

# Permaculture Talk

## What You Can Do For Sustainability

Sunday 10<sup>th</sup> June 2012 from 16h30 to 18h00

Some leading questions: -

What is Sustainability?

Is Humanity Sustainable?

What is causing Climate Change?

What will be the Tipping Point?

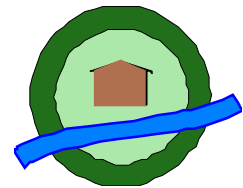
A New Consciousness?

What You Can do for Sustainability?

The talk will follow with group discussion,  
networking, seed exchange and what next?



24D&E, Alverstone Road (D435),  
Alverstone, Durban,  
29.77002 S, 30.72197 E



Ezio Gori

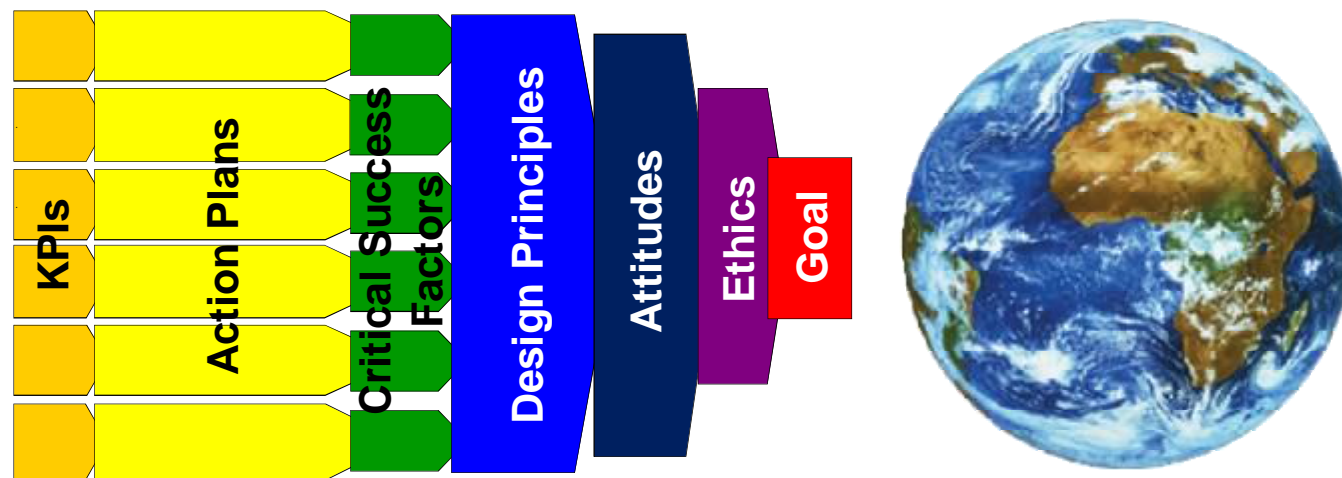
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# STRATEGIC FRAMEWORK FOR SUSTAINABILITY


Concept Document v4a – June 2012



Presentation by  
**Ezio Gori**

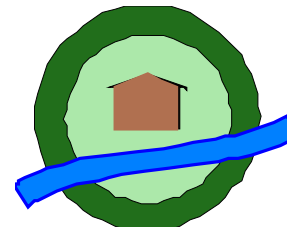
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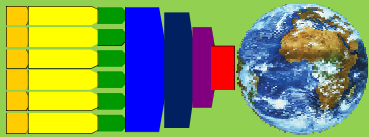
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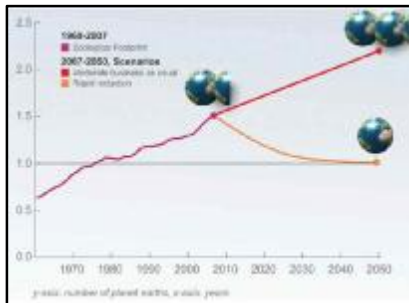
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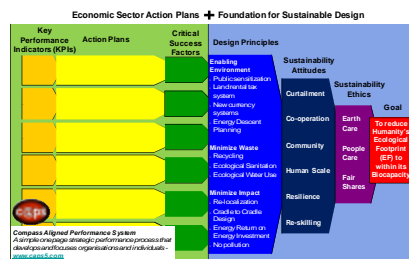


# STRATEGIC FRAMEWORK FOR SUSTAINABILITY CONTENTS



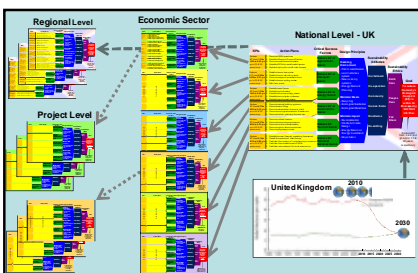
## Part A – Sustainability within Biocapacity

1. Sustainability Defined
2. The Need for a Common Strategic Framework for Sustainability
3. Humanity's Two Greatest Challenges
4. Impact Measurement and Tradeoffs
5. Humanity's Future Scenarios
6. Ecological Footprint



## Part B – The Strategic Framework Model

7. Universal Ethics for Sustainability
8. Sustainability Attitudes
9. Design Principles for Sustainability
10. Foundation for Sustainable Design
11. The Strategic Framework Model

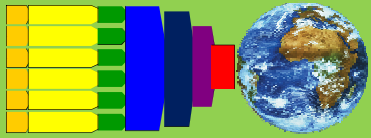


## Part C – Strategic Framework for Sustainability – A UK Example

12. Economic Sector Action Plans - An example for the UK
13. Strategic Framework for Sustainability – An example for the UK
14. Strategic Framework for various Economic Sector Sustainability
15. A Hierarchy of Strategic Frameworks for Sustainability
16. Further Research







# SUSTAINABILITY DEFINED

## Progress

It has become unquestioned that all societies are advancing naturally and consistently 'up' or 'forward', on a route from poverty, barbarism, despotism and ignorance to riches, civilization, democracy and rationality, the highest expression of which is science.

## Development

The concept of "Progress" interacted powerfully with the Industrial Revolution, urbanization and the spread of colonialism. Inevitably, those societies where the Industrial Revolution was advanced became classified as "developed" and others as "undeveloped", and in need of help, tutelage, and so on.

## Sustainable Development

The World Bank definition is: "Sustainable development is development that lasts", whilst the UN definition is: "Development that allows the satisfaction of all the needs of a generation without compromising the ability for successive generations to satisfy their needs".

## Reality Check

Progress has brought about greater personal freedoms, removal of cruel practices, liberation of women, eradication of disease, etc. Development has too many dark shadows, such as, environmental degradation, global injustice, poverty, etc. on the one hand, and, disillusioned youth, boredom, consumerism, meaninglessness, drugs, etc. on the other.

The modernist view of development is still dominant and business/industry have appropriated the term "sustainable development" to mean business as usual with a token addition of environmental reporting, social and environmental responsibility programmes, environmental management systems (e.g. ISO 14000), etc.

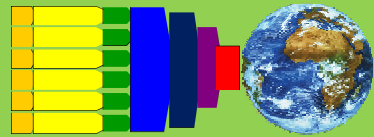
Development may satisfy the UN's Millennium Goals, but can this guarantee progress in Humanity, whilst simultaneously achieving sustainability?

## Real Sustainability

***Sustainability is improving the quality of human life while living within the carrying capacity of supporting eco-systems.***

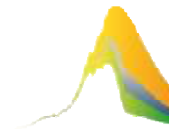
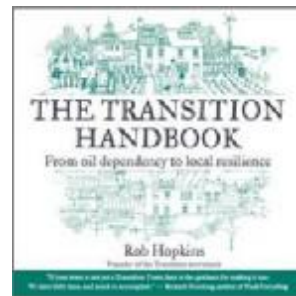
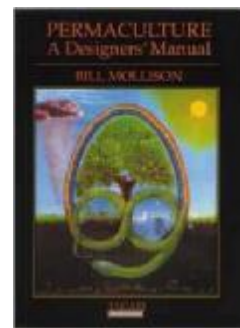
Having conquered the Earth, the next chapter for Humanity is to maintain this conquest in a manner that can sustain the whole of Humanity. However, will Humanity conquer itself in order for the fittest to survive, or, will it co-create its existence with the Earth for the whole of Humanity to survive?



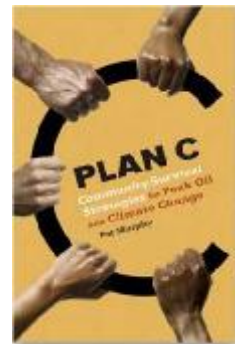


# THE NEED FOR A COMMON STRATEGIC FRAMEWORK FOR SUSTAINABILITY

There is a wealth of foresight for Sustainability, but, there is no **common** policy, values, strategy, measurement, action plan, targets, political will and leadership to implement Sustainability, hence the need for a common approach. This presentation contains very few new ideas, but rather, compiles some key foresights for Sustainability into a common Strategic Framework for Sustainability.



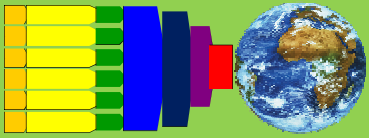
Contraction and Convergence (C&C)  
Climate Justice without vengeance



THE CLIMATE GROUP



And, apologies to many other great initiatives that have not been mentioned



# HUMANITY'S TWO GREATEST CHALLENGES



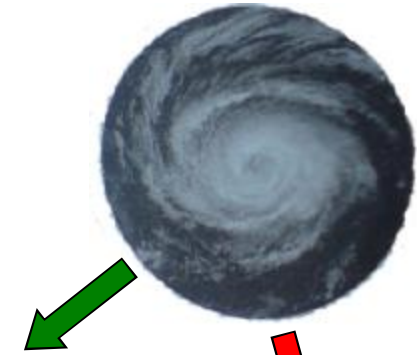
## PEAK OIL

- Coal to liquids
- Gas to liquids
- Relaxed drilling regulations
- Massively scaled biofuels
- Tar sands and non-conventional oils
- Resource nationalism and stockpiling

WHEN SEEN AS TWO ASPECTS  
OF THE SAME PROBLEM:  
BUILDING RESILIENCE PLUS  
CUTTING CARBON EMISSIONS

## Planned relocalisation (building local resilience)

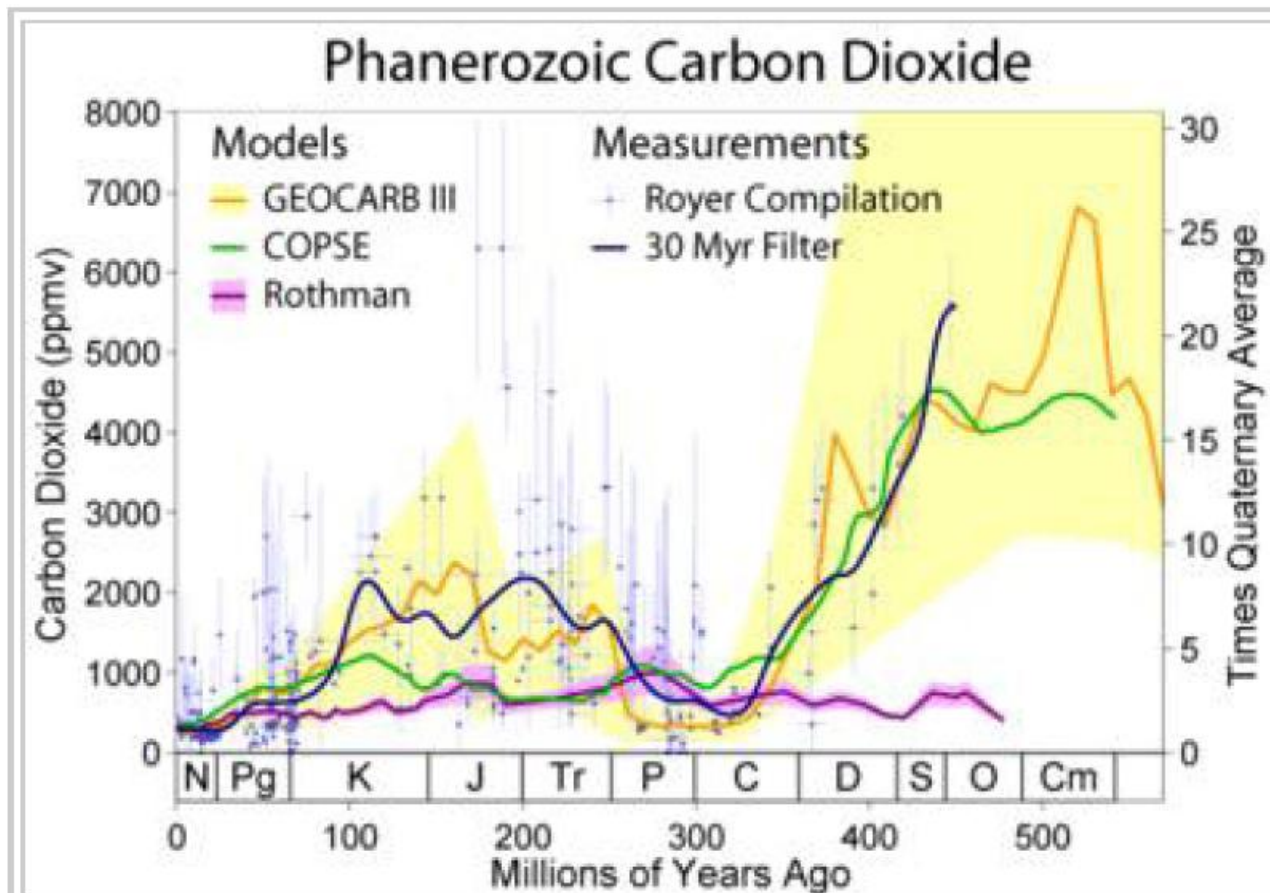
- Tradable energy quotas
- Decentralised energy infrastructure
- The Great Re-skilling
- Localised food production (food feet)
- Energy descent planning
- Local currencies
- Local medicinal capacity



## CLIMATE CHANGE

- Climate engineering
- Carbon capture and storage
- Tree-based carbon offsets
- International emissions trading
- Climate adaptation
- Improved transport logistics
- Nuclear power

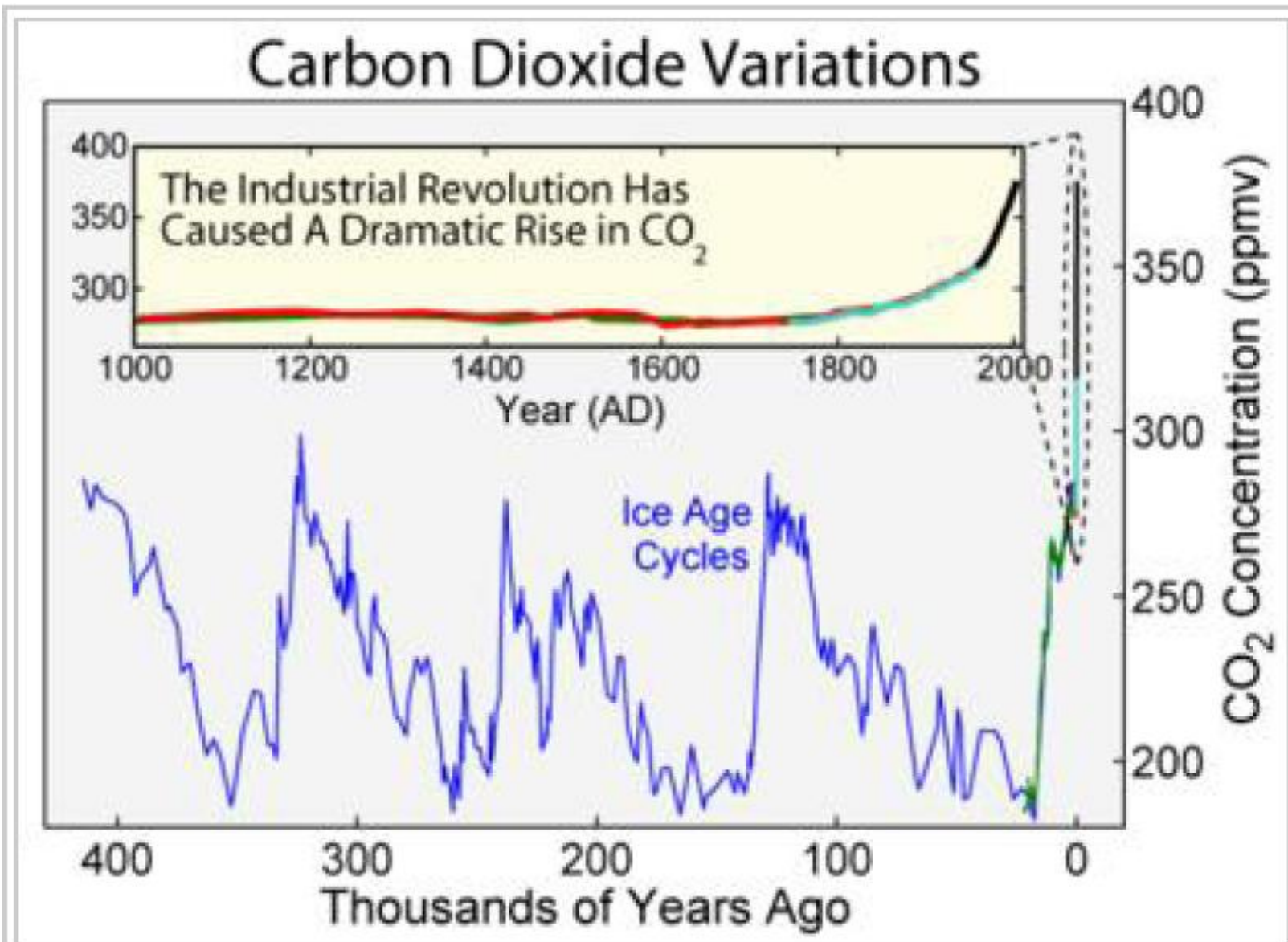
## Carbon dioxide in Earth's atmosphere - Wikipedia



