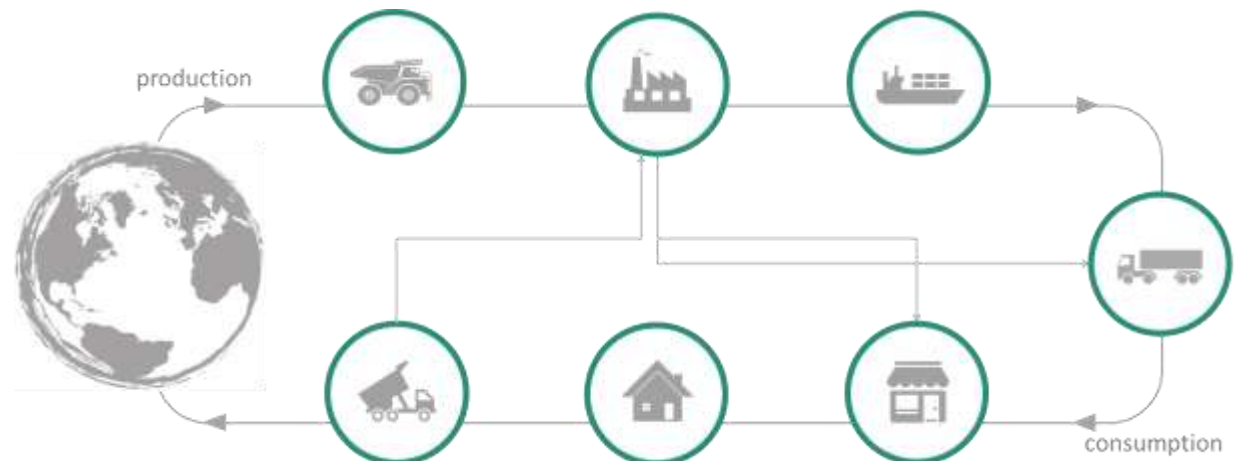
P2 hierarchy



core principles

1. Conserving and protecting natural resources
2. Reducing both financial costs (waste management and cleanup) and environmental costs (health problems and environmental damage)
3. More efficient use of financial resources through more efficient production in industry

P2 in theory



P2 in practice



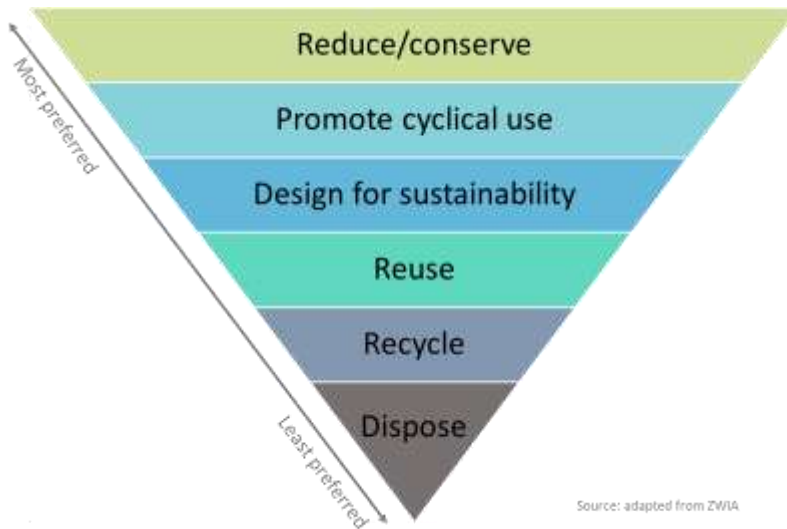
zero waste

aspires to totally eliminate the construct of garbage



zero waste (ZW)

