

An Introduction to The Natural Step Framework

Halifax

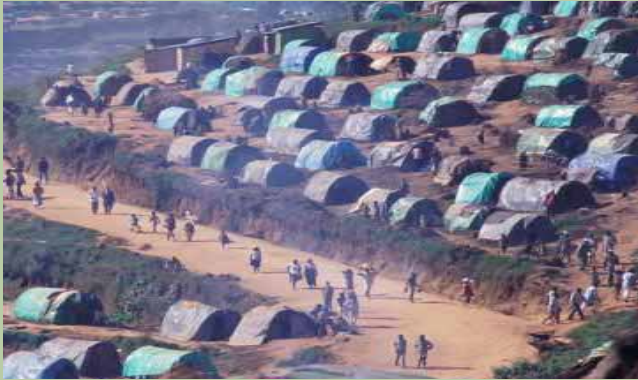
December 16th, 2005

Chad Park

The Natural Step Canada

1. Introduction to the Natural Step Framework
 - Backcasting
 - 4 principles of sustainability
 - Integrating social, economic, environmental
2. Applying the Natural Step Framework
 - ABCD
 - How does the Natural Step Framework relate to other tools and approaches?
3. Case studies and examples

QuickTime™ and a
TIFF (Uncompressed) decompressor
are needed to see this picture.



- **Human population** will grow from 6.1 billion to **9 billion** by 2050.
- The **global temperature** averaged 57.2°F in 1970 and 58°F in 1999.
- Nearly **half of the world's old growth forests** are gone.
- The 1950-1997 oceanic fish harvest grew from 19 million to 95 million tons, resulting in **major declines of many species**.



- Climate change -> unpredictable weather events; rising ocean levels; economic threats
- Collapse of fisheries
- Increasing costs of energy, natural resources, waste disposal
- Human health threats
- Urbanization -> decline of rural communities



The Funnel Paradigm



life supporting resources
declining



consumption of
life supporting resources
increasing

The Debate on Details

JOB vs. ENVIRONMENT:
Is there really a tradeoff?

Computers Model World's
Climate but How Well?

**Scientists are Disputing
the Fate of the Grizzly**

Cost Uncertainties Delaying Action
on Global Warming Policy

Endangered Species

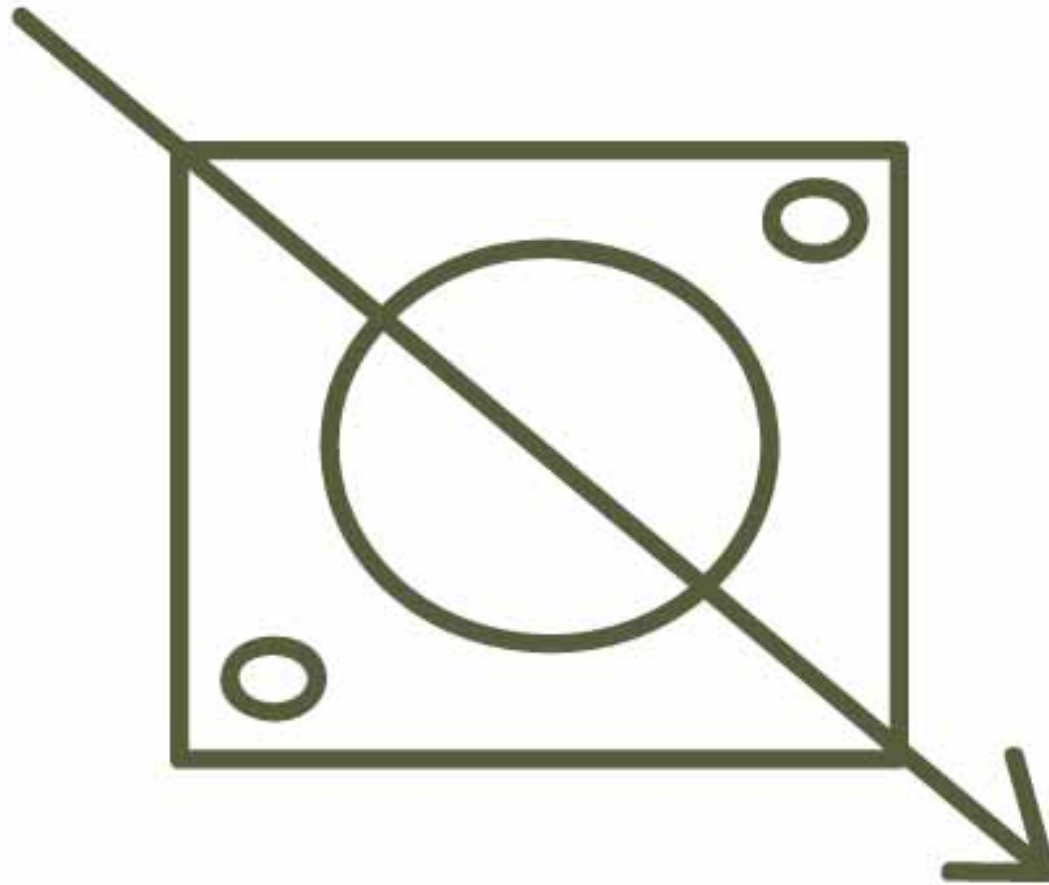
Who Cares About a Few Degrees?

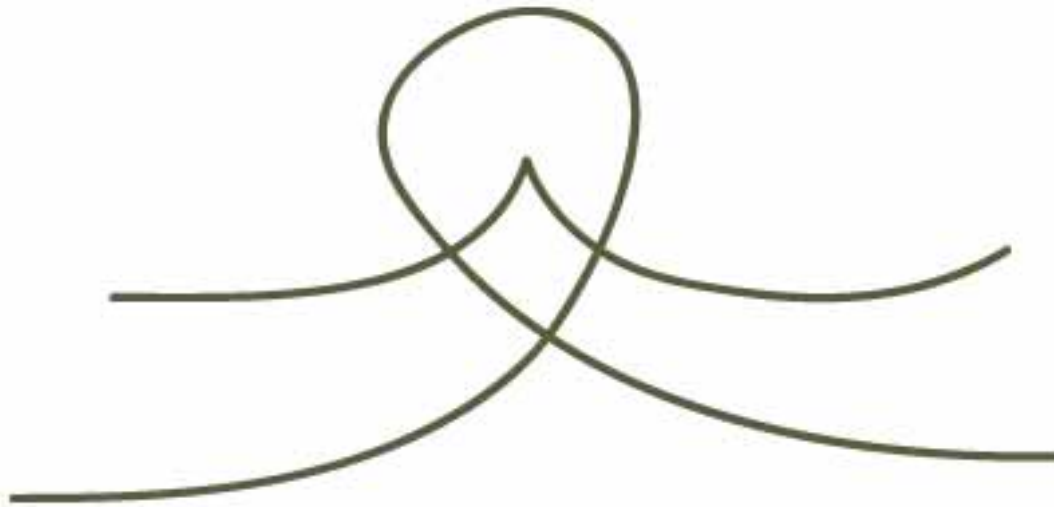
OLD GROWTH vs. ECONOMIC GROWTH

**Women: Tests Find
Traces of Pesticides**

... conducted by the National Institute of Health







Confused about Sustainability?