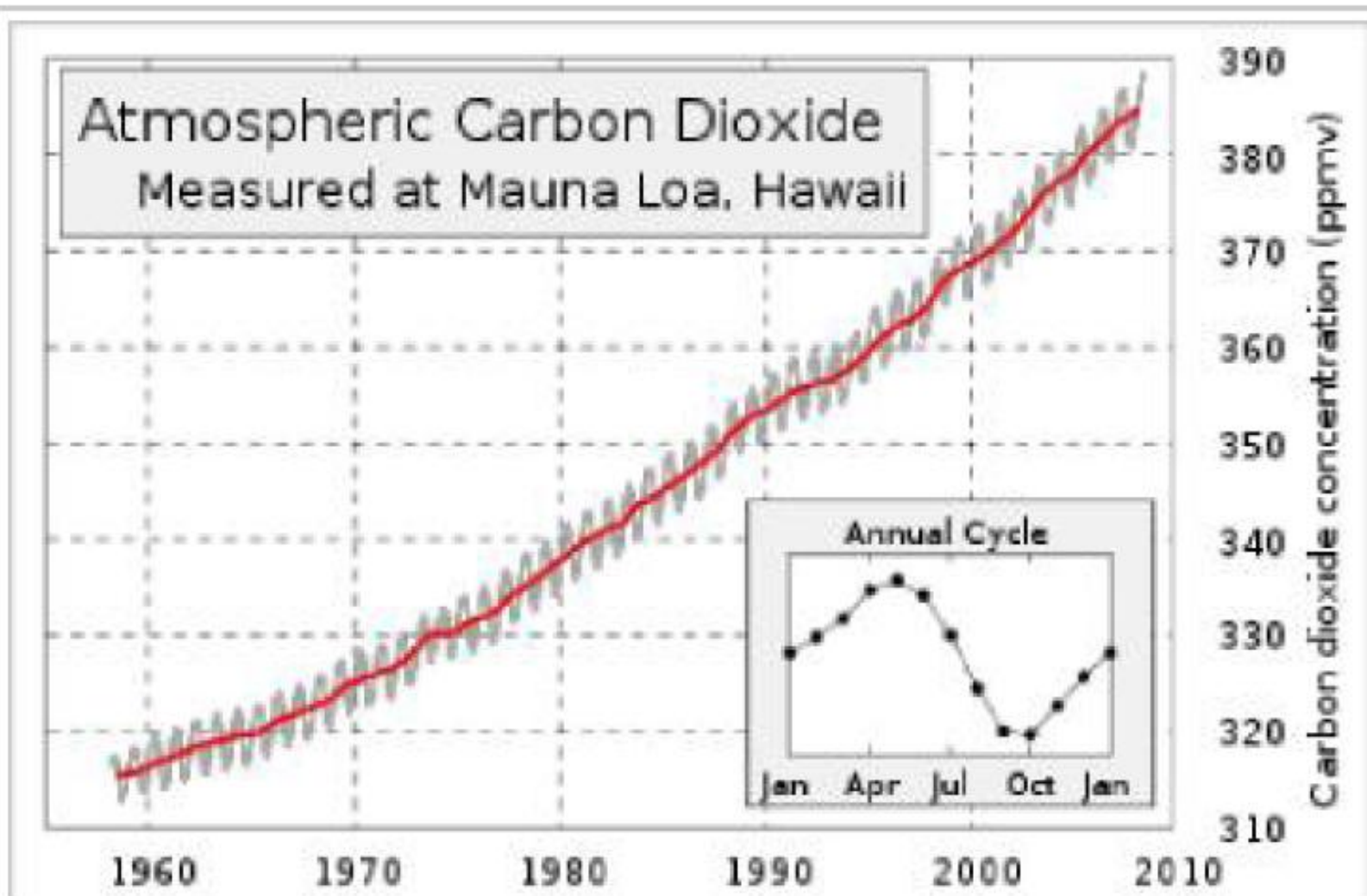
Changes in carbon dioxide during the Phanerozoic (the last 542 million years). The recent period is located on the left-hand side of the plot, and it appears that much of the last 550 million years has experienced carbon dioxide concentrations significantly higher than the present day.



## Carbon dioxide in Earth's atmosphere - Wikipedia

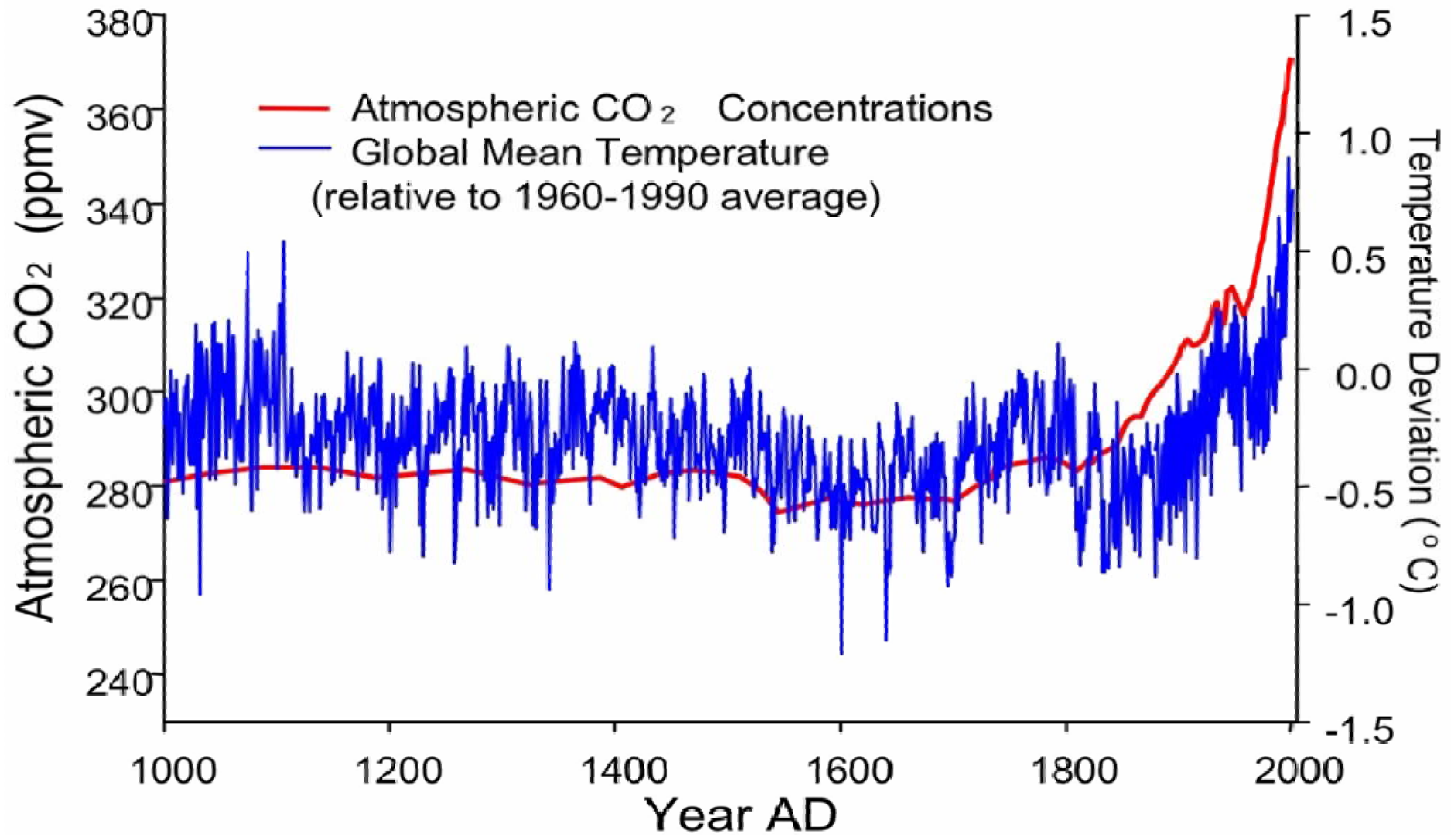


## Carbon dioxide in Earth's atmosphere - Wikipedia



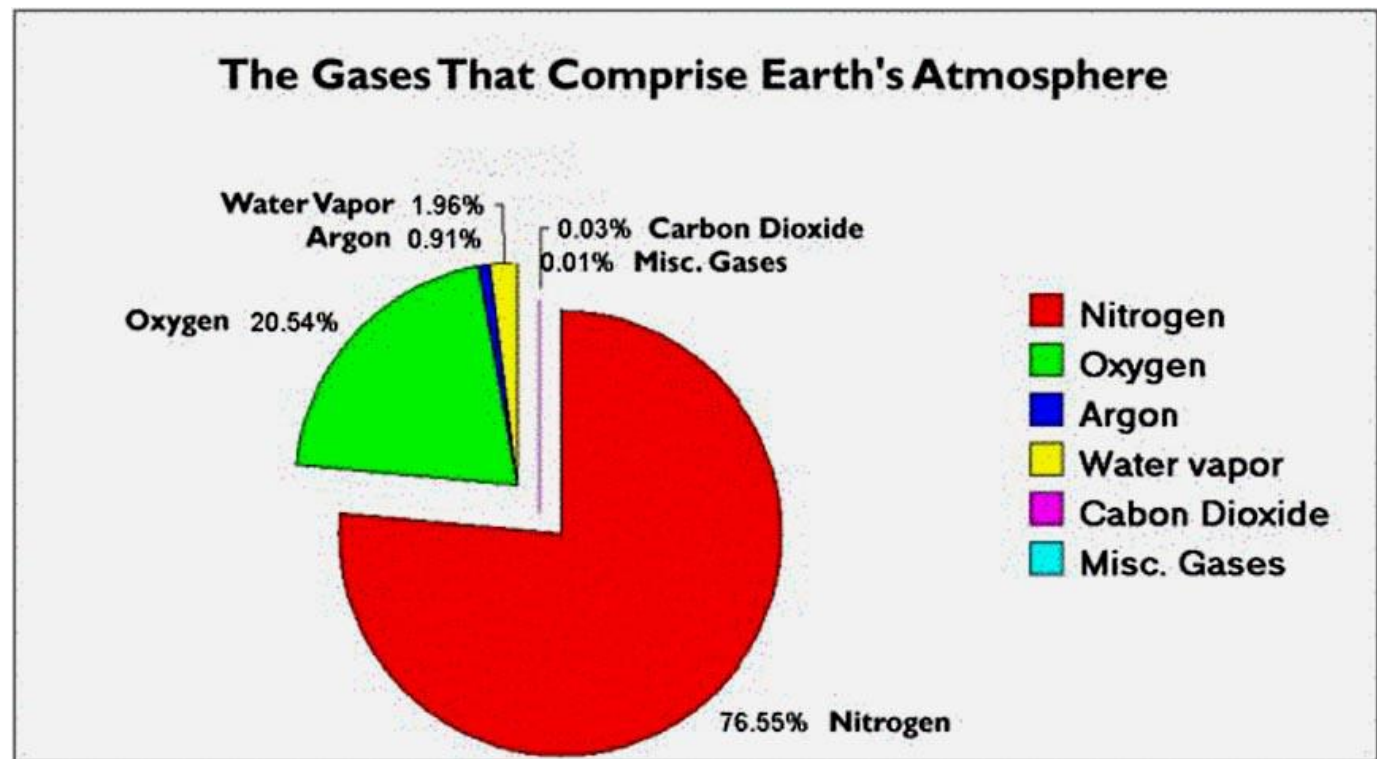
The Keeling Curve of atmospheric CO<sub>2</sub> concentrations measured at the Mauna Loa Observatory.

## Carbon dioxide in Earth's atmosphere An Inconvenient Truth





## Is CO<sub>2</sub> really causing Climate Change?



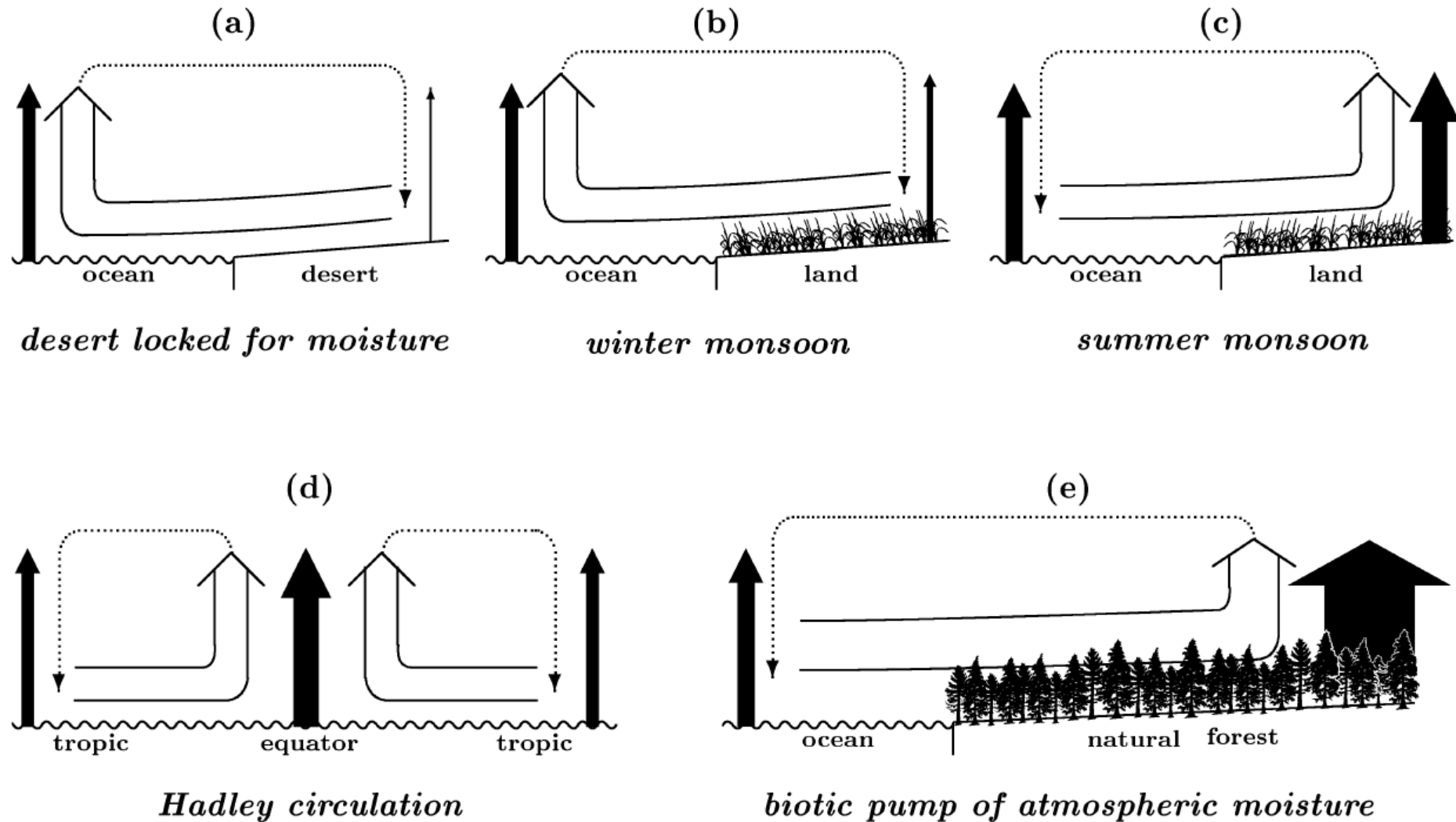
### From National Center for Policy Analysis: Global Warming Primer

CO<sub>2</sub> is a naturally occurring greenhouse gas. Humans and other animals emit CO<sub>2</sub> into the atmosphere when they exhale, and plants absorb it. CO<sub>2</sub> and other trace gases are only 5 percent of the greenhouse gases in the atmosphere. Water vapour makes up the other 95 percent.