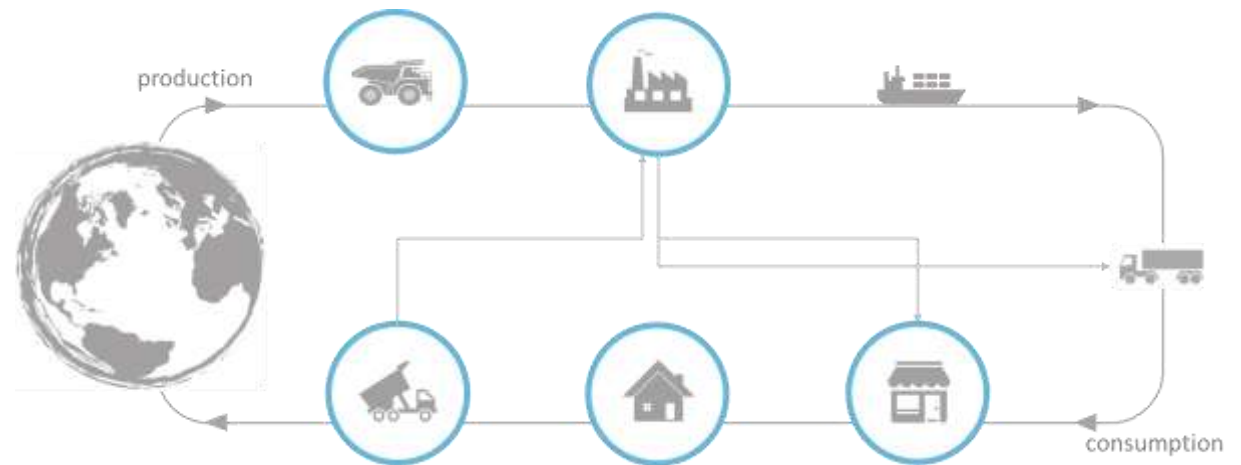
ZW hierarchy



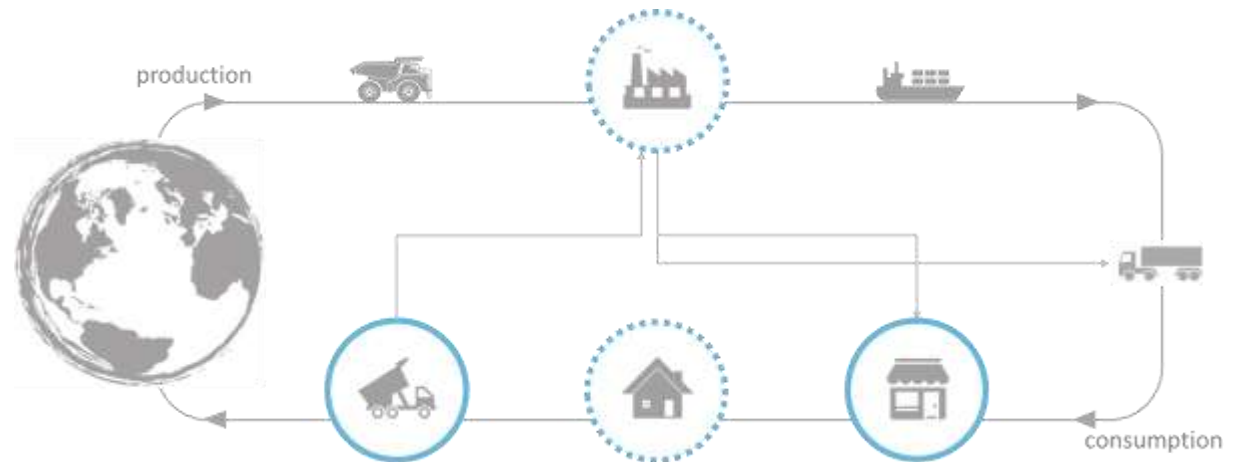
core principles

1. Commitment to the triple bottom line
2. Use Precautionary Principle
3. No waste to landfill or incineration
4. Responsibility: takeback products and packaging
5. Buy reused, recycled and compostable
6. Prevent pollution and reduce waste
7. Highest and best use
8. Use economic incentives for customers, workers and suppliers
9. Non-toxic production, reuse and recycling processes