Community Participation

EECA

ISO 14001

Design for Disassembly

Cylinder Wraps

Ecoefficiency

Sustainability Analysis

Agenda 21

Clean Water

Design for Environment

Renewable resources

Chemical free

Clean Air

Triple bottom line reporting

natural Life Cycle Analysis

Zero waste

Waste minimisation

Cleaner Production

Ecological Footprint

for future generations

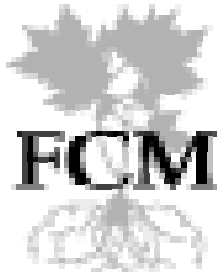
Recycled content

Life supporting capacity



“If we don't know
where we are going, all
roads
will lead us there”

1. A **science- and systems-based definition** for sustainability
2. A **process** to help organizations and communities use this definition planning



QuickTime™ and a
TIFF (Uncompressed) decompressor
are needed to see this picture.

Swedish Eco-
municipalities



The Consensus Process

QuickTime™ and a
TIFF (Uncompressed) decompressor
are needed to see this picture.

QuickTime™ and a
TIFF (Uncompressed) decompressor
are needed to see this picture.



Dr. Karl-Henrik Robèrt



A method in which the **future desired state** is envisioned and steps are then defined to **attain that state.**

1. What is success in chess?



2. What is success in a jigsaw puzzle?



3. What is the difference?

What is Success in Sustainability?



A Systems Perspective

"Systems thinking is a discipline for seeing wholes, recognizing patterns and interrelationships, and learning how to structure those interrelationships in more effective, efficient ways."

Peter Senge



The Earth as a System



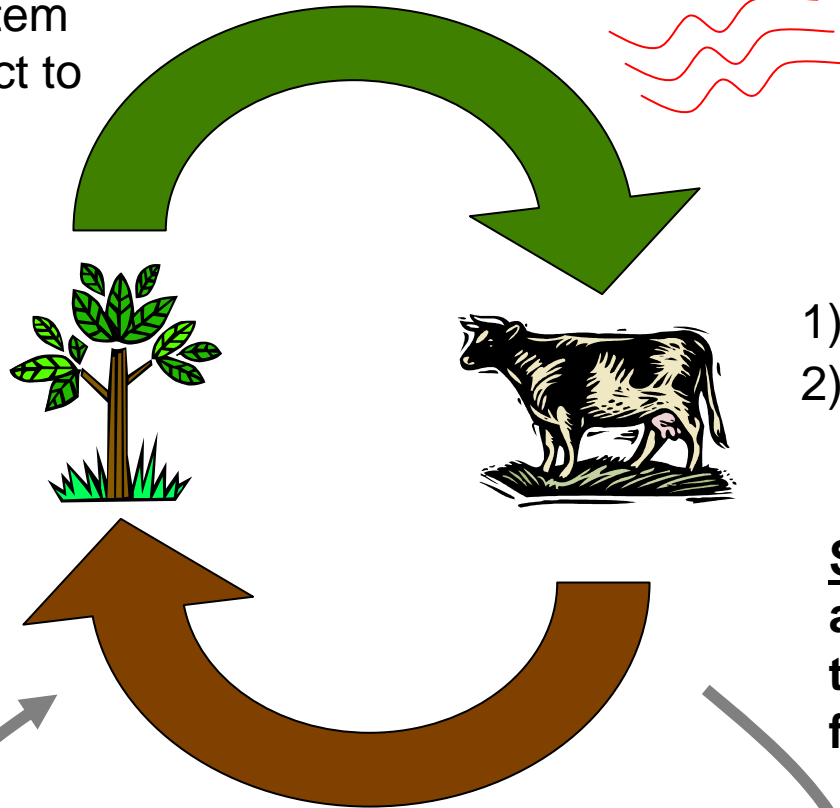
What can we agree on?



Open System
with respect to
energy

“Photosynthesis pays
the bills”

Slow
geological
cycles -
materials from
the Earth’s
crust



Closed System
with respect to
matter

- 1) Nothing disappears
- 2) Everything disperses

Sustainability is
about the ability of
these cycles to run
forever.

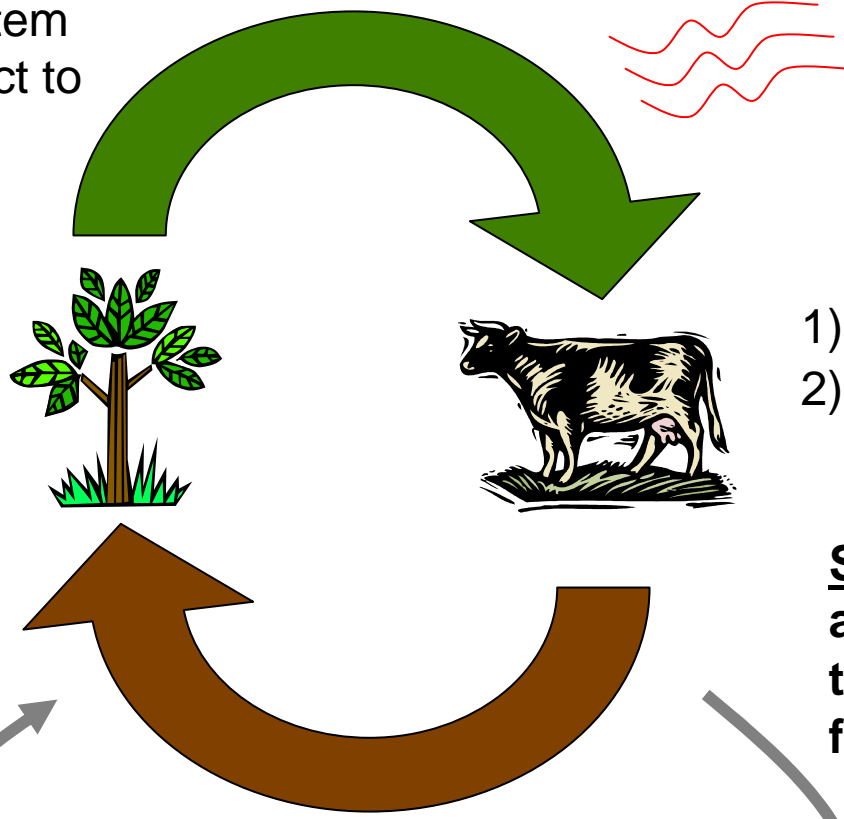
How do humans intervene in these cycles?



