Science, Innovation, and Partnerships for Sustainability Solutions

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***The most critical challenge of the 21st Century*:**

Meeting the needs of people today and in the future

Sustaining the life support systems of the planet

NRC. 1999. Our Common Journey

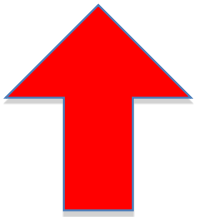
Social needs are not being met

1 – 2 billion persons are…

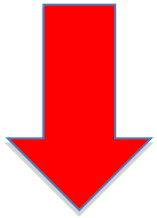
- illiterate adults
- without adequate shelter
- without access to safe water or sanitation
- without access to electricity
- undernourished

Life support systems are degraded

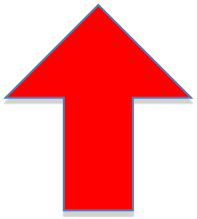
- Air Pollution
- Climate change
- Acidification of the oceans
- ~50% land surface has been converted
- Biodiversity loss 100+ times faster
- 60% of ecosystem services in decline
- Water and soil resources limitations
- Nitrogen over-enrichment
- Mineral resource limitations



Meeting the needs of people today



Sustaining atmosphere, water, climate and ecosystems



Meeting the needs of people today

Sustaining atmosphere, water, climate and ecosystems

Areas for Action

WCED, 1987 Our Common Future	NAS-BSD, 1999 Our Common Journey	Kofi Annan, 2002 WSSD:An Achievable agenda
Population	Human Population	Health
Food Security	Agriculture	Agriculture
Species & Ecosystems	Living Resources	Biodiversity
Energy	Energy	Energy/climate
Industry	Industry	-
Urban Challenge	Cities	-
-	-	Water

A *Transition* to Sustainability?

What will it take?

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- new knowledge, technologies, tools and approaches

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Decades of research has dramatically ***improved understanding***

Understanding ---> Solutions?

reorientation of research so that science can better address the needs of decision makers

-focus on human-environment systems
-focus on solutions to sustainability challenges

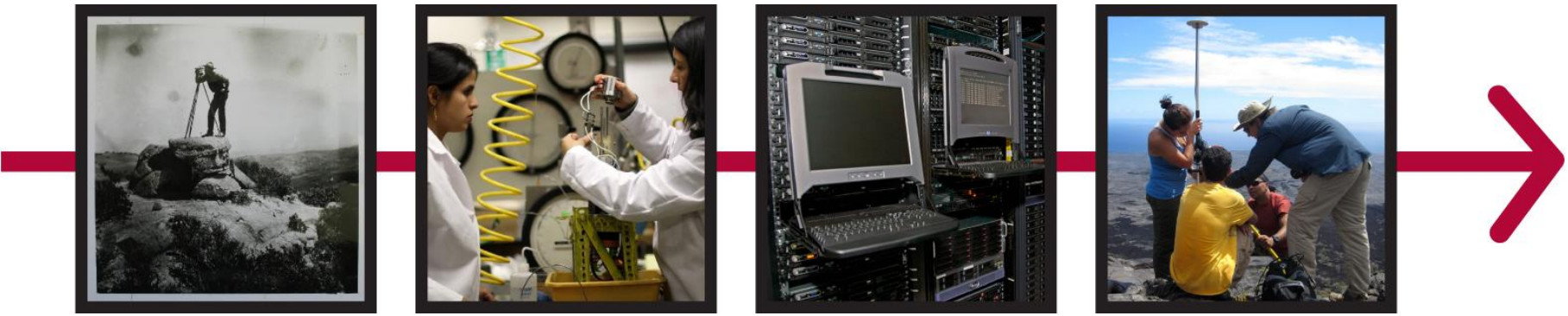
"Use-inspired fundamental research"

What will it take for a transition to sustainability?

- new knowledge, technologies, tools and approaches
- linking knowledge to action

Is the existing knowledge integrated and made available in ways that can support decisions, action??

How can we most effectively link knowledge with action for sustainability??



What will it take for a transition to sustainability?