ZW in theory



ZW in practice



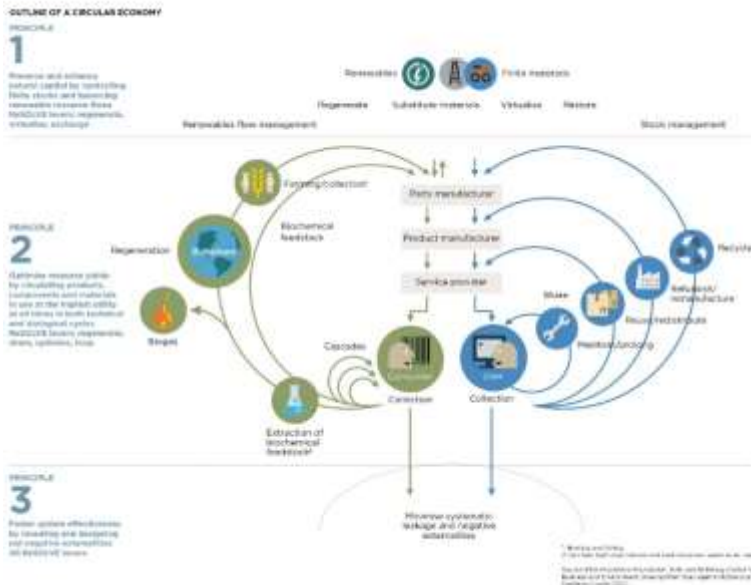
circular economy

regenerative system where resource inputs, waste, emissions, and energy leakage are minimized by slowing, closing, and narrowing material and energy loops



circular economy (CE)

CE hierarchy



core principles

1. Preserve and enhance natural capital
2. Circulating products, components, and materials at the highest utility
3. Reveal and design out negative externalities

CE in theory



CE in practice



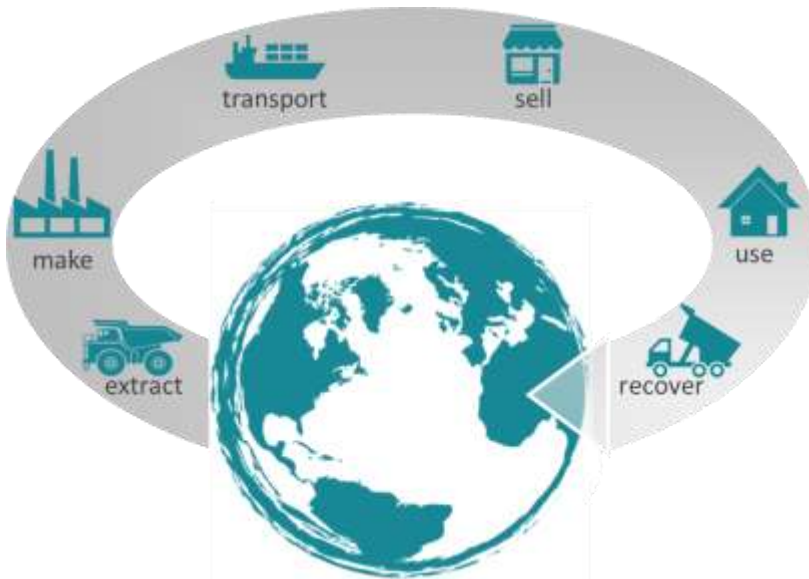
sustainable materials management

apply life cycle thinking to prioritize materials use for best and highest options



sustainable materials management (SMM or MM)

SMM flow



core principles

1. Preserve natural capital
2. Design and manage materials, products and processes using a lifecycle perspective
3. Use the full diversity of policy instruments to stimulate and reinforce sustainable economic, environmental, and social outcomes
4. Engage all parts of society to take active, ethically-based responsibility for achieving sustainable outcomes

SMM in theory



SMM in practice



Oregon's **organizing** approach

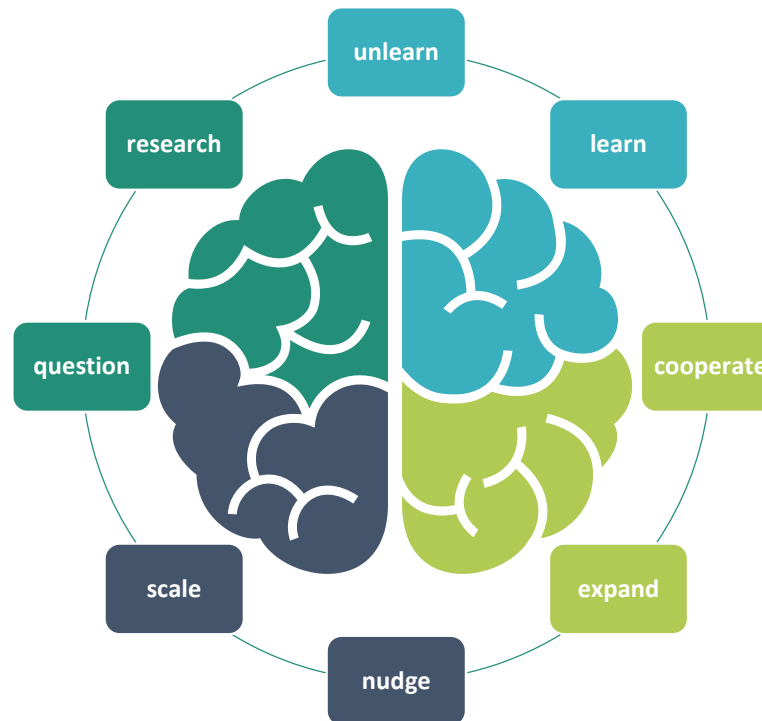
conserving resources ↔ protecting the environment ↔ living well