Open System
with respect to
energy

“Photosynthesis pays
the bills”

Slow
geological
cycles -
materials from
the Earth’s
crust

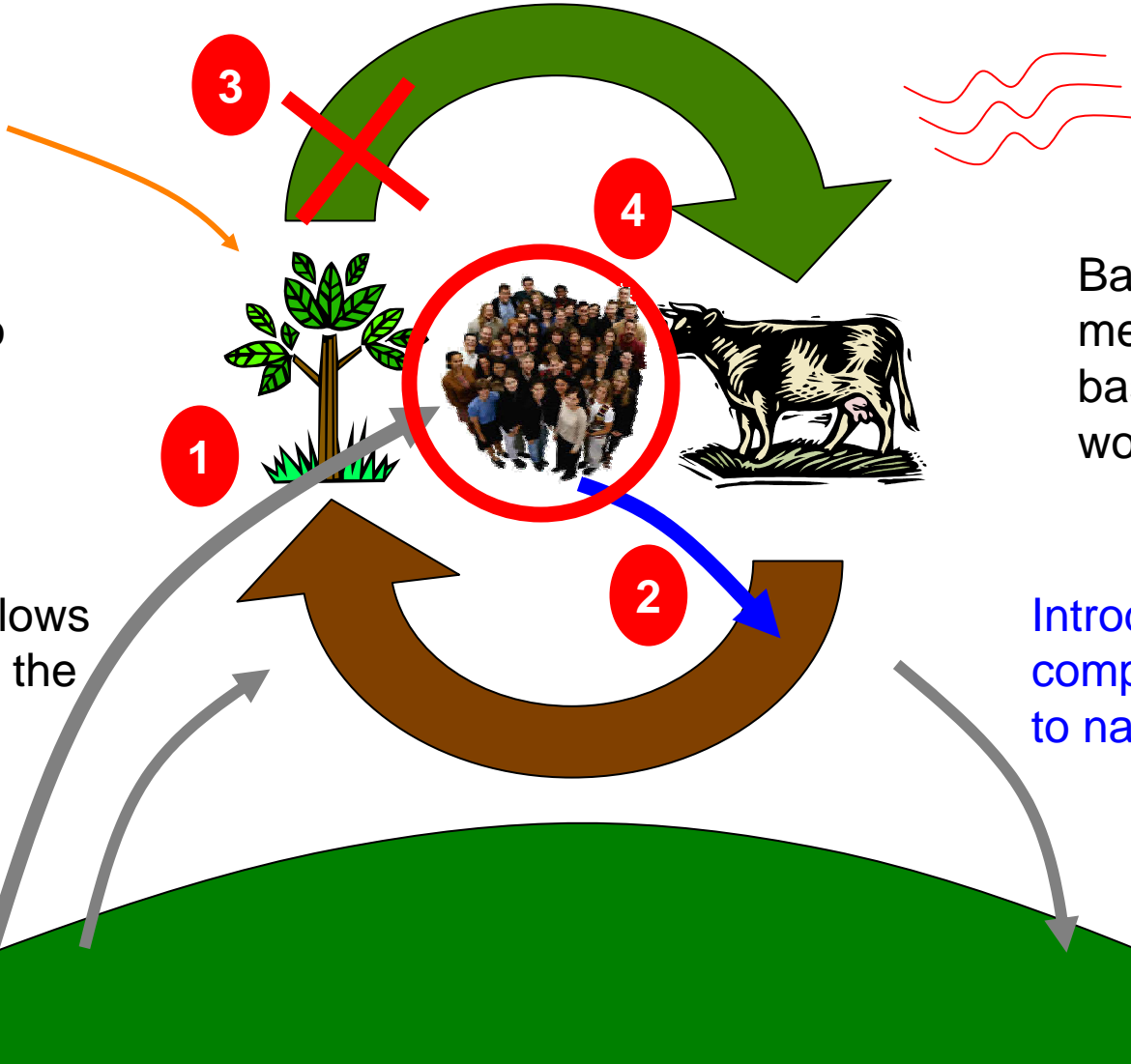


Closed System
with respect to
matter

- 1) Nothing disappears
- 2) Everything disperses

Sustainability is
about the ability of
these cycles to run
forever.