Humans contribute about 3.4 percent of annual CO<sub>2</sub> emissions. But, small increases in annual CO<sub>2</sub> emissions, whether from humans or any other source, can lead to a large CO<sub>2</sub> accumulation over time because CO<sub>2</sub> molecules can remain in the atmosphere for more than a century.

Humanity is responsible for about one-quarter of one percent of the greenhouse effect.

It is indeed jaw-dropping when you consider that consensus science wants you to believe that atmospheric CO<sub>2</sub> - a mere 0.03 percent of the total volume of the atmosphere - is said to elevate global temperature by massively disobeying physical science.



**Fig. 4.** The physical principle that the low-level air moves from areas with weak evaporation to areas with more intensive evaporation provides clues for the observed patterns of atmospheric circulation. Black arrows: evaporation flux, arrow width schematically indicates the magnitude of this flux (evaporative force). Empty arrows: horizontal and ascending fluxes of moisture-laden air in the lower atmosphere. Dotted arrows: compensating horizontal and descending air fluxes in the upper atmosphere; after condensation of water vapor and precipitation they are depleted of moisture. (a) Deserts: evaporation on land is close to zero, so the low-level air moves from land to the ocean year round, thus “locking” desert for moisture. (b) Winter monsoon: evaporation from the warmer oceanic surface is larger than evaporation from the colder land surface; the low-level air moves from land to the ocean. (c) Summer monsoon: evaporation from the warmer land surface is larger than evaporation from the colder oceanic surface; the low-level air moves from ocean to land. (d) Hadley circulation (trade winds): evaporation is more intensive on the equator, where the solar flux is larger than in the higher latitudes; low-level air moves towards the equator year round; seasonal displacements of the convergence zone follow the displacement of the area with maximum insolation. (e) Biotic pump of atmospheric moisture: evaporation fluxes regulated by natural forests exceed oceanic evaporation fluxes to the degree when the arising ocean-to-land fluxes of moist air become large enough to compensate losses of water to runoff in the entire river basin year round.



**Deforestation –  
the real reason  
behind Climate  
Change?**





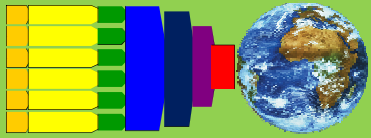
WELCOME TO THE  
**ANTHROPOCENE**

[www.anthropocene.info](http://www.anthropocene.info)

Welcome to the  
Anthropocene

[www.vimeo.com/39048998](http://www.vimeo.com/39048998)





# IMPACT MEASUREMENT AND TRADEOFFS



## Reducing Carbon Emissions *"The symptom"*

- Does not change bad industrial practices
- Does not reduce consumption patterns
- Shifts emissions to lesser pollutants
- Does not enable equitable development
- May be difficult to measure effectively

***Smoke and mirrors at "Fogenhagen"***

OR

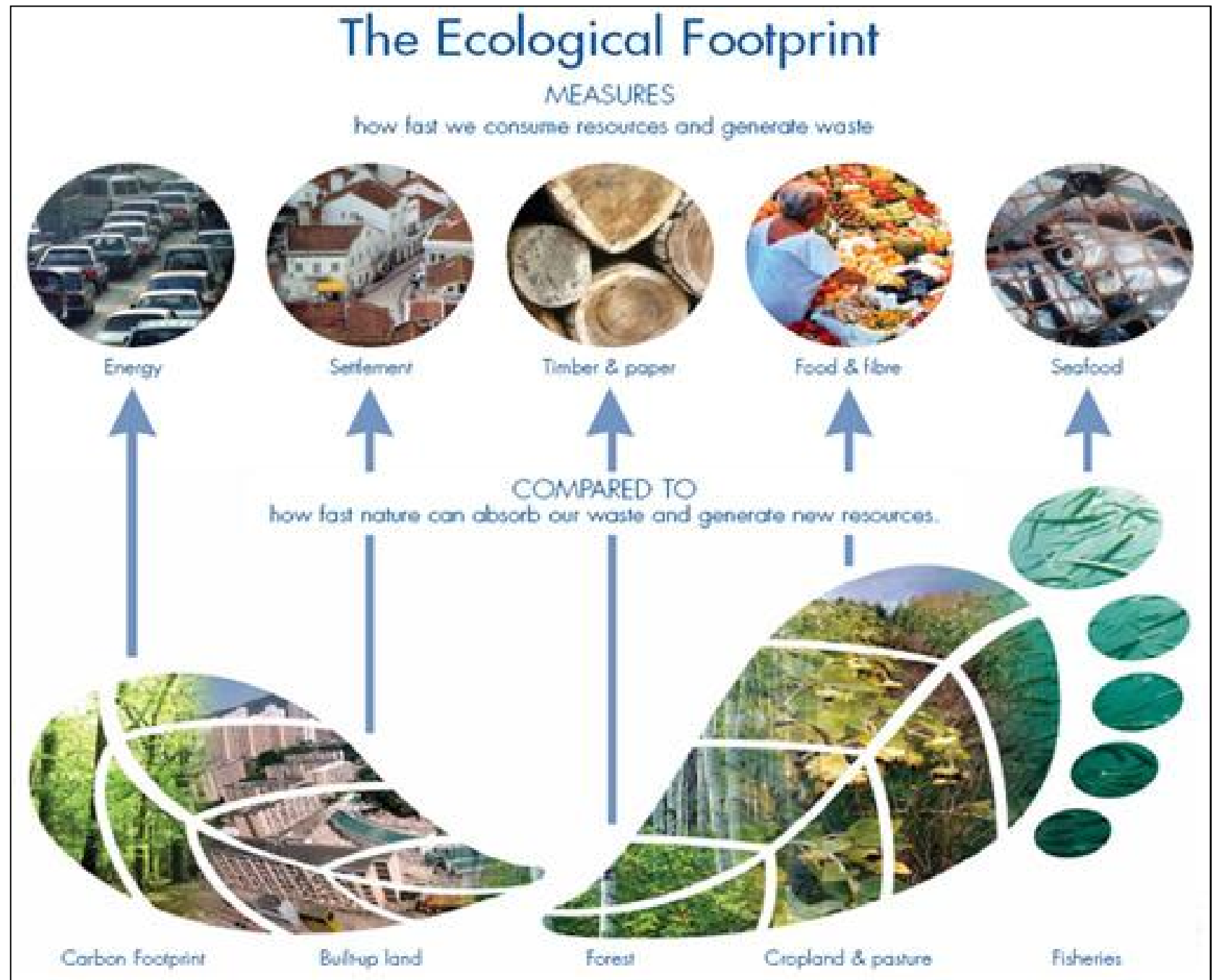


## Reducing Ecological Footprint *"The cause"*

- Promotes industrial efficiencies
- Reduces consumption patterns
- Promotes spread of new efficiencies
- Enables equitable development
- Measures are more tangible

***A vivid measurement of resource consumption and how many more planets Humanity requires***

Living Planet  
Report –  
Summary –  
from WWF



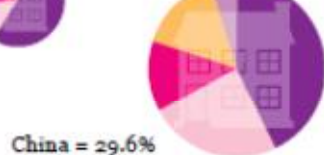
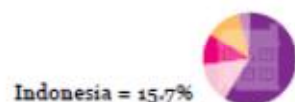
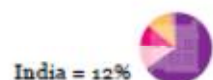


## A focus on emerging economies: BRIICS countries

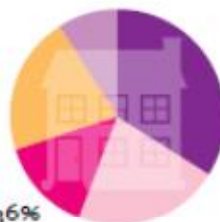
The rapid economic expansion of Brazil, Russia, India, Indonesia, China and South Africa – the so-called BRIICS group – merit special attention when looking at the Ecological Footprint and the pressure on biocapacity. High population growth in the BRIICS group along with increasing average consumption per person are contributing to an economic transformation. As a result, the BRIICS economies are expanding more rapidly than those of high-income countries. This growth will bring important social benefits to these countries. The challenge, however, is to do this sustainably.

Figure 30 highlights BRIICS countries' consumption trends by showing the Ecological Footprint associated with the direct expenditure of an average individual or resident (also known as "household consumption") broken down into five categories: food, housing, transport, goods and services. (More information about the Consumption Land Use Matrix – or CLUM – models on which these figures are based can be found in the glossary at the back of this report). Citizens of lower-income BRIICS countries have a far larger proportion of their footprint associated with direct expenditure on food than they do on other categories. In Brazil, India and Indonesia, food accounts for more than 50 per cent of the total household footprint. The remaining portion is split almost equally among goods, transportation and housing. As the BRIICS nations become wealthier, and the average Ecological Footprint increases, consumption patterns increasingly mirror high-income countries. South Africa and China, for example, are moving toward a more equal split between each of the consumption categories, indicative of industrialisation and increased income.

**BRIICS ECONOMIES ARE EXPANDING RAPIDLY – THE CHALLENGE IS TO DO THIS SUSTAINABLY**



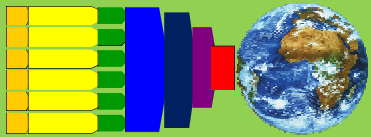
South Africa = 36%



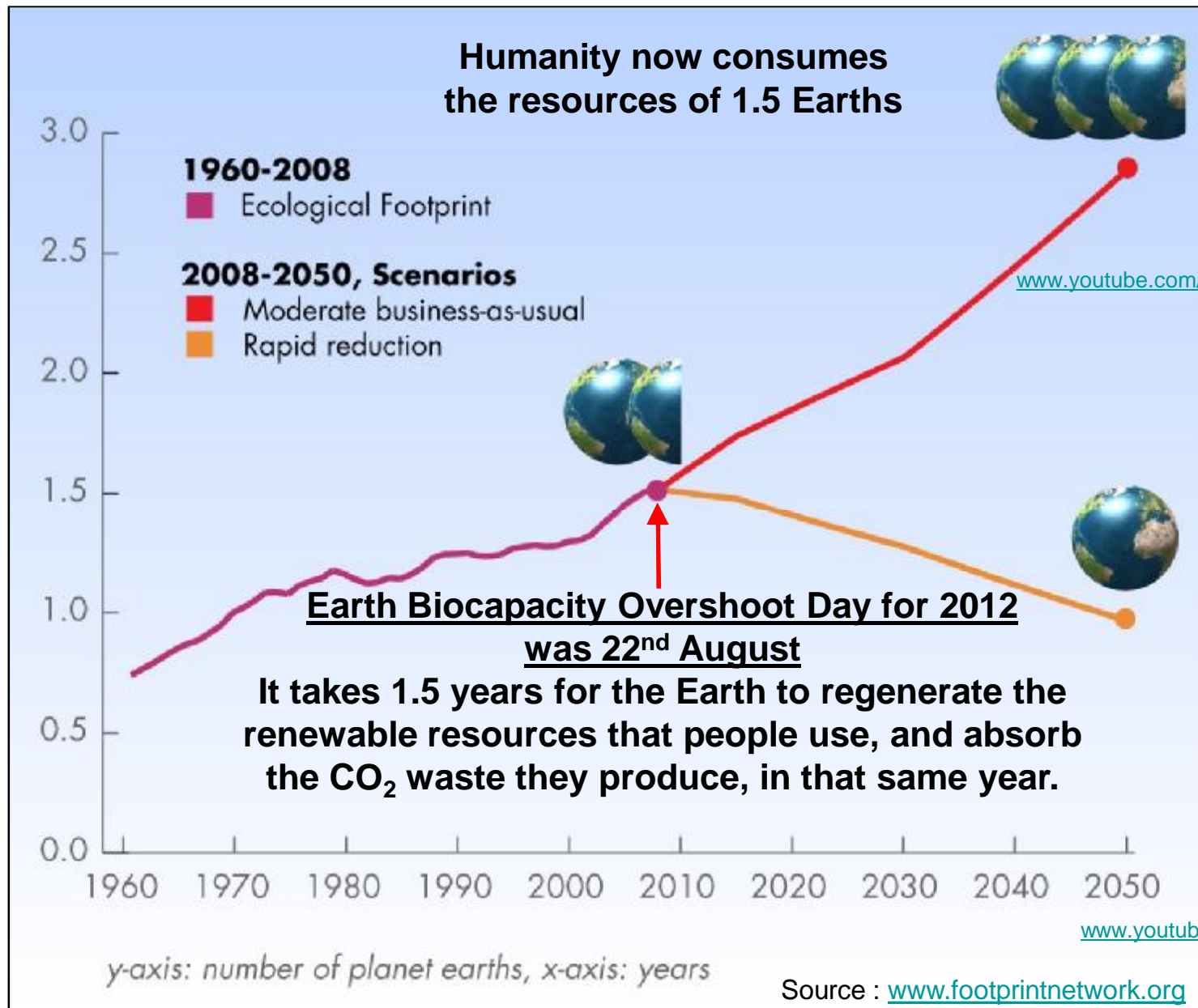
**Figure 30: Breakdown of the per capita household Ecological Footprint as a percentage of the USA in 2008 in BRIICS countries – based on the Ecological Footprint associated with the direct household expenditure on food, housing maintenance and operations, personal transportation, goods, and services (Global Footprint Network, 2011).**

Breakdown of per capita Ecological Footprint





# ECOLOGICAL FOOTPRINT



Earth Biocapacity Overshoot explained

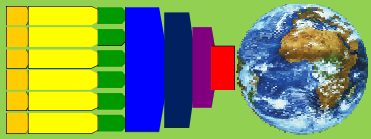
[www.youtube.com/watch?v=EuGuTsExN4Q&feature=plcp](http://www.youtube.com/watch?v=EuGuTsExN4Q&feature=plcp)

## Goal

To reduce Humanity's Ecological Footprint to within its Biocapacity

Will Humanity emulate a yeast culture cycle?