01 **foundation**

Improve base knowledge to illuminate pathways for positive change.

04 **policy**

Leverage science and collective energy to nudge towards lasting changes.



education 02

Share knowledge, learn new ways, and unlearn unhelpful habits.

collaboration 03

Engage productively to increase capacity and grow the community of practice.

PPT template from PresentationGO.com



synthesis

action  reaction



the **potential** of sustainability frameworks



the opportunities of sustainability frameworks



scope in theory



gaps in practice



connecting the dots

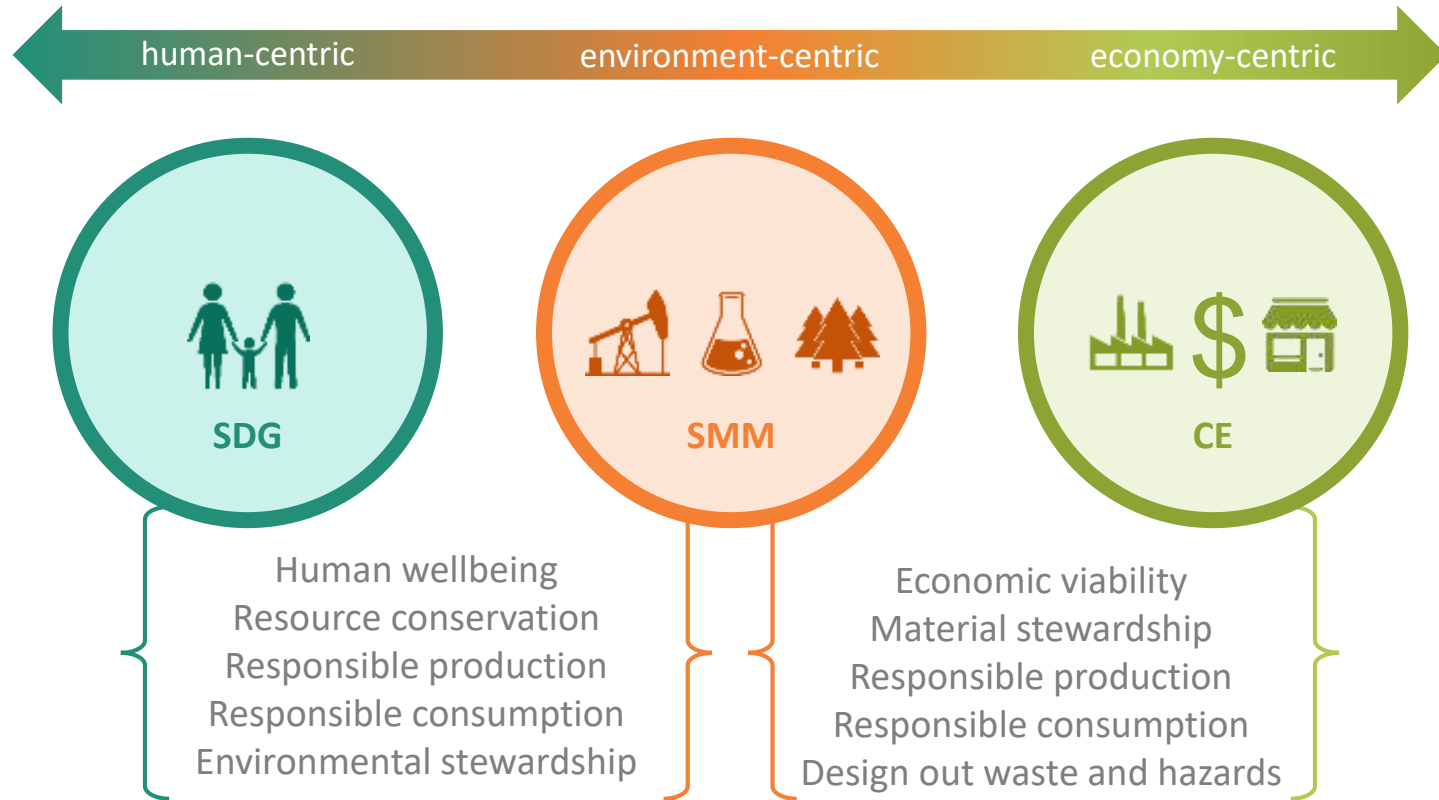
cooperation and collaboration



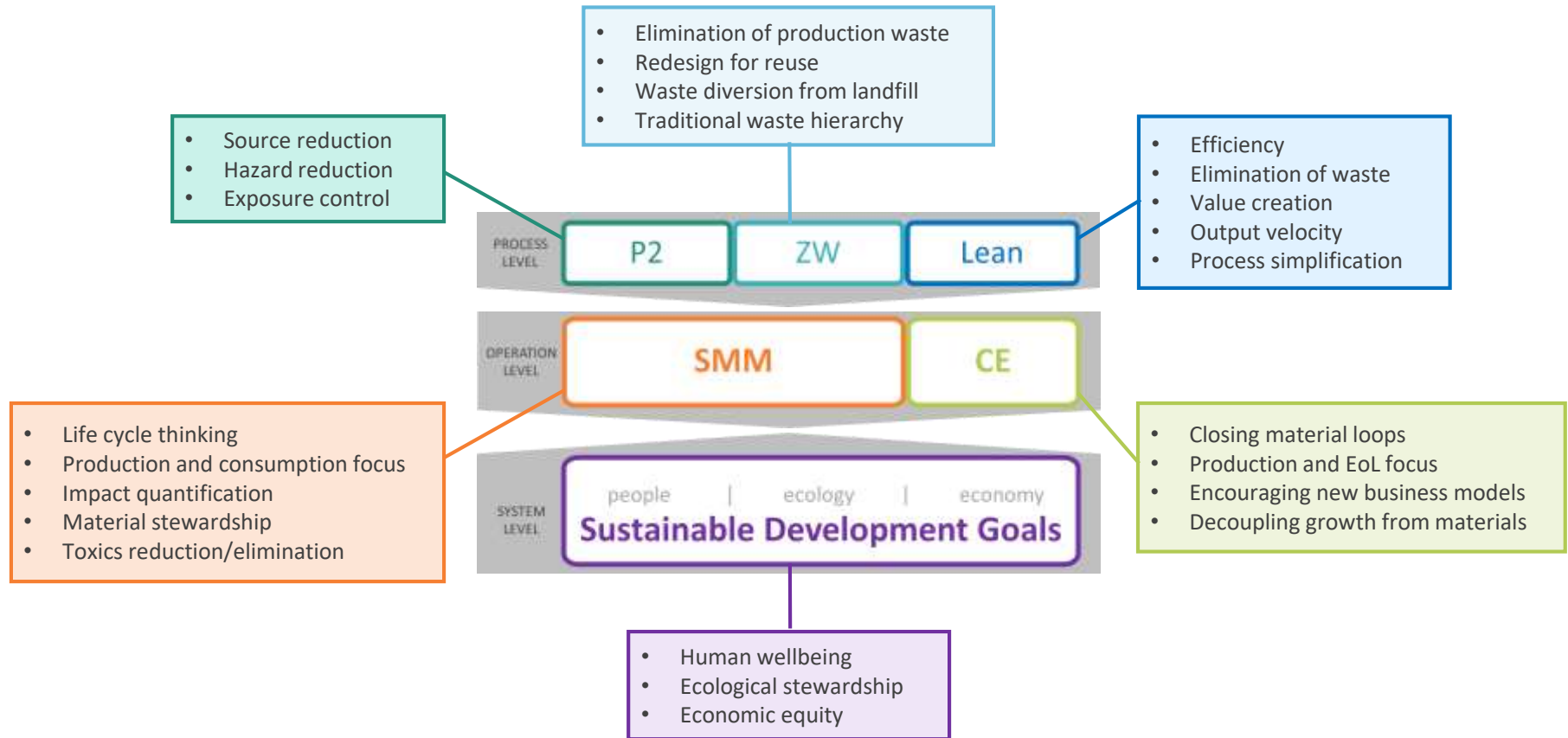
the **overlap** between frameworks

Sustainability Framework	P2	ZW	CE	SMM	Lean
Pollution Prevention (P2)					
Zero Waste (ZW)					
Circular Economy (CE)					
Sustainable Materials Management (SMM)					