- new integrative knowledge, technologies, tools and approaches
- linking knowledge to action
- educated leaders and public
- hope, inspiration, and motivation
- the will to change
- leadership by corporations, citizens, governments, non-profits, universities
- *and a stable human population….*

Symposium Objectives:

Identify successful models for improving science for sustainability, and for linking science with decision making

Foster partnerships, identify next steps for agency action.

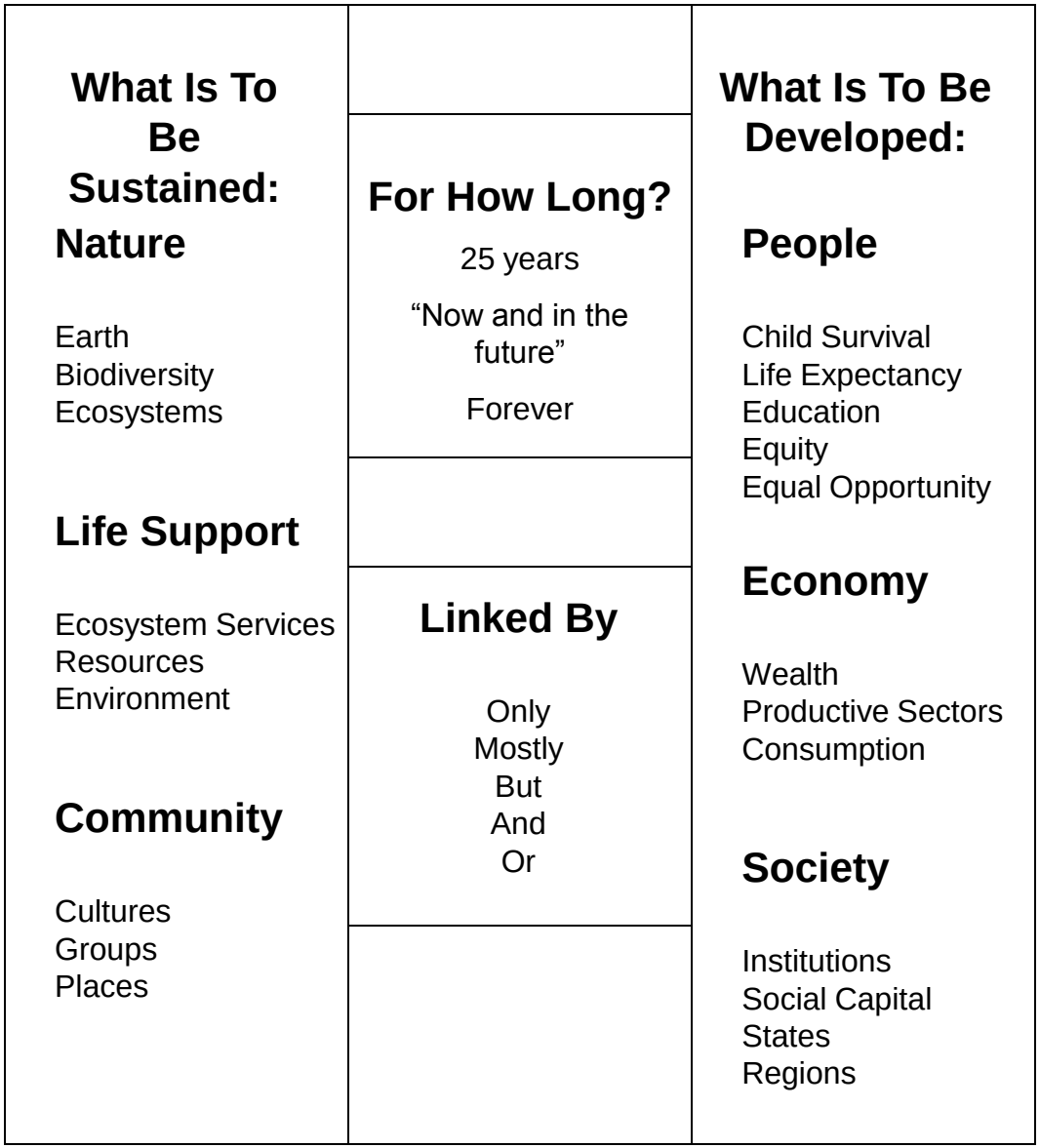


Figure 1.1 Sustainable development: common concerns, differing emphases.