How we influence cycles



Physically inhibit ability of nature to run cycles

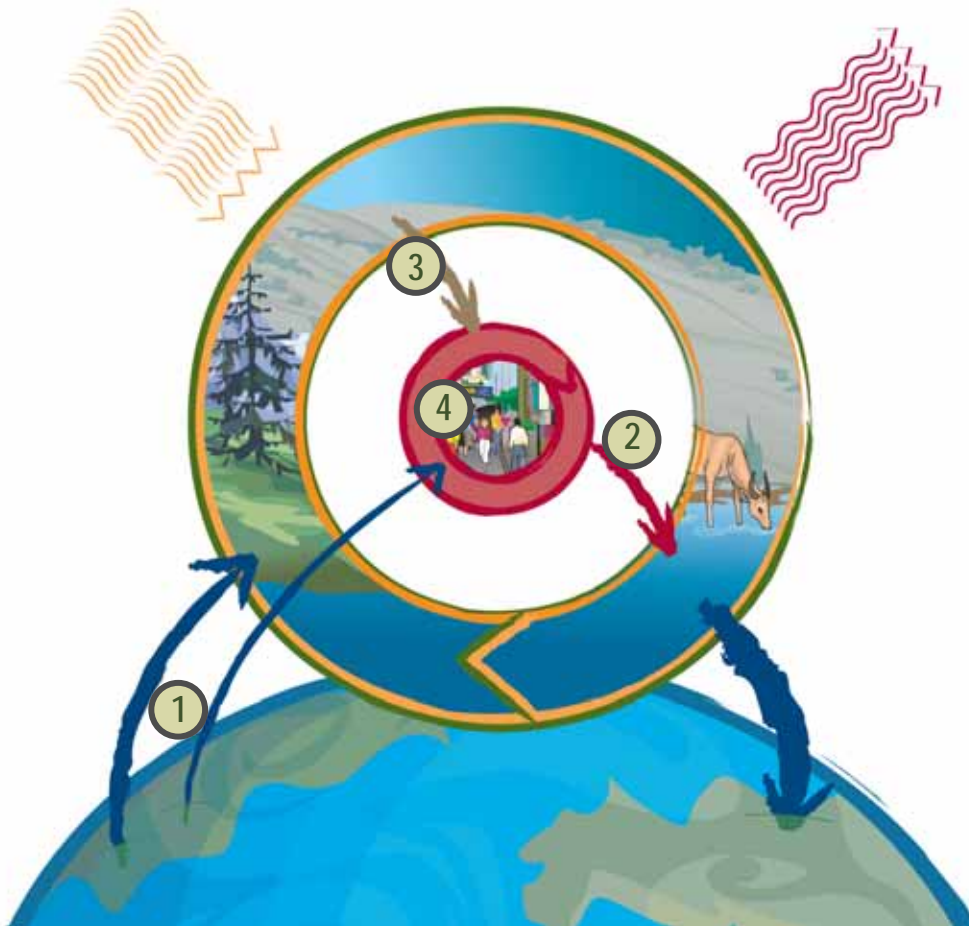
Barriers to people meeting their basic needs worldwide

Relatively large flows of materials from the Earth's crust

Introduce persistent compounds foreign to nature

Sustainability defined: The four S ystem C onditions

In a sustainable society, nature is not subject to systematically increasing:



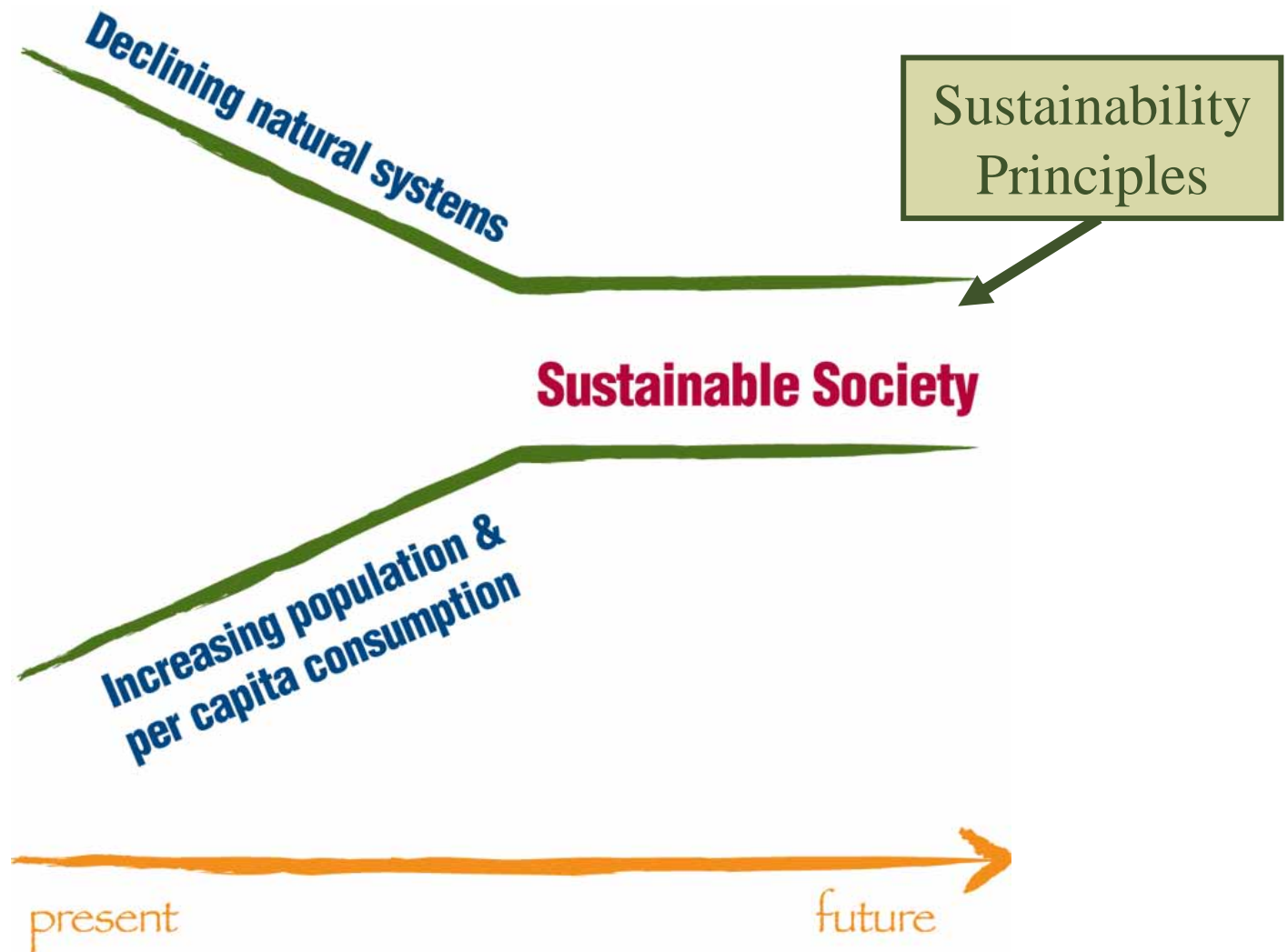
① Concentrations of substances extracted from the earth's crust

② Concentrations of substances produced by society

③ Degradation by physical means

and, in that society, people are not subject to

④ Conditions that systematically undermine their capacity to meet their needs.