an example – common ground



connecting the concepts

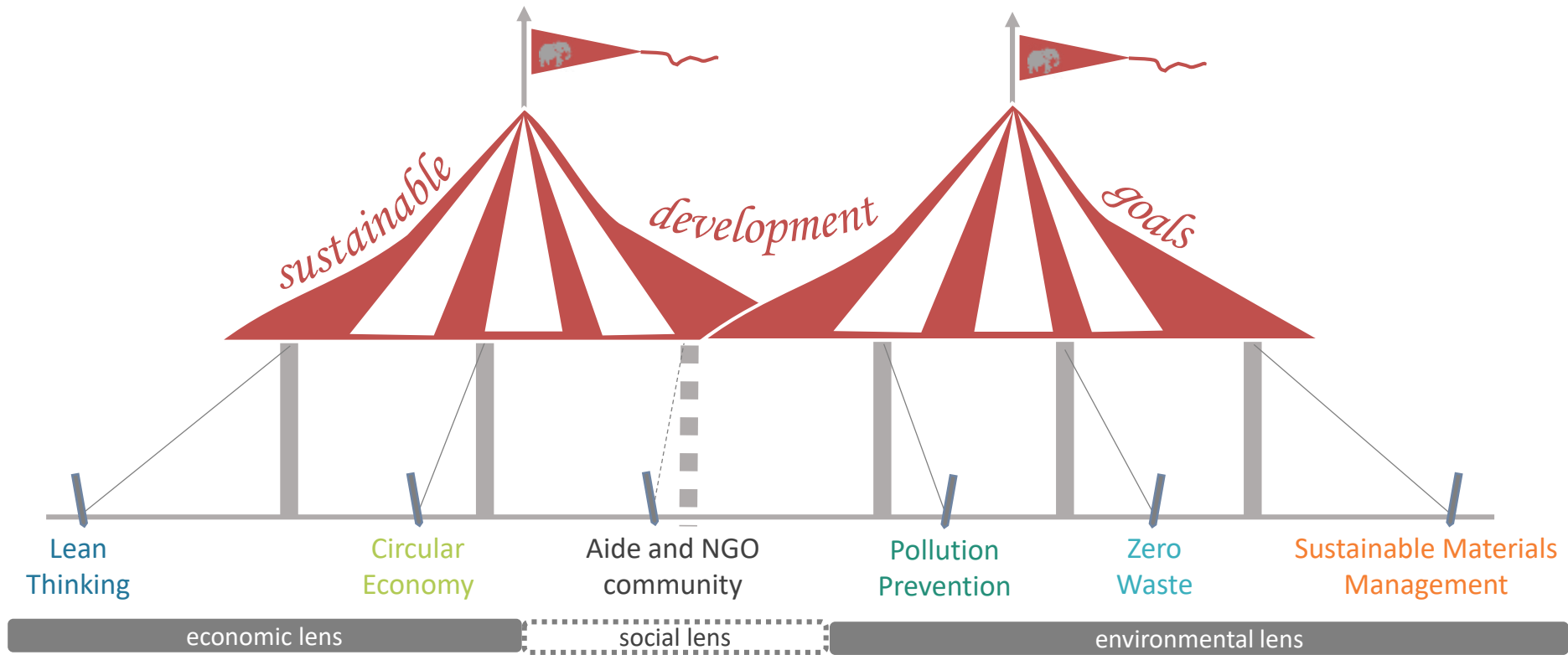


industrial ecology: **existing** supporting tools and knowledge

- Material characterizations
- Life cycle assessment (LCA)
- Hazard assessment
- Alternate assessment
- Green Chemistry
- Industrial symbiosis
- Process evaluation
- Living design
- Biomimicry...



