

## **A HARDER EDGE**

**Presentation  
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## A HARDER EDGE

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We all understand that humans, and the societies we create, are totally dependent on goods and services derived from natural systems. \*\*

What we often fail to see clearly is that all societies must organize, whether consciously or not, to access these goods and services.\*\*

There are very few options for doing this. \*\*

**Hunter-gather societies**, for example, combined simple technologies with sophisticated knowledge of local ecosystems to meet their provisioning needs.

When populations exceeded local carrying capacity, the only way they could cope was to take what they needed from neighbouring tribes or have a portion of the tribe migrate elsewhere. \*\*

**Agricultural societies** utilized knowledge of plant and animal husbandry and the same techniques of migration and war. As they spread around the world they displacing untold numbers of earlier hunter-gatherer societies, languages and cultures. \*\*

**The rise of cities**, particularly after about 3000 BC, marked a radical departure in the way provisioning needs were met.

For the first time, concentrated populations had to meet their natural capital needs from what others produced or that came from elsewhere. Thus cities definitively added trade to the tool bag of outreach and began the centuries-long process that is still going on today of subjugating rural areas to the task of provisioning urban populations. \*\*

**Nation states**, particularly those emerging in Europe at the end of the Middle Ages, adopted all of the tools of outreach from earlier societies - migration, war, colonial conquest and trade. \*\*

**Now, in our global economy**, we rely overwhelmingly on trade and technology to meet our provisioning needs. \*\*

Our agents in this endeavour are international business networks that scour the world for natural capital. \*\*

The provisioning arrangements of the global economy are the most powerful yet devised. They fully support well over two billion people. They have helped raise several hundred million people above the poverty line in the last couple of decades, and, \*\*

there may be a peace benefit. Certainly in comparison to the conflict and slaughter of previous eras, the provisioning arrangements of the global economy are remarkably benign. After all, if you can trade for what you need, why go to war?

The big question surrounding the global economy is can it continue to meet the world's provisioning needs or must we shift to new organizational arrangements?  
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**If you believe in economic correctness and the operation of the “virtuous circle of growth”, the answer is an unequivocal “Yes”.**

Growth, the theory says, together with democratic systems of governance and open, transparent arrangements for supporting foreign investment and trade will lead to a virtuous circle of expanding wealth that will, in turn, enable us to address all social and environmental concerns. \*\*

**However, when viewed from a “provisioning” perspective, the prospects for continuance become much less certain and the best answer is a highly qualified “Maybe”.**

To break the shackles of poverty the poor of the world must diversify their provisioning arrangements and the way to do this is to access the power of global provisioning networks.

There are some pretty big obstacles in their way.

For the first time all nations are in competition for access to the same global, as opposed to local or regional sources of natural capital

Our waste streams are seeping into the far reaches of global ecosystems, and

Some 3 billion people remain locked in the provisioning processes of earlier eras. These include the present day residuals of hunter-gatherer and subsistence agricultural societies and the millions of poor that work in the informal economies of urban slums.

As a group, these 3 billion people meet their provisioning needs primarily from local sources.

they earn less than \$2 per day and consume about 1/20<sup>th</sup> the natural capital of full participants in the global economy. And they all want to improve their lot.

That is a lot of people to accommodate on a shrinking resource base!

**Ahmed is one of them.**

He runs a very simple travel service from a table across the street from a backpackers hotel in Old Delhi - he helps people confirm travel arrangements and acts as a guide for local tours.

Ahmed is part of the urban poor. He supports each member of his family on less than \$2 per day and most of their provisioning needs -their food, clothes, building materials - come from local sources, and their wastes fester in their backyard.

**He wants a few things** - a motor scooter to increase his mobility: an office where he can work during inclement weather and a computer, the key to diversifying his service offerings.

Ahmed knows almost nothing of the global economy. He is not puzzling over whether or how it affects him. He just wants to improve his family's prospects.

**But if he gets these things, and he probably will for he is an industrious fellow,** he will have joined the international provisioning networks of the global economy.

**His scooter** will tie him to international energy, manufacturing and service organizations.

**His office** will link him to the water, sanitation, electrical and other infrastructure that help provision the wealthy in his country.

**His computer**, the key to being able to provide new services such as flight and hotel bookings, will integrate his business into global information networks and related education and training services.

**As his income grows**, he will purchase more internationally traded goods. In better schools, his children will be exposed to the knowledge of the world.

I am sure that you applaud his efforts, as I do.

**But Ahmed's circumstances are at the heart of the great conundrum of our times.**

As he becomes more fully engaged in the global economy his consumption of natural capital will increase dramatically - up to 20 times more if he reaches our level of consumption.

Ahmed , of course, is not alone in this. The aspirations of those other billions of impoverished people are predicated on being able to access vastly more abundant ecological goods and services.