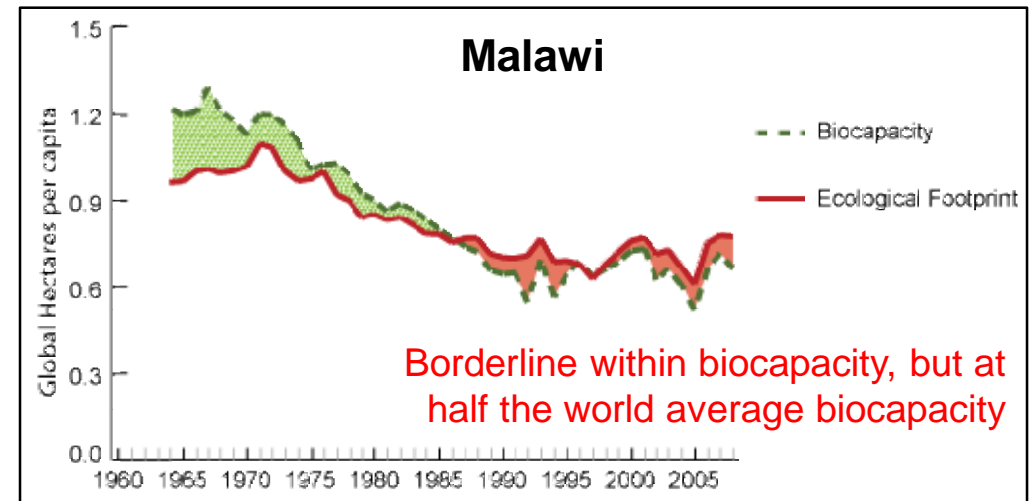
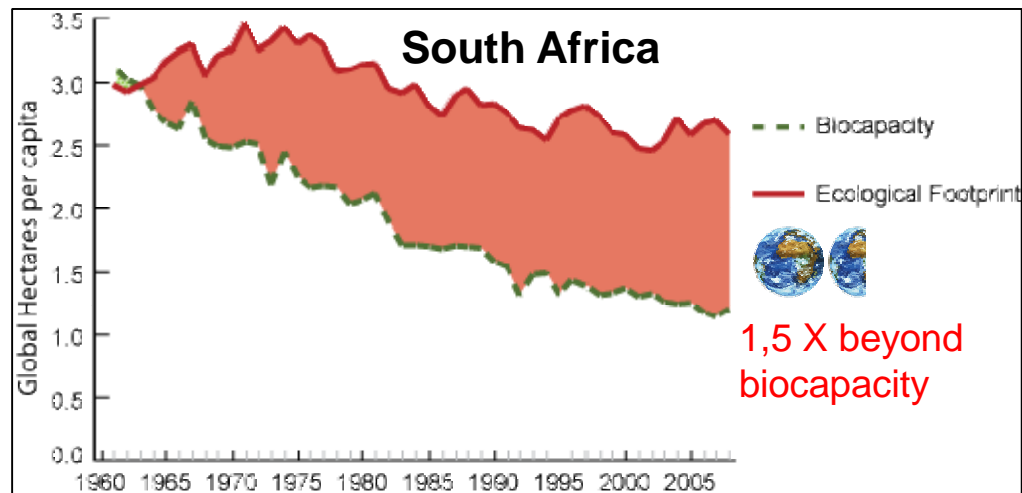
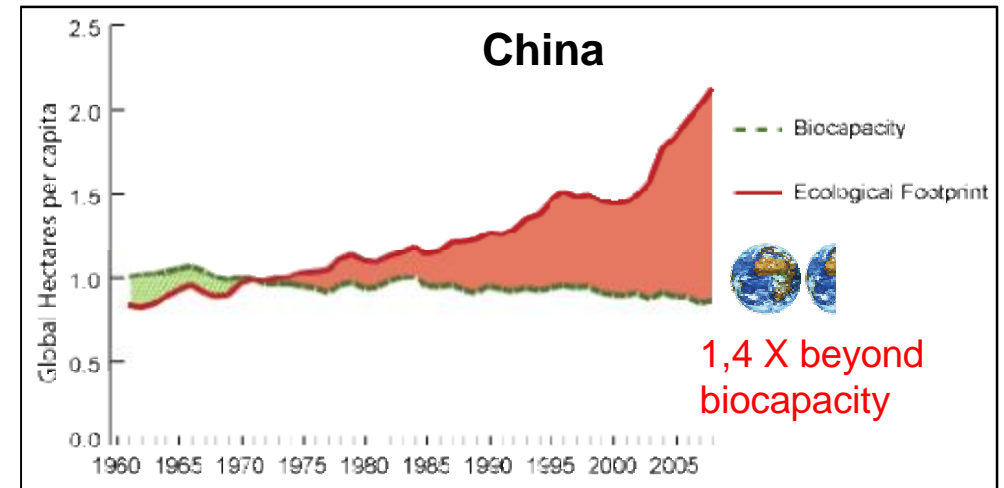
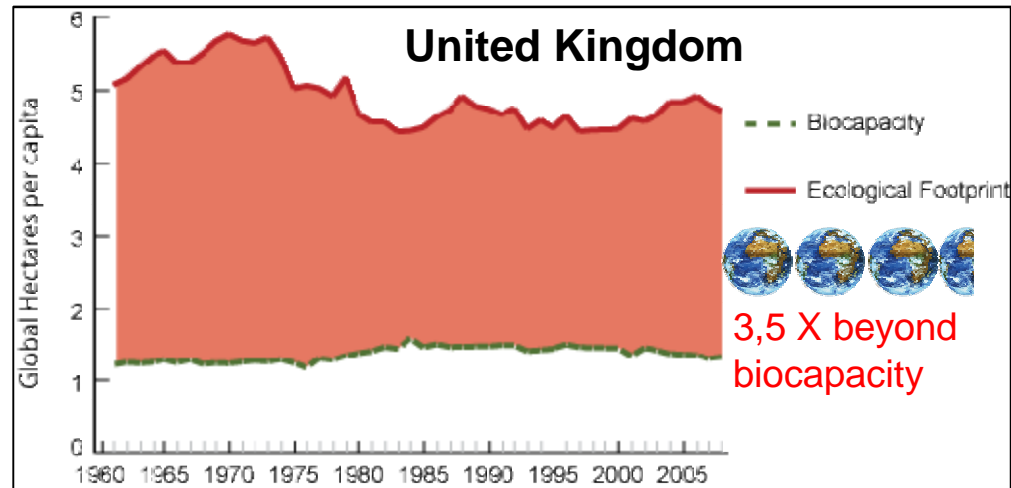
[www.youtube.com/watch?gl=US&v=SuvGpMevLPU](http://www.youtube.com/watch?gl=US&v=SuvGpMevLPU)



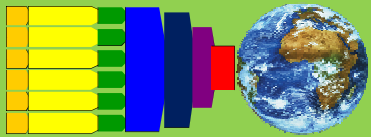
# ECOLOGICAL FOOTPRINT

## Ecological Footprint and associated Biocapacity for some nations

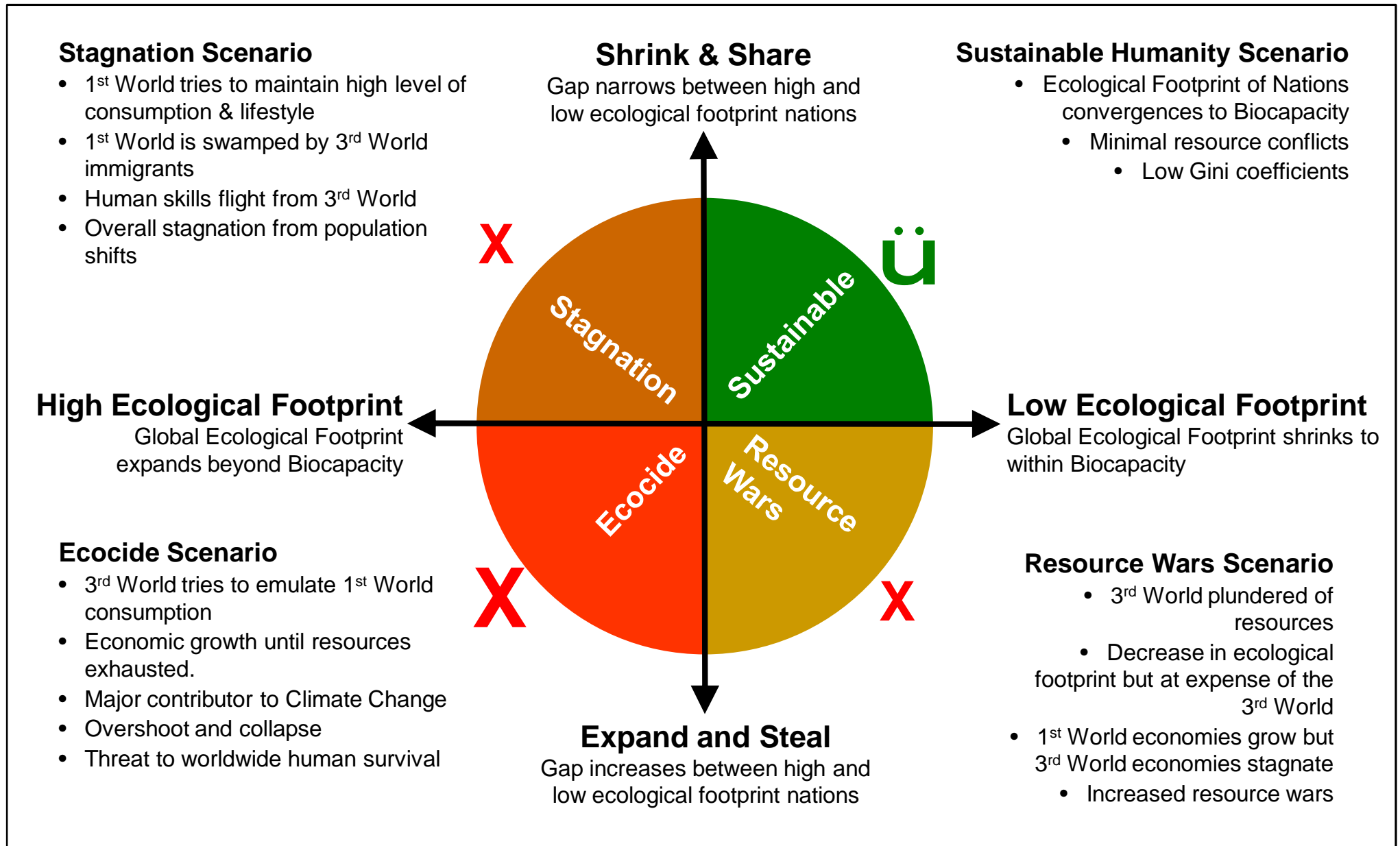
Source : [www.footprintnetwork.org](http://www.footprintnetwork.org)

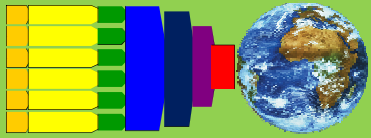






# HUMANITY'S FUTURE SCENARIOS





# UNIVERSAL ETHICS FOR SUSTAINABILITY

## Permaculture Ethics

### Earth Care

**Care of all living things, animals, plants, water, land and air.**

Earth care is about mimicking the Earth's natural ecosystems. It is about working with nature, not against it – not using natural resources unnecessarily or at a rate at which they cannot be replaced. It also means using outputs from one system as inputs for another and so minimizing wastage.

## United Nations & Other Ethics

### Biodiversity

The Convention on Biological Diversity gives rise to agreements wherein countries will conserve biodiversity, develop resources for sustainability and share the benefits resulting from their use.

### Earth Jurisprudence

Human societies will only be viable and flourish if they regulate themselves as part of the wider Earth community.

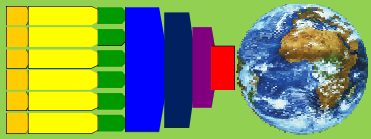
### Plan for 7 Generations

Indigenous culture of long-term way of acting and planning in order to consider how ones actions would affect the next seven generations.

## Universal Ethics for Sustainability

### Earth Care

Care of all living things, animals, plants, water, land and air, whilst embracing biodiversity, earth jurisprudence and planning for 7 generations.



# UNIVERSAL ETHICS FOR SUSTAINABILITY

## Permaculture Ethics

### People Care

**Providing for people's basic needs, and, promoting self reliance and responsibility.**

People care is about looking after us as people, not just the world we live in. It works on both an individual and a community level. Self-reliance, co-operation and support of each other should be encouraged. It is, however, important to look after ourselves on an individual level too. Our skills are of no use to anyone if we are too tired to do anything useful! People care is also about our legacy to future generations.

## United Nations & Other Ethics

### Human Rights

This UN declaration has served as the foundation for two binding UN human rights covenants, the International Covenant on Civil and Political Rights and the International Covenant on Economic, Social and Cultural Rights. Peace and harmony.

### Agenda 21

This is UN programme related to sustainable development and to mitigate against climate change. It is a comprehensive blueprint of action to be taken globally, nationally and locally by organizations of the UN, governments, and major groups in every area in which humans directly affect the environment.

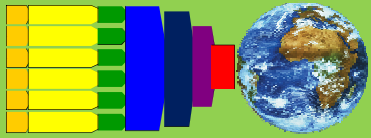
## Universal Ethics for Sustainability

### Earth Care

Care of all living things, animals, plants, water, land and air, whilst embracing biodiversity, earth jurisprudence and planning for 7 generations.

### People Care

Providing for people's basic needs, and, promoting self reliance and responsibility., whilst embracing the UN Charter for Human Rights and Agenda 21.



# UNIVERSAL ETHICS FOR SUSTAINABILITY

## Permaculture Ethics

### Fair Share

**Living within ones biocapacity and distribution of surplus resources and skills to achieve Earth care and People care.**

Fair share ethic brings earth care and people care together. We only have one Earth, and we have to share it - with each other, with other living things, and with future generations. This means limiting our consumption, especially of natural resources, and working for everyone to have access to the fundamental needs of life - clean water, clean air, food, shelter, meaningful employment, and social contact.

[www.permaculture.org.uk](http://www.permaculture.org.uk)

## United Nations & Other Ethics

### Millennium Development Goals

These are eight international development goals designed by the UN to eradicate extreme poverty, reducing child mortality rates, fighting disease epidemics such as AIDS, and developing a global partnership for development.

### Contraction & Convergence

The Global Commons Institute has proposed a global framework strategy designed to reduce overall emissions of greenhouse gases to a safe level (contraction), where the global emissions are reduced because every country brings emissions per capita to a level which is equal for all countries. It is intended to form the basis of an international agreement which will reduce carbon dioxide emissions to avoid climate change.

Wikipedia

## Universal Ethics for Sustainability

### Earth Care

Care of all living things, animals, plants, water, land and air, whilst embracing biodiversity, earth jurisprudence and planning for 7 generations.

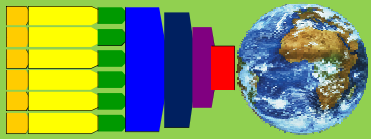
### People Care

Providing for people's basic needs, and, promoting self reliance and responsibility, whilst embracing the UN Charter for Human Rights and Agenda 21.

### Fair Share

Living within ones biocapacity and distribution of surplus resources and skills to achieve Earth care and People care, whilst implementing the Millennium Development Goals and adopting Contraction and Convergence to mitigate against climate change.





# SUSTAINABILITY ATTITUDES

## **Curtailment**

Entrench wide scale cutbacks of unnecessary consumption and materialism.

## **Co-operation**

Instill the spirit of co-operation instead competition.

## **Community**

Strengthen community involvement and linkages in all initiatives.

## **Human Scale**

Adapt solutions that can be undertaken largely by the effort of human labour.

## **Resilience**

Develop robust local economies that can withstand shocks from externalities and fickle global markets.

## **Re-skilling**

Focus education on sustainability and skills required to meet the challenges of a sustainable future

**Curtailment** means an immediate moratorium in the exploitation of natural resources in pristine natural areas yet untouched by Humanity; the cut back of extravagant lifestyles and unnecessary materialistic needs; and, the slow down and arresting of population growth.

**Co-operation** is all about tolerance and invoking an attitude of respect for each other's differences of opinion, and, the sharing of resources and innovations for the good of all Humanity.

**Community** is about invoking good neighbourliness, caring and mindfulness, and, extending this attitude to ones whole community, district, region, nation, and, amongst nations.

**Human Scale** solutions maximises the effort of labour to foster small scale initiatives with a relatively lower negative impact on the biocapacity and also mitigates against risk of environmental catastrophe.

**Resilience** is created by enhancing the diversity within a community, which is achieved by developing local capacity to meet primary needs and by improving the trading linkages within a community, thereby strengthening the local economy.

**Re-skilling** needs to create awareness of the state of the planet and associated strategies that will enable Humanity to sustain itself within its biocapacity, and therefore, re-direct education to empower Humanity towards its well being and equip with skills that will enhance the resilience of local economies.