the big development tent

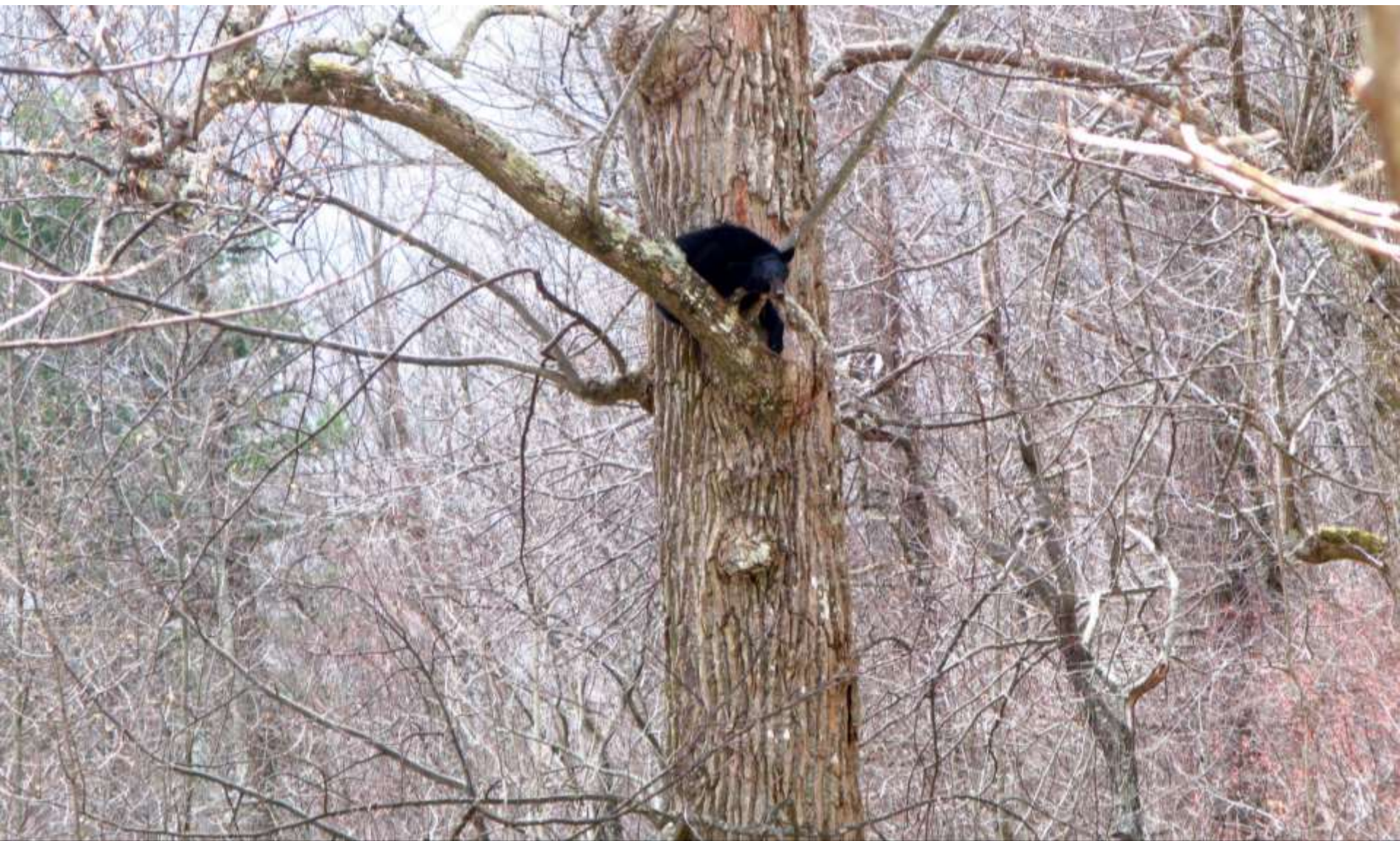


‘The pine tree, the leopard, the Platte River, and ourselves – we are at risk **together**, or we are on our way to a sustainable world together. We are each other’s destiny.’

- Mary Oliver from *Upstream*









‘In every age there is a **turning point**, a new way of seeing and asserting the coherence of the world.’

- J. Boronoski from *The Ascent of Man*



materials management

conserving resources

protecting the environment

living well

minal mistry | minal.mistry@state.or.us