**And here is the rub!** The world's peoples are already drawing down more from nature each year than nature can regenerate - up to 20% more (Living Planet Report)

**Looking ahead** to 2025 the global economy is expected to be at least 2 or 3 times as big as it is now. This growth must be provisioned from already stressed natural systems.

**I the world's poor** are to have a better life their transition must be provisioned.

**We must also meet** the provisioning needs of the almost 2 billion additional people that will join us by then.

**Within this short space** of time, if economic growth is to continue and we are to address global poverty, we will have to create access, each year, to the ecological equivalent of 3 or 4 earths.

**This provisioning challenge dwarfs all other risks to human progress and world peace.**

**If we are to meet it**, we have to bring a much harder edge to the way we define the challenges facing the human community and to the way we frame solutions.

### **The hard edge of failure**

To begin with, we have to talk realistically about the consequences of a failure to meet these provisioning needs.

The destruction and loss of ecosystem viability implied by the scale of human demands will soon starve growth processes and plunge the world into uncontrolled competition for access to natural capital on a degraded planet. This competition can quickly come to pit the wealthy participants of the global economy against the excluded.

**Evidence of this tendency** can already be found in the prevalence of sub-national conflicts in poorer countries around the world - many of which appear to be little more than cold-blooded contests for control of land and resources.

It can be seen in the growing competition between economically advanced and rapidly emerging economies for access to global sources of natural capital, including oil and gas.

It can be seen in the growing numbers of ecological refugees that are now beginning to join the streams of economic migrants seeking a better life for their families.

### **The hard edge of “sustainable development”**

We have to bring greater focus and precision to the way we define and talk about “sustainable development”.

We need to stop inflating the notion of “sustainable development” to include all issues that our diverse societies believe are important.

The priority challenge is to meet the world’s provisioning needs.

### **The hard edge of time frames for action**

We have to focus on the reality of immediate challenges to provisioning capability as opposed to long-term probabilities.

The signs of ecological fragility and possible tipping points are now staring us in the face and most forms of present ecological stress will have run their course within 20 years.

We have to stop making 100 and 300 year projections of the implications of climate change and address the serious impacts that will arise from the doubling of anthropogenic GHG concentrations in the upper atmosphere that will occur within 20 years.

We have to stop talking about the fact that human population growth is slowing down and may level off in 70 years, thus contributing to the false illusion that no further action is required.

Instead, we have to focus on provisioning the 1.5-2 billion additional souls that will have joined our ranks within 20 years and

We have to start planning now to curb further population growth by then.

## The hard edge of solutions

Above all, we have to be much more hard-headed in our assessment of possible solutions.

**There is only one way to meet the world's provisioning needs. We have to reorganize around new technologies and related social adaptation that give us the power to massively expand our ability to access and, more specifically, to use natural capital.**

The potential to augment our ability to utilize what we draw from the natural world is huge, but to exploit these opportunities we will have to radically change the direction of present economic and technological advance.

This figure contrasts the dominant thrust of present technological innovation with the directions of innovation that can help ensure ecological sustainability.

### THE INNOVATION DIVIDE

NEW ECONOMY	ECOLOGICAL SUSTAINABILITY
1. Increased Computer Speed and Capacity	1. Sustainable Energy and Transportation Systems
2. Communications and Internet Functionality	2. Integrated Bio-region Management
3. Software, Artificial Intelligence, Smart Machines	3. Comprehensive Agricultural Management
4. Nanotechnologies	4. Industrial Ecology
5. Medical Technologies	5. Eco-Urban Management
6. Chemicals, Aerospace, New Materials	6. Monitoring and Preparedness
7. Basic Science	7. Application of Advanced Technologies

Time doesn't allow for discussion of these technology fields: each is a subject unto itself.

**However, I can say this.** A huge gap exists between where technology is taking the world and where rationally we have to go.

Opportunistic, short-term, randomly-generated, market-driven innovation is now commandeering the vast bulk of investment in technology development worldwide and driving global economic growth.

It is pushing us towards a bi-polar world in which the economic gaps within and between countries are widening and it is pushing us towards ecological ruin.

There is much that nation states can do individually to help alter course.

However, shifting the directions of innovation will require a high level of internationally-coordinated action. This suggests we have to organize

less around national technology efforts to exploit random commercial advantage and

more around the internationally directed technological advance for the benefit of humankind.

### **The hard edge of social sustainability**

Finally, we need to rethink the way we talk about social sustainability.

All too often this is taken to mean the preservation and retention of cultural and social habits, practices and traditions.

The hard contrasting reality is that in our overpopulated and resource scarce world, the requirements of "sustainability" mean that all societies must accept the need for change.

Our task is to increase social receptivity to necessary adaptation.

As Alfred Einstein so crisply put it,

"Stupidity is when you keep doing the same thing and expect a different outcome".