## **Sustainability Attitudes**

**Curtailment**

**Co-operation**

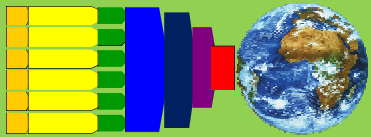
**Community**

**Human Scale**

**Resilience**

**Re-skilling**

If Humanity manages to survive to 2100 intact, it reflect back to the period around 2012 as the most crucial in its history wherein a paradigm shift was made to sustain itself by adopting the sustainability attitudes of curtailment, co-operation, community, human scale, resilience and re-skilling.



# DESIGN PRINCIPLES FOR SUSTAINABILITY

## Enabling Environment

<b>Public sensitization</b> Ensure that the public is fully aware and appraised of any initiatives and their consequential impact.	It is crucial that the public participates in and is made well aware of any long term sustainability plans, such as, Energy Descent Action Plans, so that any new project that arises can be well adjudicated and its impact mitigated to ensure its sustainability.
<b>Land value tax system</b> A means to incentivise land use for its highest productive purpose.	There is much land that is locked up in institutional bureaucracy and/or by land speculators which can be released for its best use by applying a tax system based on the rental value of land. This tax system will incentivise investors in land based projects, such as, mixed use residential developments, restoration of abandoned buildings, agriculture, community facilities, and even parks, recreation and conservation.
<b>New currency systems</b> Reduce debt created money and promote complementary currencies for local economies.	Complementary currencies are essential to provide the diversity required to support an international / inter-regional trading currency, and, to provide the human scale trading currency to ensure that a project will be sustainable and add value to the local economy.
<b>Energy Descent Planning</b> All initiatives to make allowance for a future with less energy.	A hierarchy of Energy Descent Action Plans from national, regional, district, community level ought to provide the institutional guiding framework for any project to be planned in accordance with a sustainable future plan.

## Enabling Environment

- Public sensitization
- Land value tax system
- New currency systems
- Energy Descent Planning

## Minimize Impact

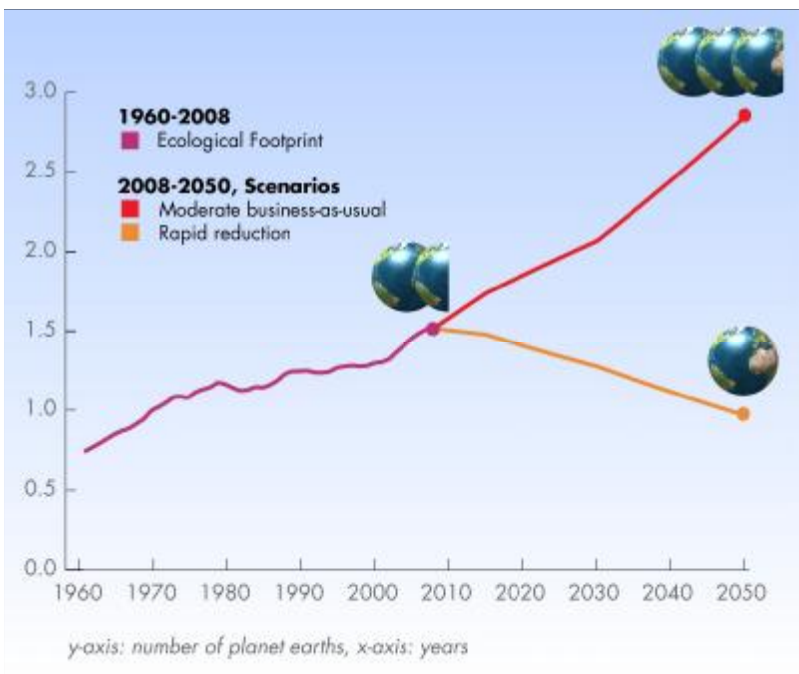
- Re-localization
- Cradle to Cradle Design
- Energy Return on Energy
- No pollution

## Minimize Waste

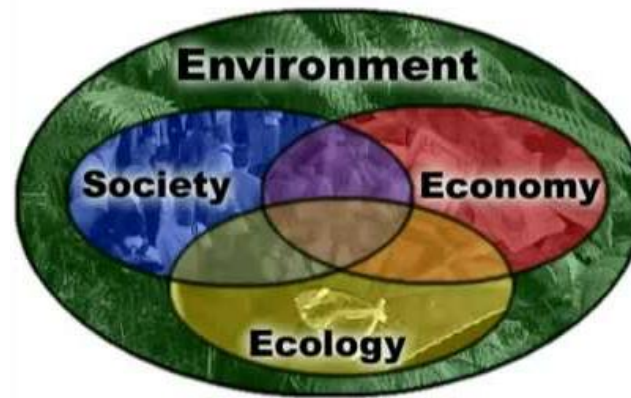
- Recycling
- Maintain & Rehabilitate
- Ecological Sanitation
- Ecological Water Use

## Restore Biocapacity

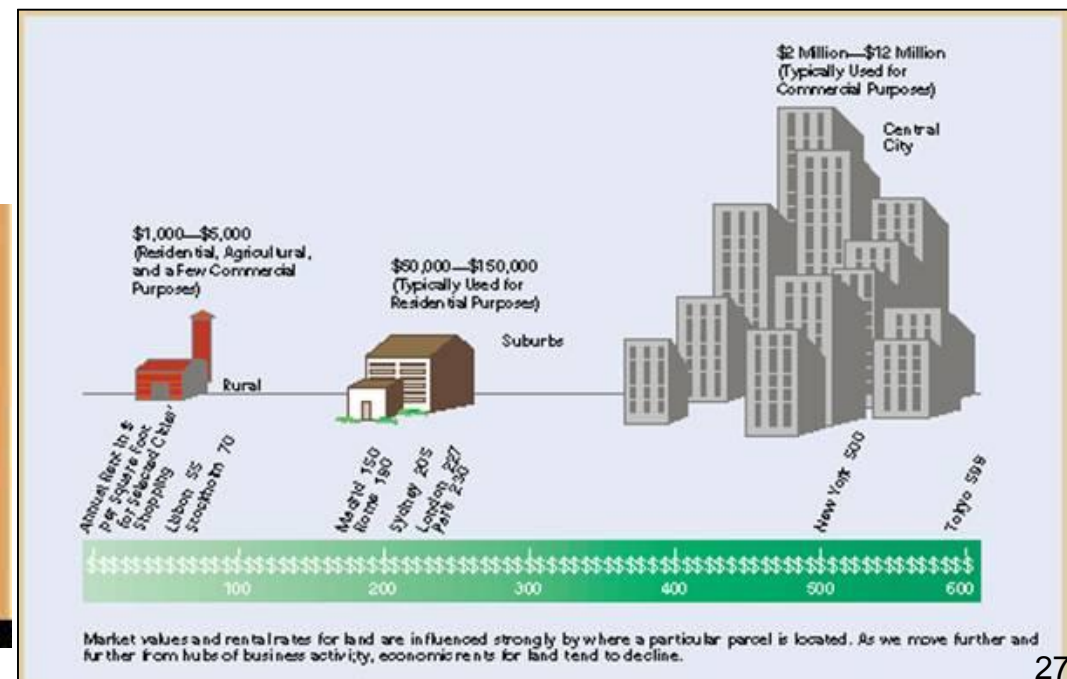
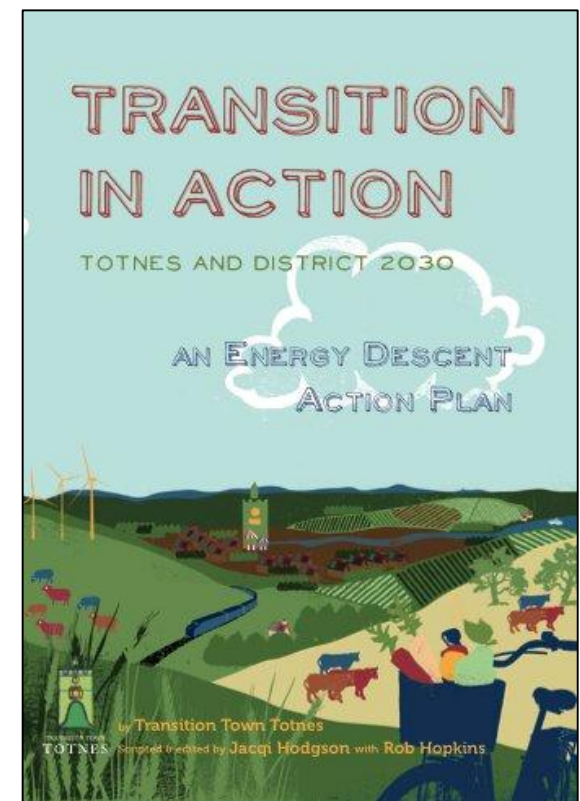
- Reafforestation
- Restore Waterways
- Extend Marine Sanctuaries
- Extend Conservation Areas
- Reclaim Deserts



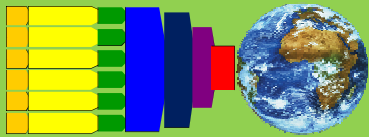
## Enabling Environment



## Totnes EDAP







# DESIGN PRINCIPLES FOR SUSTAINABILITY

## Minimize Impact

<b>Re-localization</b> Maximize the use of local resources and minimize the import of global resources.	The use of local resources should always be the first option in any project since this will directly benefit the local economy and enhance resilience. External resources should only be used if the ecological footprint thereof is beneficial. The impact and benefit of maximising local resources in any project is clearly visible to the local community, whilst the impact of external goods and resources is relatively immune to the local economy.
<b>Cradle to Cradle Design</b> All man made creations to deconstruct themselves with minimal energy usage and pollution.	The design of goods that will depreciate and become obsolete must take into account within the design process how such goods can be disposed of, and/or, recycled for their next best use with minimal energy usage and pollution. The emergy (embedded energy) within a project is an important indicator that should be used to differentiate amongst design options and make for the most optimum selection.
<b>Energy Return On Energy Investment</b> Minimum ratio of EROEI of 3:1 to be considered for projects.	All energy generating projects need to be carefully considered in accordance to EROEI criteria and not only on a financial basis, which usually does not include environmental costs. Only projects with at least a 3:1 EROEI ratio should be considered. Similarly, non-energy projects should also use EROEI criteria by choosing design options with a relatively lower emergy.
<b>No pollution</b> Minimum discharge of harmful substances into the atmosphere and into the ground.	Projects must be designed in such a manner that pollution to the atmosphere and ground is nullified, and, that the cost of such pollution must be an important criteria in the evaluation of design options.

## Enabling Environment

- Public sensitization
- Land value tax system
- New currency systems
- Energy Descent Planning

## Minimize Impact

- Re-localization
- Cradle to Cradle Design
- Energy Return on Energy
- No pollution

## Minimize Waste

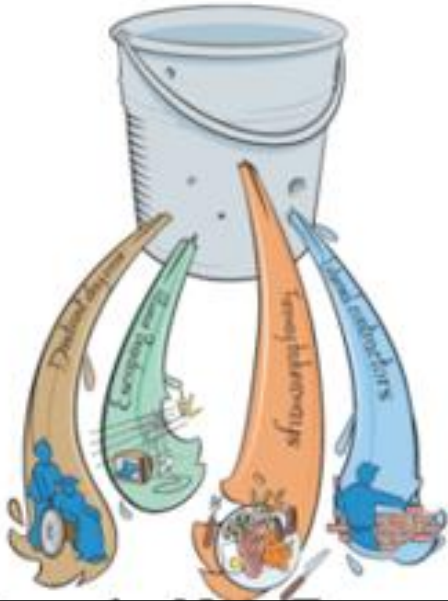
- Recycling
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## Restore Biocapacity

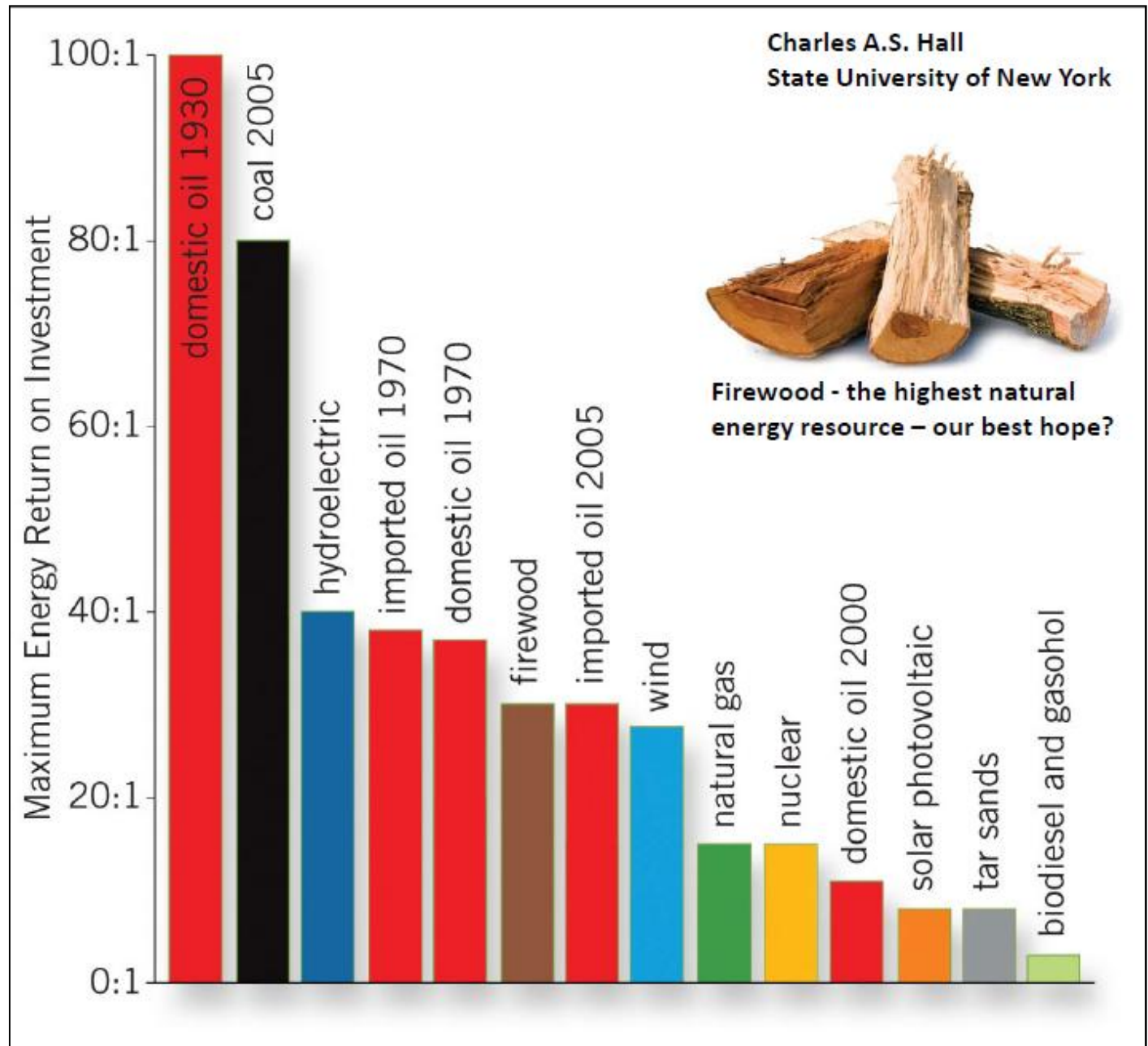
- Reafforestation
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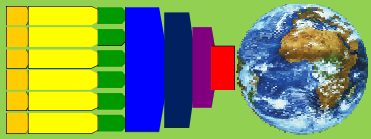
## THE LEAKY BUCKET

Money leaks out of an economy in many different ways



## Minimize Impact





# DESIGN PRINCIPLES FOR SUSTAINABILITY

## Minimize Waste

<b>Recycling</b> Waste to be designed for next best use.	The design process must take into account the upstream and downstream flow of components in the project assembly, operation, closure and dismantling process. The waste of one project should be the resource input of another project.
<b>Maintain and Rehabilitate</b> Lower emergy than new build..	Adequate maintenance usually promotes longevity, which in turn reduces the need for new build. The emergy of rehabilitation is often less than new build, especially if well maintained.
<b>Ecological Sanitation</b> Treatment of sewage with biological systems.	The opportunity for ecological sanitation systems to replace unsustainable waterborne sewage systems is vast and necessary since water is already a scarce commodity. Ecological sanitation systems are also environmentally friendly and can produce organic fertilizer by products for the agricultural industry.
<b>Ecological Water Use</b> Rainwater harvesting and grey water systems.	Water is a scarce commodity and besides its sustainable use in ecological sanitation systems, it should also be recycled in grey water systems for further downstream use, especially for agriculture. Rainwater harvesting, both for domestic / industrial and in large scale landscape designs for agriculture has much latent potential that must be incorporated within the design process of any project.