Our ultimate sustainability objectives are to eliminate **our contribution to :**

1. ... systematic increases in concentrations of substances from the Earth's crust.
 2. ... systematic increases in concentrations of substances produced by society.
 3. ... systematic physical degradation of nature through over-harvesting, introduction and other forms of modification.
 4. ... systematic undermining of people's capacity to meet their needs.
- 



In a sustainable society, nature is not subject to systematically increasing:

... concentrations of substances extracted from the Earth's crust;

Inefficient Use → Efficient Use

Dissipative Use → Tight Technical Cycles

Scarce metals → Abundant metals

Fossil Fuels → Renewables



In a sustainable society, nature is not subject to increasing:

... degradation by physical means;

Inefficient use of resources and land → Efficient use of resources and land

Resources from poorly managed ecosystems → Resources from well-managed ecosystems

Careless overharvesting and introductions → Caution in modification of nature

System Condition 4



In a sustainable society, people are not subject to:

conditions that systematically undermine their capacity to meet their needs.

Unsafe working and living environments



Safe working and living environments

Economic barriers



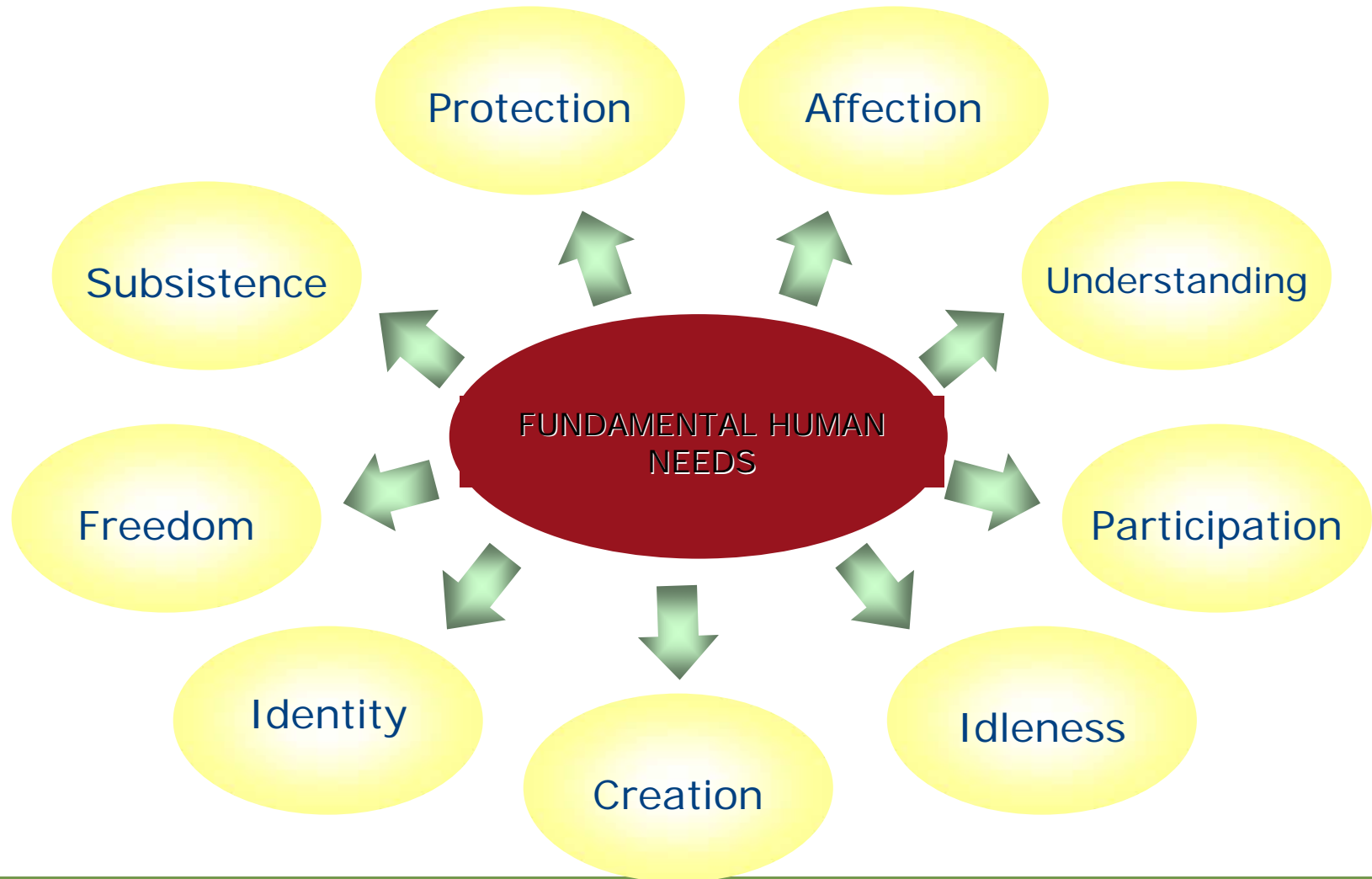
Sufficient resources for livelihood

Political oppression and violations of human rights

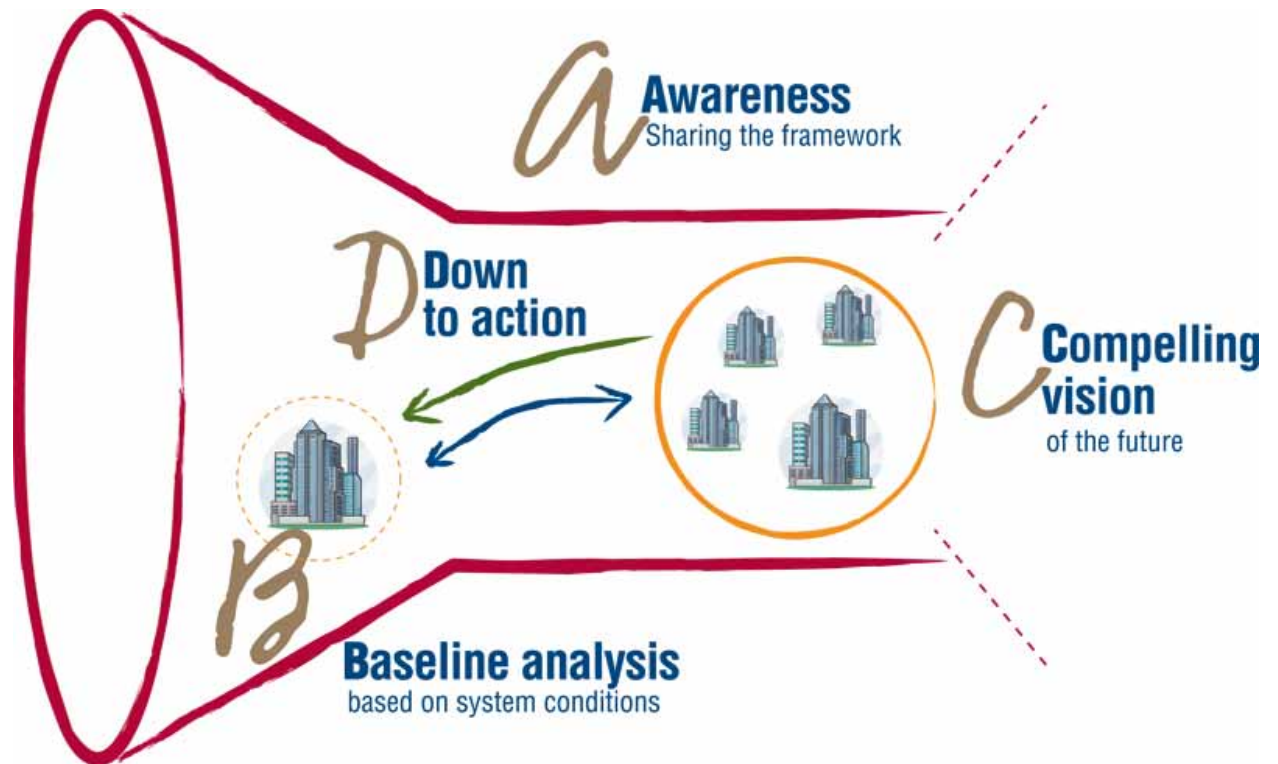


Political freedom and respect for human rights

Human Needs (vs. satisfiers)



Right direction?
Flexible Platform?
Return on investment?





Think of the the Natural Step Framework like a compass.

Where a **compass** helps an individual know where true **North** is and the uses this point to guide their movements, the **Natural Step Framework** helps organizations or communities know where **sustainability** is and guide their movements towards this point.

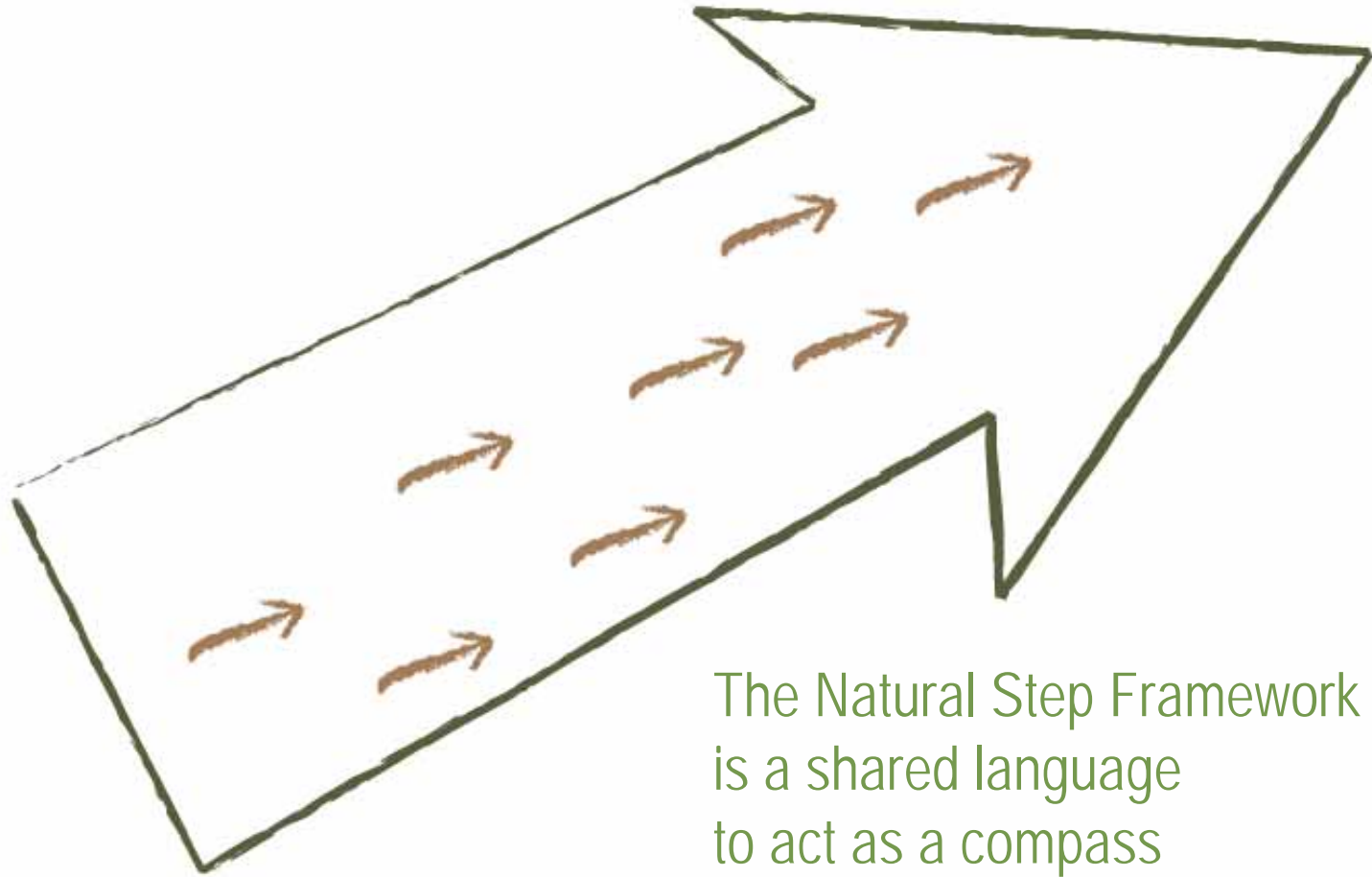
Challenge of Alignment



Many individuals in an organization
(and organizations within a community)
with energy and enthusiasm