## Enabling Environment

- Public sensitization
- Land value tax system
- New currency systems
- Energy Descent Planning

## Minimize Impact

- Re-localization
- Cradle to Cradle Design
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- No pollution

## Minimize Waste

- Recycling
- Maintain & Rehabilitate
- Ecological Sanitation
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## Restore Biocapacity

- Reafforestation
- Restore Waterways
- Extend Marine Sanctuaries
- Extend Conservation Areas
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## Minimize Waste

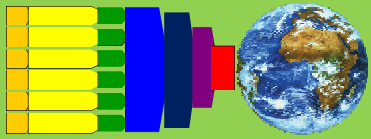


**Telki FBRS 800 m<sup>3</sup>/day Municipal Sewage Treatment Plant, Engineered and Built by Organica.**



**The Harlow North Design is for 5,000 pe, with 100 l/pe/day, giving a daily flow of 500 m<sup>3</sup>/day at twice typical concentrations.**





# DESIGN PRINCIPLES FOR SUSTAINABILITY

## Restore Biocapacity

<b>Reafforestation</b> Restore and extend forest areas.	Forests provide an enormous carbon sink, species diversity and biotic pump that moderates climate extremes; and hence the urgent need stop any further deforestation, to restore forest areas, to extend forest cover, and, to preserve forest reserves.
<b>Restore Water Systems</b> Clean up water courses, riverine areas and coastal zones.	Many pollutants eventually leach into and contaminate water systems and fragile ecosystems, such as, aquifers, streams, rivers, wetlands, lakes, dams, estuaries, deltas, coastlines and seas. An extraordinary effort is required to clean up this mess and restore water systems that are essential to the increase in the overall biocapacity.
<b>Extend Marine Sanctuaries</b> Proclaim new marine sanctuaries to restore fish stocks and diversity.	Many fishing grounds are depleted by over fishing and without drastic action fish stocks will not recover and many species will become extinct, and hence the need to maintain existing and proclaim new marine sanctuaries.
<b>Extend Conservation Areas</b> Annex low density inhabited areas into existing conservation areas.	New developments are continually encroaching upon unspoilt areas and thus further threatening nature with loss of biodiversity and species decline. To restore biocapacity, this encroachment must cease and such areas, as well as new areas, be encouraged to merge with existing conservation areas.
<b>Reclaim Deserts</b> Arrest desertification and reclaim desert areas.	Rapid climate change and anthropogenic activity is negatively affecting many arid and semi-arid areas. Further expansion of these areas needs to be urgently arrested by mitigating actions.

## Enabling Environment

- Public sensitization
- Land value tax system
- New currency systems
- Energy Descent Planning

## Minimize Impact

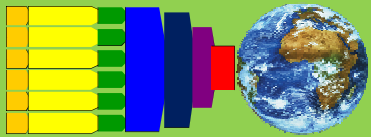
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- Energy Return on Energy
- No pollution

## Minimize Waste

- Recycling
- Maintain & Rehabilitate
- Ecological Sanitation
- Ecological Water Use

## Restore Biocapacity

- Reafforestation
- Restore Waterways
- Extend Marine Sanctuaries
- Extend Conservation Areas
- Reclaim Deserts



# FOUNDATION FOR SUSTAINABLE DESIGN

## Design Principles

### Enabling Environment

- Public sensitization
- Land value tax system
- New currency systems
- Energy Descent Planning

### Minimize Impact

- Re-localization
- Cradle to Cradle Design
- Energy Return on Energy
- No pollution

### Minimize Waste

- Recycling
- Ecological Sanitation
- Ecological Water Use

### Restore Biocapacity

- Reafforestation
- Restore Waterways
- Extend Marine Sanctuaries
- Extend Conservation Areas
- Reclaim Deserts

## Sustainability Attitudes

### Curtailement

Entrench wide scale cutbacks of unnecessary consumption and materialism

### Co-operation

Instill the spirit of co-operation instead of competition

### Community

Strengthen community involvement and linkages in all initiatives.

### Human Scale

Adapt solutions that can be undertaken largely by the effort of human labour.

### Resilience

Develop robust local economies that can withstand shocks from externalities and fickle global markets.

### Re-skilling

Focus education on sustainability and skills required to meet the challenges of a sustainable future

## Sustainability Ethics

### Earth Care

Care of all living things, animals, plants, water, land and air, whilst embracing biodiversity, earth jurisprudence and planning for 7 generations.

### People Care

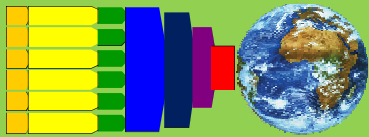
Providing for people's basic needs, and, promoting self reliance and responsibility., whilst embracing the UN Charter for Human Rights and Agenda 21.

### Fair Shares

Living within ones biocapacity and distribution of surplus resources and skills to achieve Earth care and People care, whilst implementing the Millennium Development Goals and adopting Contraction and Convergence to mitigate against climate change.

## Goal

**To reduce  
Humanity's  
Ecological  
Footprint to  
within its  
Biocapacity**



# FOUNDATION FOR SUSTAINABLE DESIGN

## Earth Care

Care of all living things, animals, plants, water, land and air, whilst embracing biodiversity, earth jurisprudence and planning for 7 generations.



## Fair Shares

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Providing for people's basic needs, and, promoting self reliance and responsibility., whilst embracing the UN Charter for Human Rights and Agenda 21.

## Curtailment

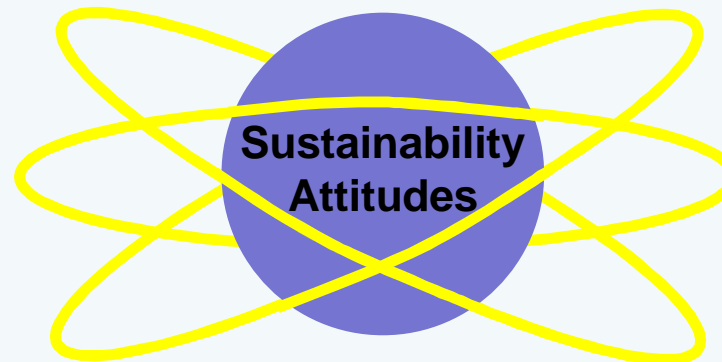
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## Sustainability Design Principles

### Enabling Environment

- Public sensitization
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- New currency systems
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### Minimize Impact

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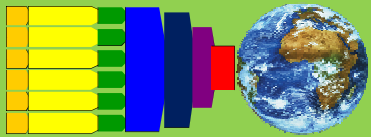
### Minimize Waste

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### Restore Biocapacity

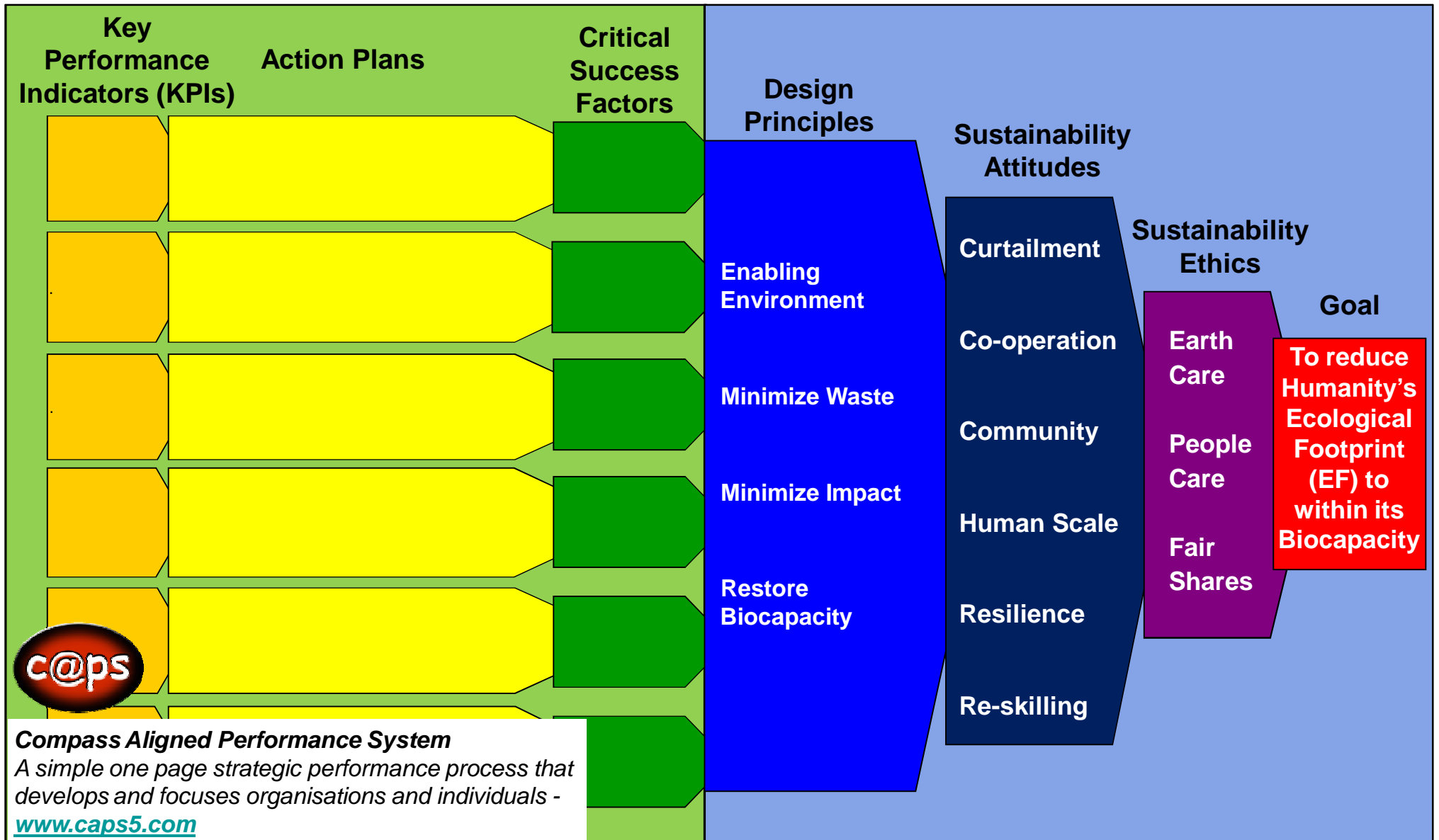
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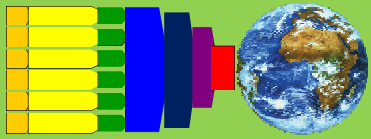




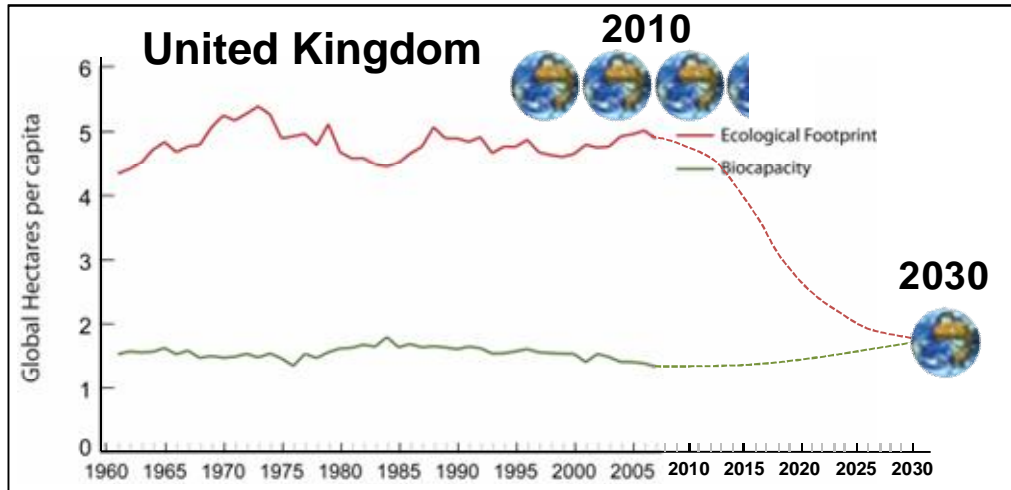
# THE STRATEGIC FRAMEWORK MODEL

Economic Sector Action Plans + Foundation for Sustainable Design





# ECONOMIC SECTOR ACTION PLANS AN EXAMPLE FOR THE UK



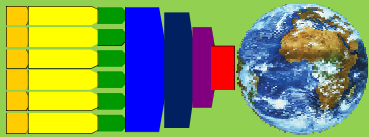
## Household Ecological Footprint (gha/capita)

Housing	1.30	24.5%
Transport	0.94	17.7%
Food	1.33	25.1%
Consumer Items	0.71	13.4%
Private Services	0.30	5.6%
Public Services	0.59	11.2%
Capital Investment	0.12	2.3%
Other	0.01	0.1%
<b>Total</b>	<b>5.30</b>	<b>100.0%</b>

## Illustrative Target Reduction of Ecological Footprint per Economic Sector

Economic Sector	gha/capita	% gha/capita	Target reduction gha/capita
Agriculture	1.33	25.0%	0.43
Transport	0.95	18.0%	0.31
Energy	1.33	25.0%	0.43
Construction	0.37	7.0%	0.12
Tourism	0.37	5.0%	0.12
Financial Services	0.80	15.0%	0.26
Other	0.16	5.0%	0.05
<b>Total (gha/capita)</b>	<b>5.30</b>	<b>100.0%</b>	<b>1.70</b>

**Note :-** These figures are only illustrative, save for Food and Transport, but, Energy can be attributed to Housing, whilst Construction and Tourism are a reasonable assumption. Financial Services can be substantially more, but is already included in many of the other sectors.



# ECONOMIC SECTOR ACTION PLANS AN EXAMPLE FOR THE UK

## Key Performance Indicators

## Action Plans

## Critical Success Factors

### Agricultural Sector

1. Promote LEISA (Low External Input Sustainable Agriculture) practices
2. Establish Farmers Support Centres
3. Promote small farmers markets
4. Establish DFIs for small scale farmers
5. Redistribute land to small scale farmers

**Reduce EF from 1.33 to 1.00 to 0.43  
ha pc in 10 & 20 years, respectively.**

### Transport Sector

1. Establish more bus routes
2. Establish more rail rolling stock
3. Promote usage of renewable fuels
4. Establish more cycling routes
5. Build less roads

**Reduce EF from 0.95 to 0.60 to 0.31  
ha pc in 10 & 20 years, respectively.**

### Energy Sector

1. Establish wind farms
2. Establish solar heating
3. Establish biomass energy plants
4. Establish micro-hydro schemes
5. Establish geothermal plants

**Reduce EF from 1.33 to 1.00 to 0.43  
ha pc in 10 & 20 years, respectively.**

### Construction Sector

1. Promote natural building systems
2. Promote retro fitting
3. Promote rehab rather than new build
4. Promote ecological sanitation & water use
5. Promote holistic planning & mixed use

**Reduce EF from 0.37 to 0.20 to 0.12  
ha pc in 10 & 20 years, respectively.**

### Tourism Sector

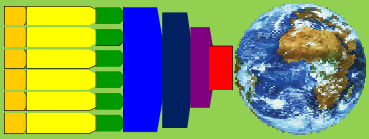
1. Promote cultural tourism
2. Promote home stay experiences
3. Promote local eco-destinations
4. Promote sports adventure tourism
5. Promote pilgrimage routes

**Reduce EF from 0.37 to 0.20 to 0.12  
ha pc in 10 & 20 years, respectively.**

### Financial Services Sector

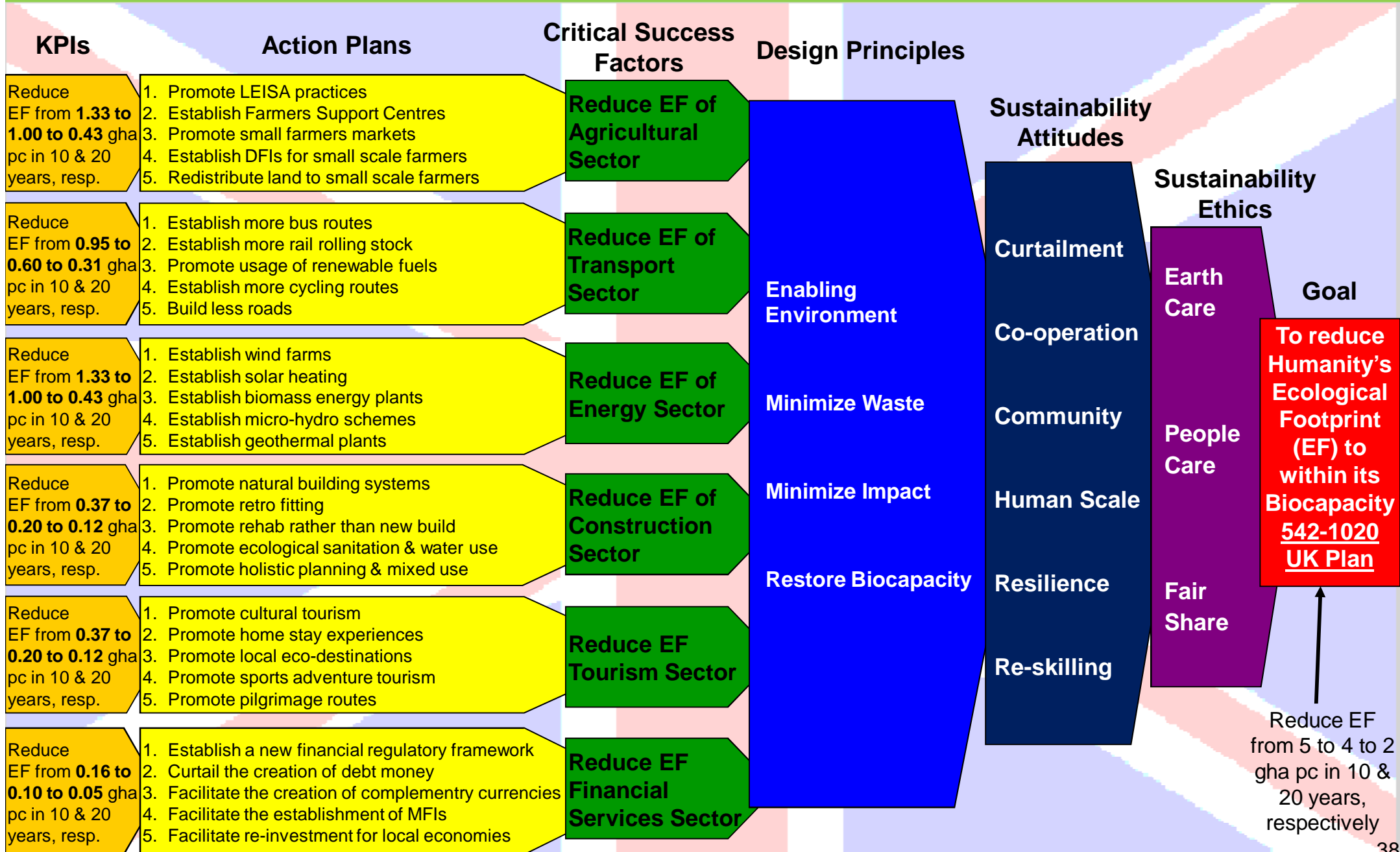
1. Establish a new financial regulatory framework.
2. Curtail the creation of debt money.
3. Facilitate the establishment of complementary currencies.
4. Facilitate the establishment of MFIs.
5. Facilitate re-investment mechanisms for local economies.

**Reduce EF from 0.16 to 0.10 to 0.05  
ha pc in 10 & 20 years, respectively.**

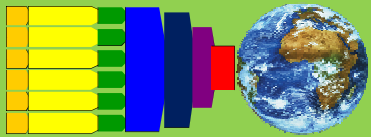


# STRATEGIC FRAMEWORK FOR SUSTAINABILITY

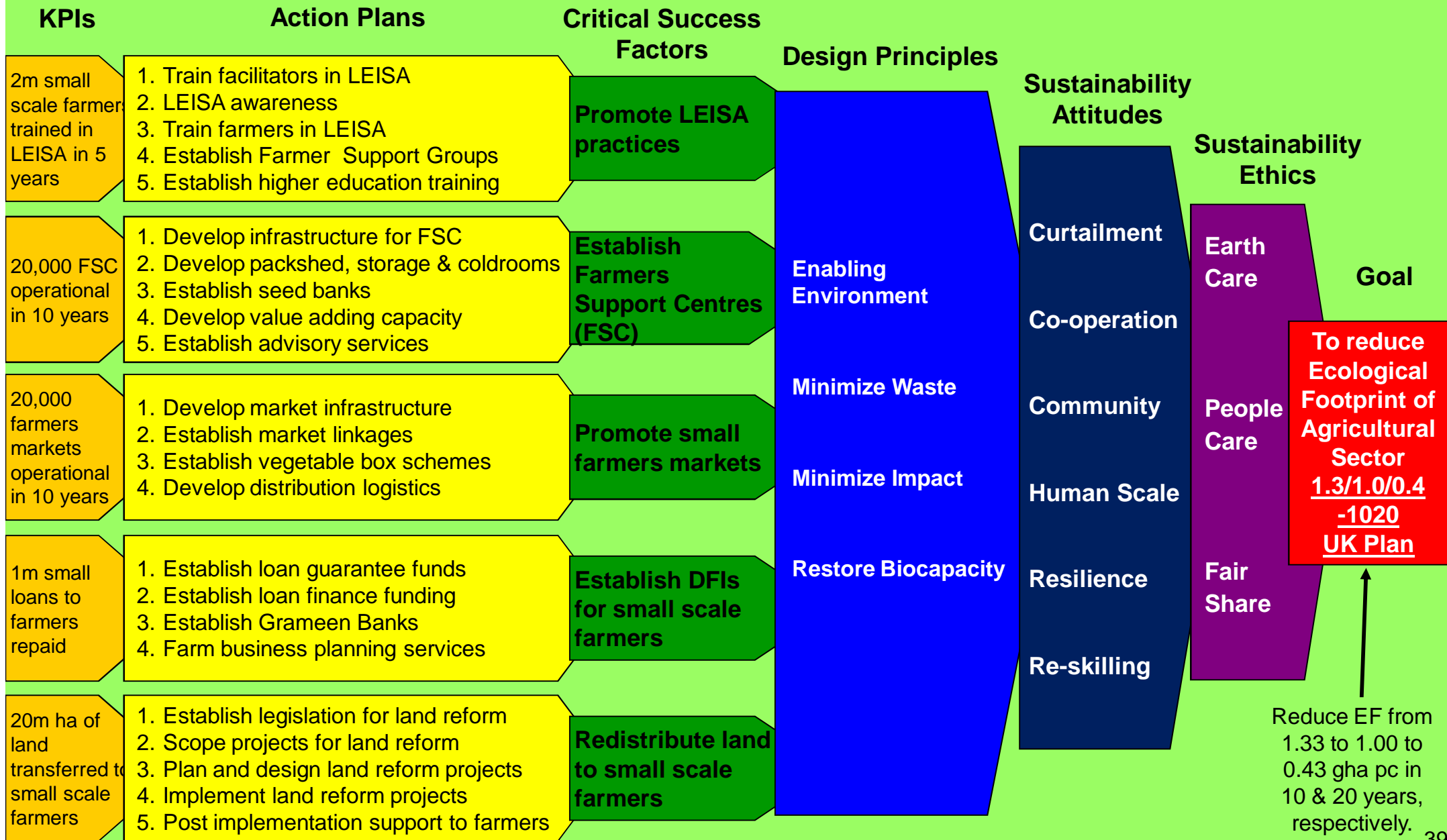
## AN EXAMPLE FOR THE UK







# STRATEGIC FRAMEWORK FOR AGRICULTURAL SECTOR SUSTAINABILITY

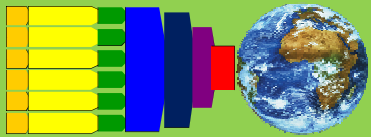


# Family Farm or Corporate Farm

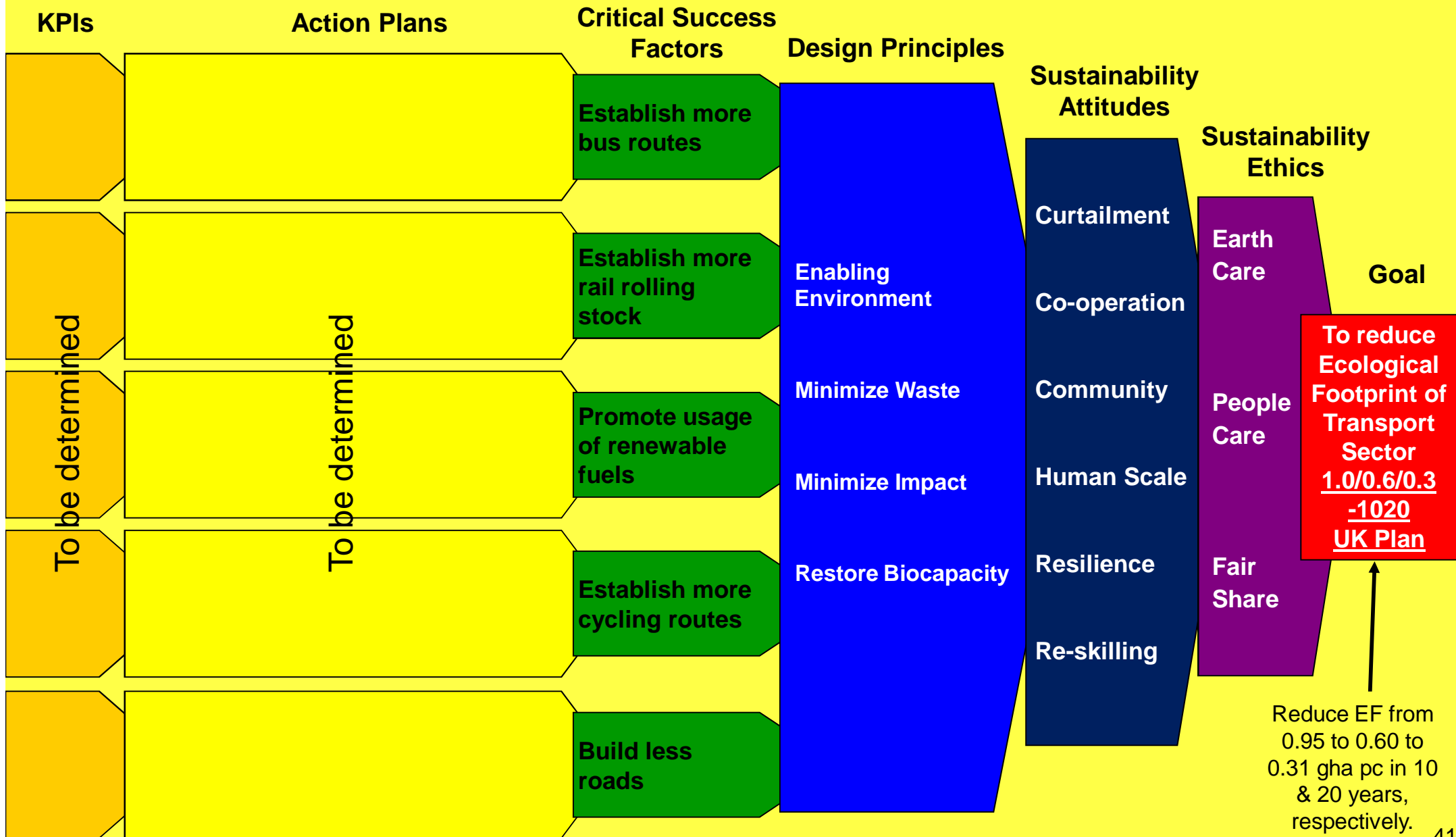


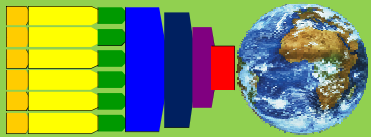
- 10 calories of fossil fuels consumed per calorie of food energy produced
  - Destroying life-giving soil
  - Using fossil fuel water
- Exploitation of migrant workers
  - Short life span
- Suffering of farm animals
- Increasing levels of obesity and diabetes in population
- Destroyed livelihoods

[www.communitysolutions.org](http://www.communitysolutions.org)