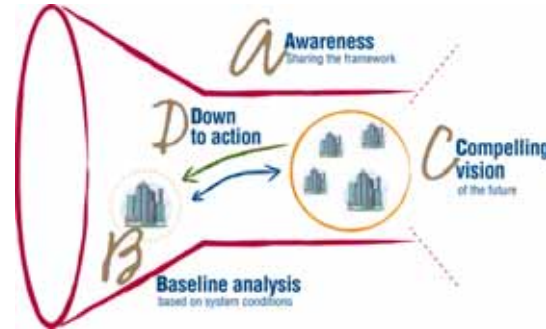


The Natural Step Framework
is a shared language
to act as a compass

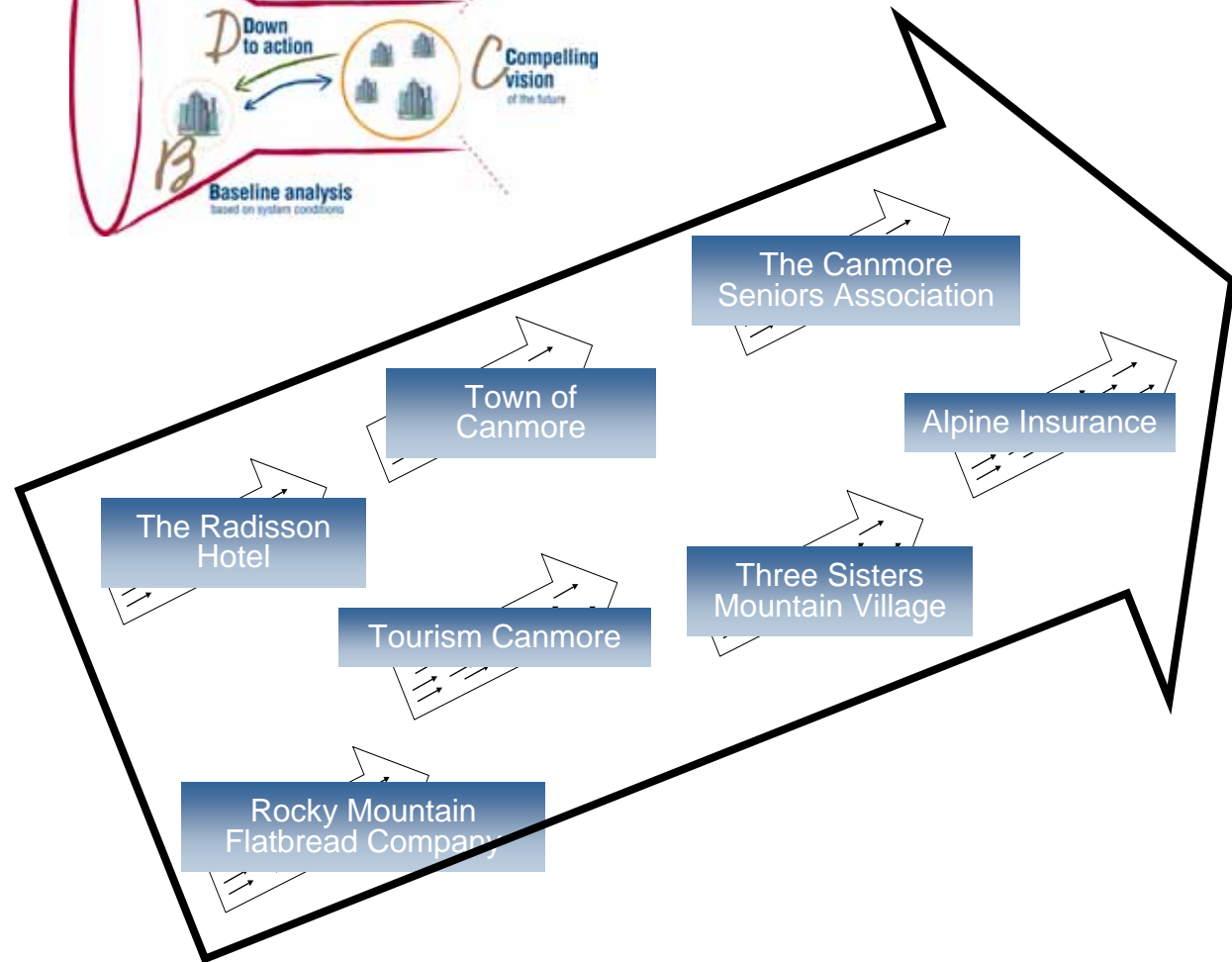


The Natural Step Framework
is a shared language
to act as a compass

Reporter: Dave Ovsey Photo Illustration by Dave Stobbe



QuickTime™ and a TIFF (LZW) decompressor are needed to see this picture.



Community Coordinator:

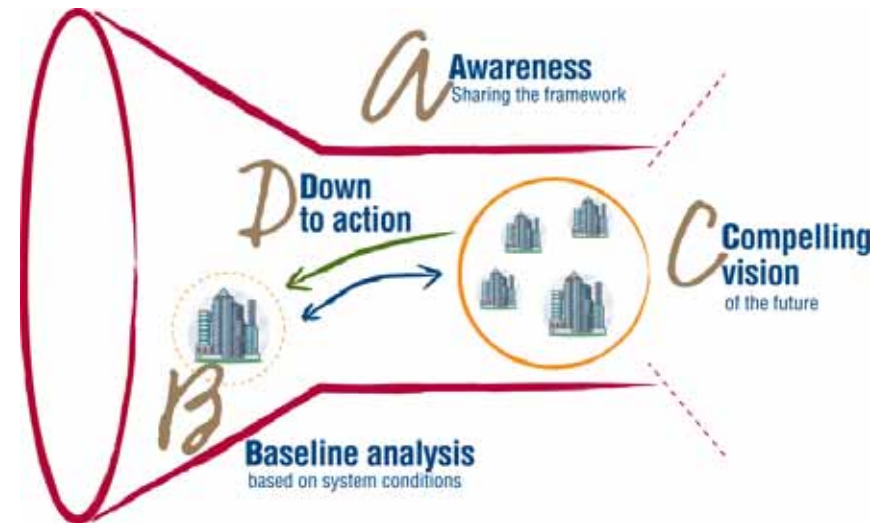
The Biosphere Institute of the Bow Valley

Fiscal agent:

Canmore Economic Development Authority

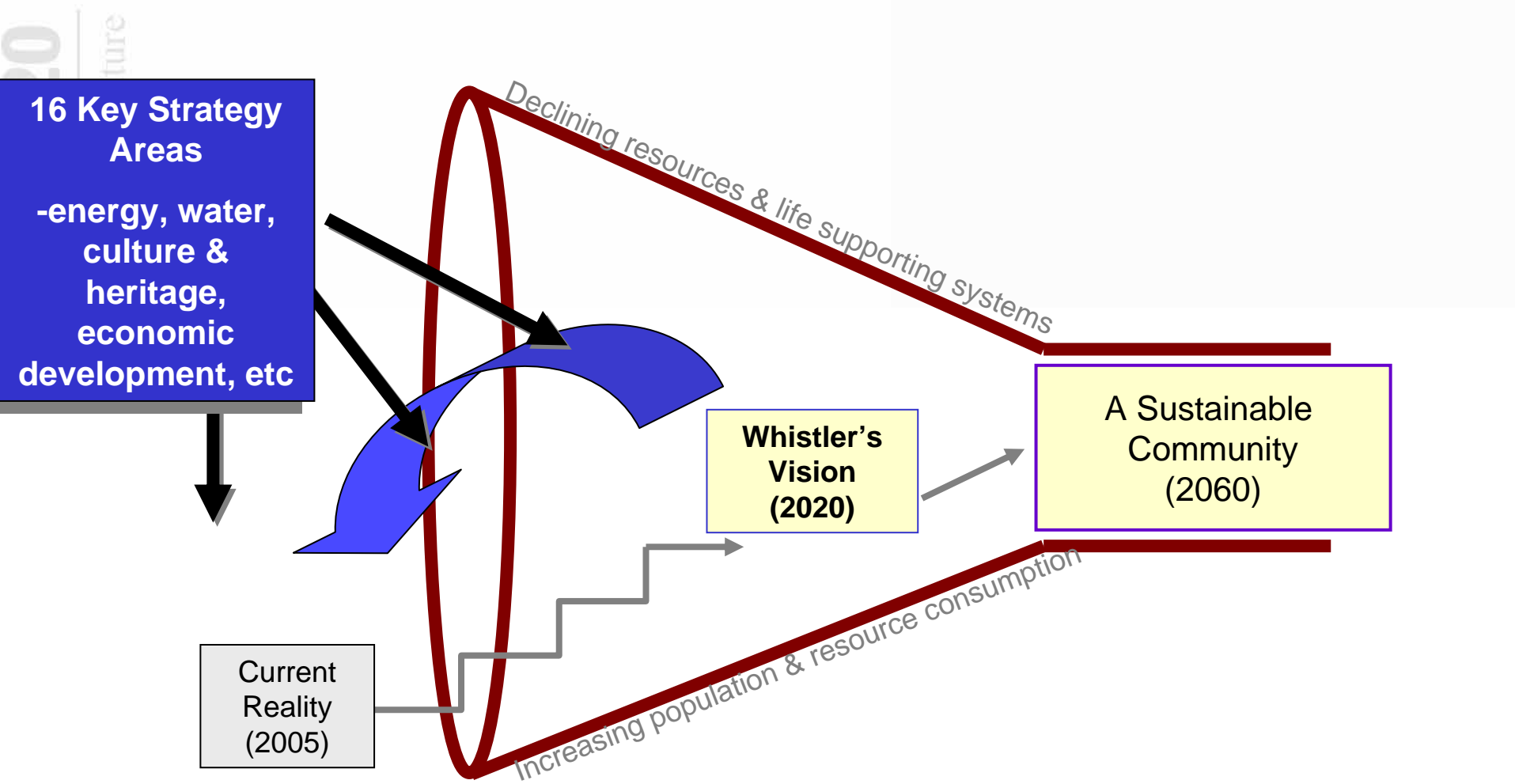
WHISTLER 2020

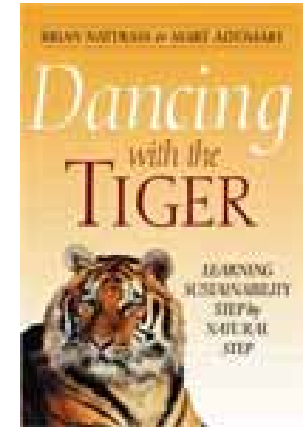
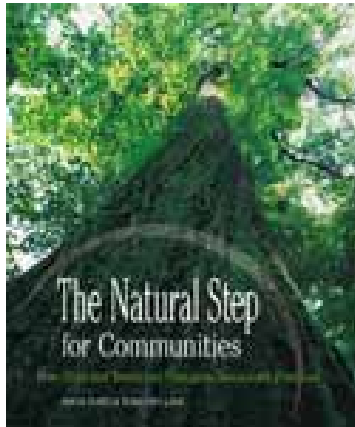
Moving Toward a Sustainable Future



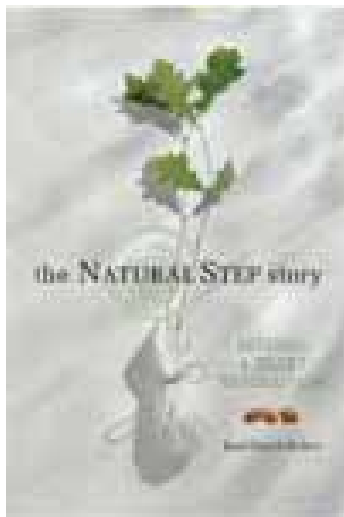


Planning Framework

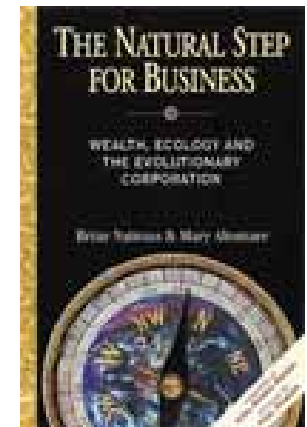




Thank You



The Natural Step Canada
43 Eccles St., 2nd floor
Ottawa, ON, K1R 6S3
info@naturalstep.ca
www.naturalstep.ca



Supporting Slides



"We will honor the places where we do business by endeavoring to become the first name in industrial ecology, a corporation that cherishes nature and restores the environment."



- Will be climate-neutral by the end of this year.
- 12% renewable energy and headed towards 100%.
- Over \$US200 million in cumulative savings from waste elimination activities
- Total energy consumption for carpet manufacturing down 35% since 1996.
- Water intake per square meter of carpet down 78%
- 20% of sales due to sustainability commitment.