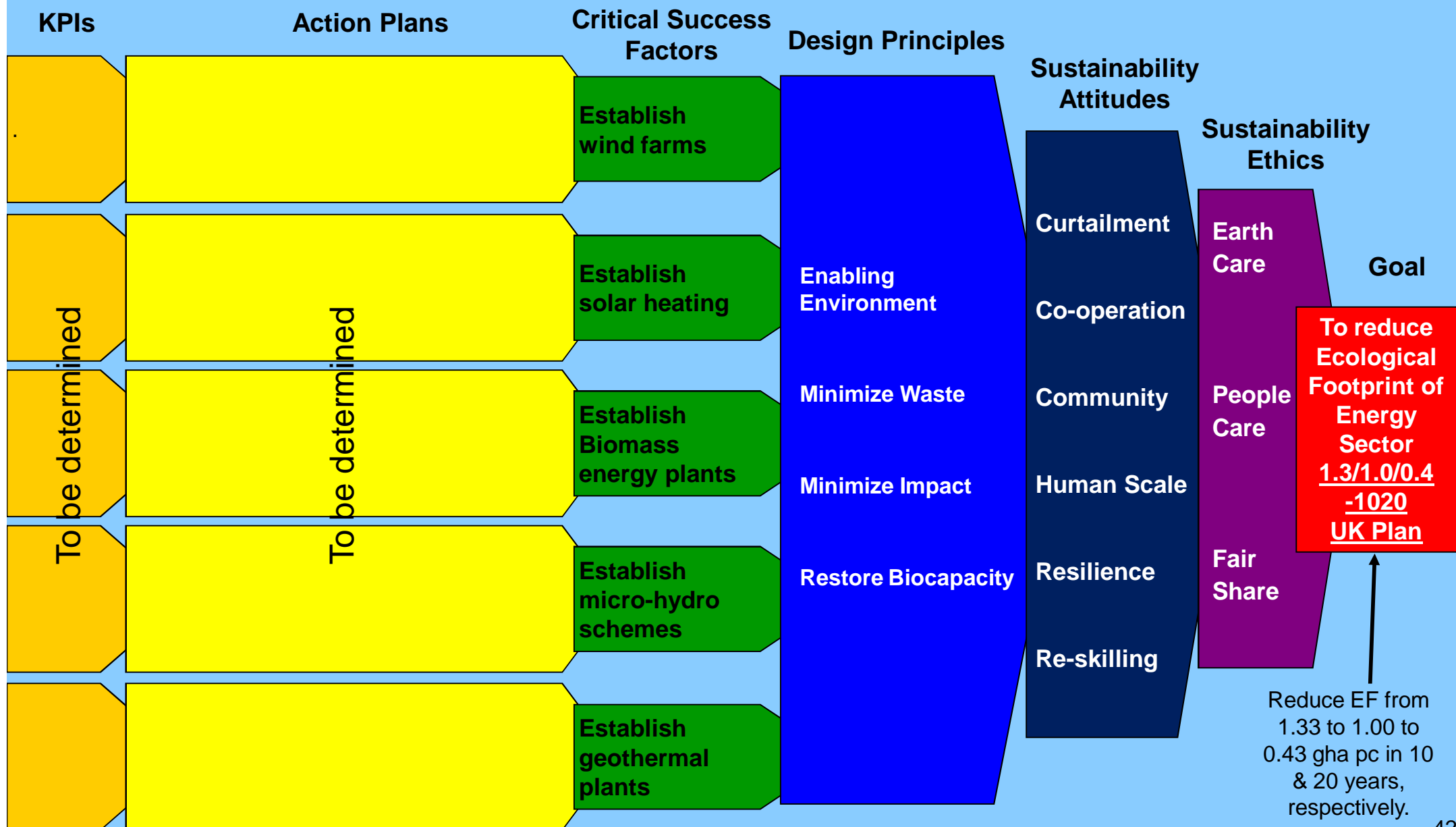


# STRATEGIC FRAMEWORK FOR TRANSPORT SECTOR SUSTAINABILITY

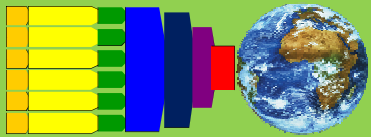




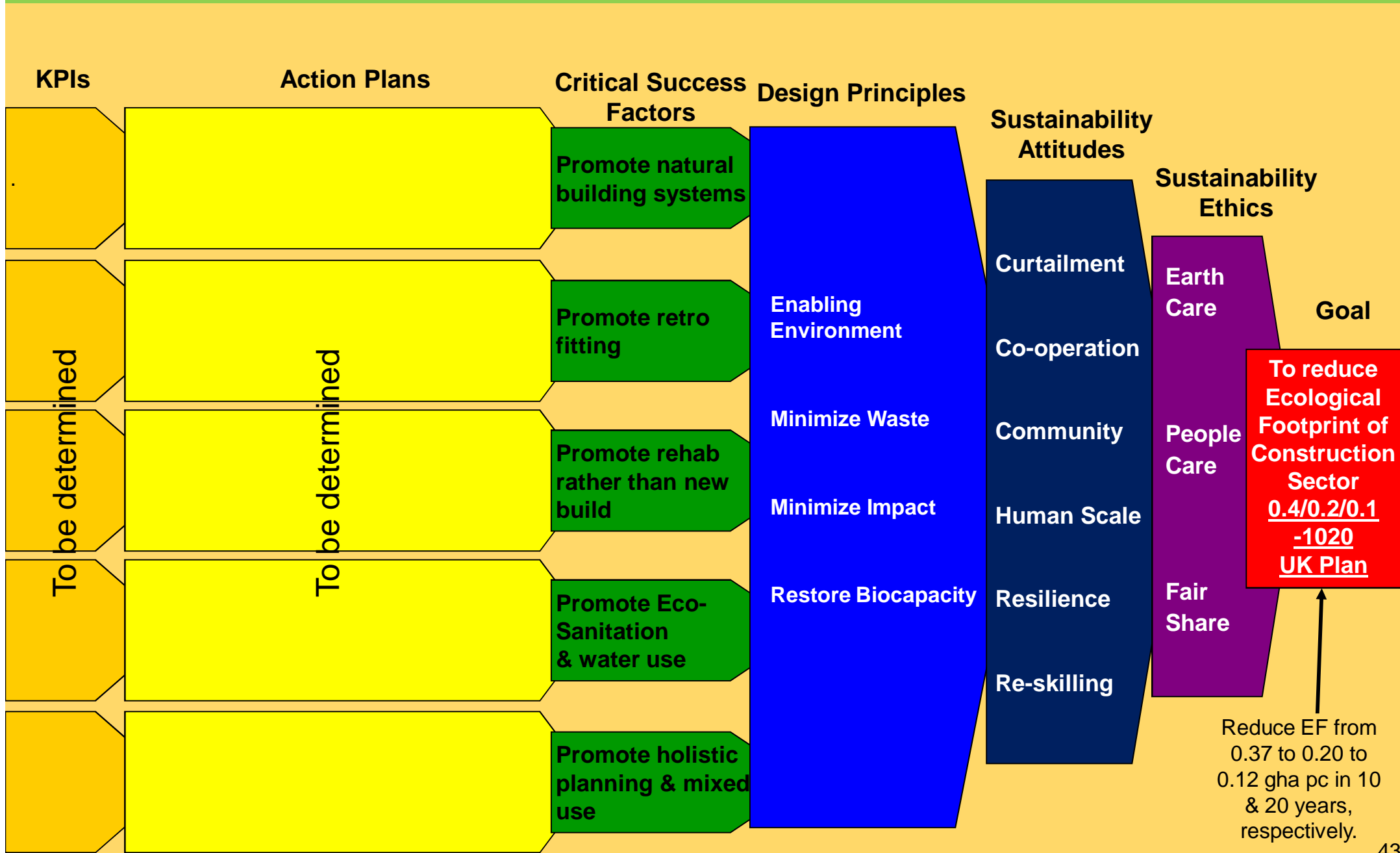
# STRATEGIC FRAMEWORK FOR ENERGY SECTOR SUSTAINABILITY

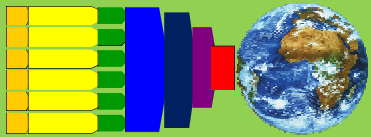




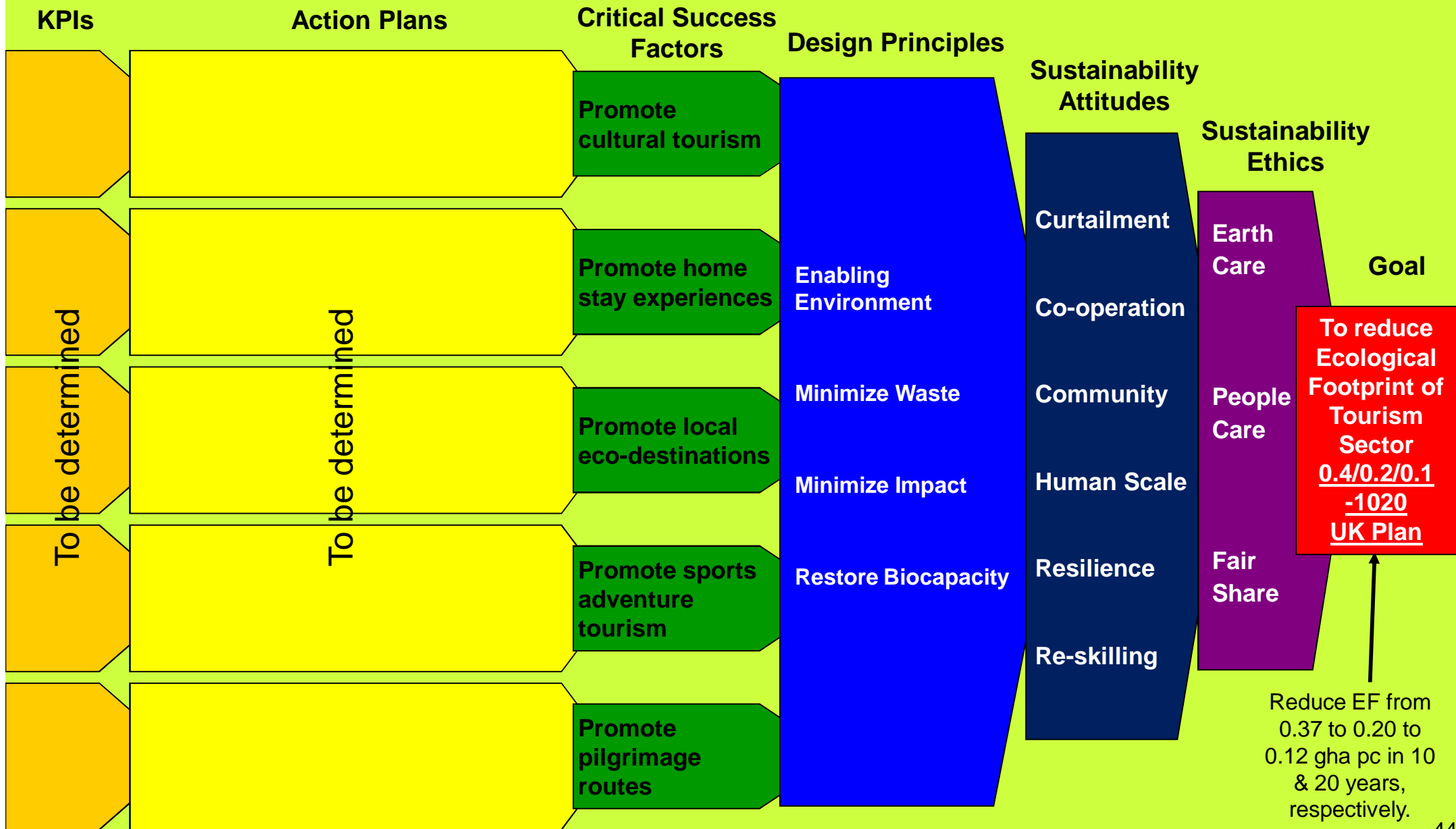


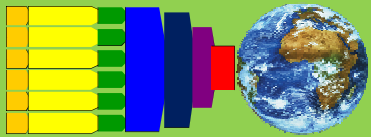
# STRATEGIC FRAMEWORK FOR CONSTRUCTION SECTOR SUSTAINABILITY



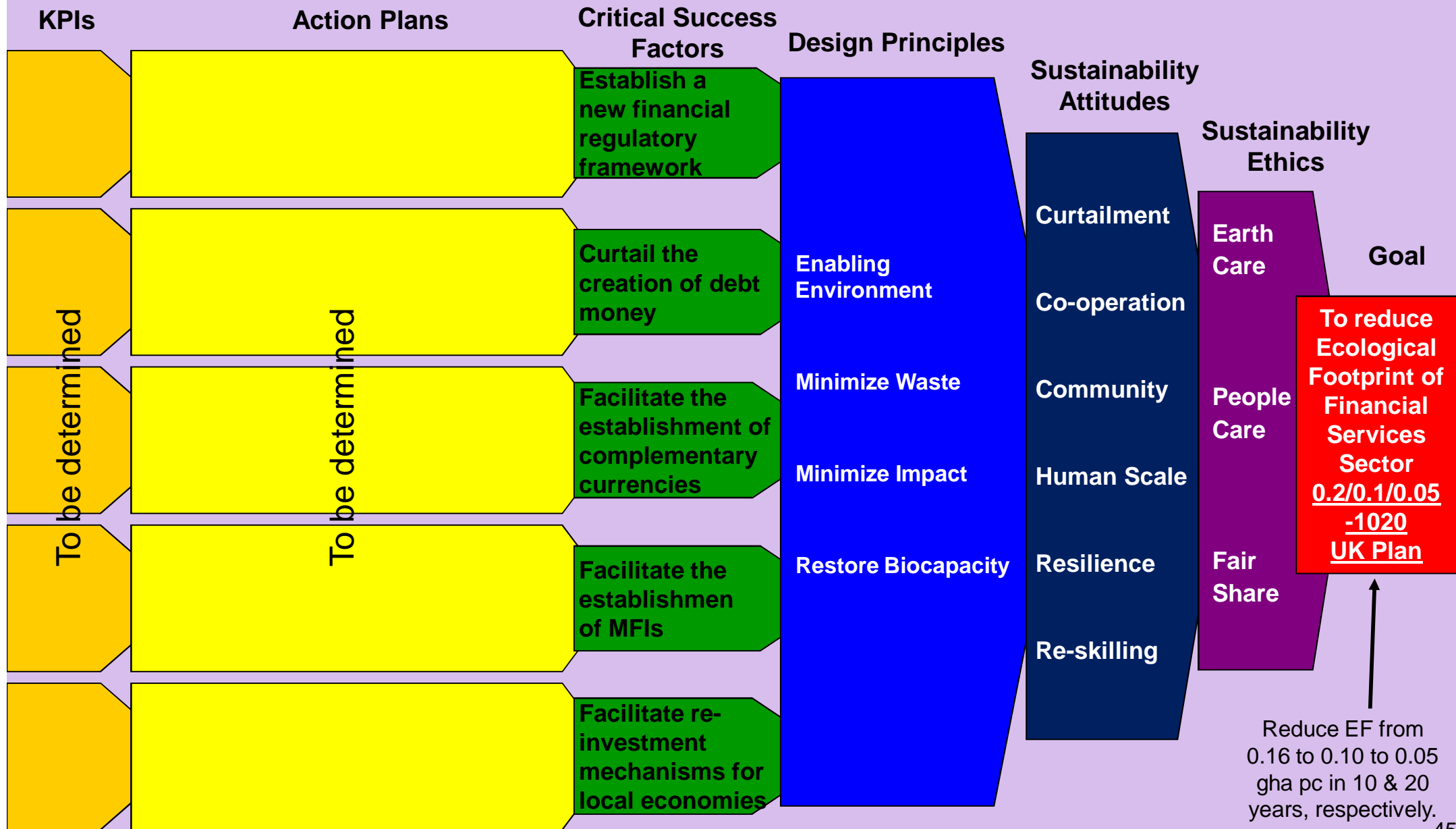


# STRATEGIC FRAMEWORK FOR TOURISM SECTOR SUSTAINABILITY





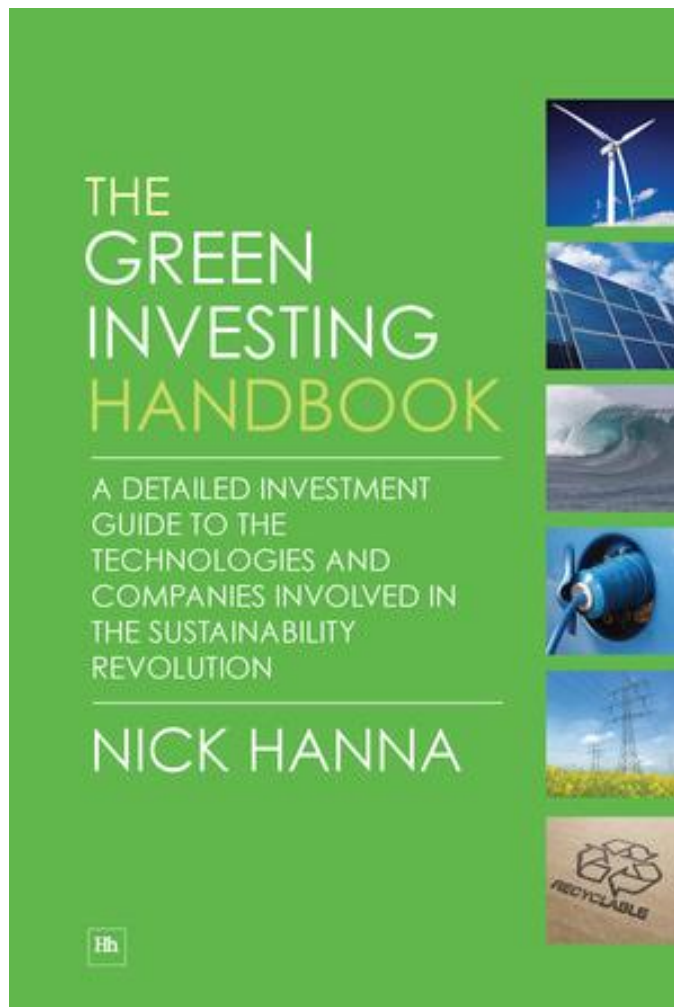
# STRATEGIC FRAMEWORK FOR FINANCIAL SERVICES SECTOR SUSTAINABILITY





**MORE GREEN.  
LESS GREED** }  
It's about more than money

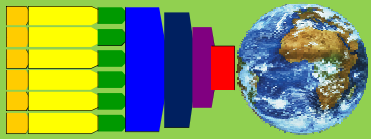
**Triodos Bank**



Fund name	1 year performance	3 year performance	5 year performance	Notes
Aberdeen Responsible UK Equity	3.7%	78%	5%	UK equity
Ecclesiastical UK Equity	7.6%	79.5%	2.2%	UK Equity
First State Sustainability	10%	111.0%	NA	Global-Asian equities
Standard Life UK Ethical	6%	89.6%	-0.5%	UK Equities
SVM All Europe SRI	4.9%	105.8%	40.1%	Europe equities

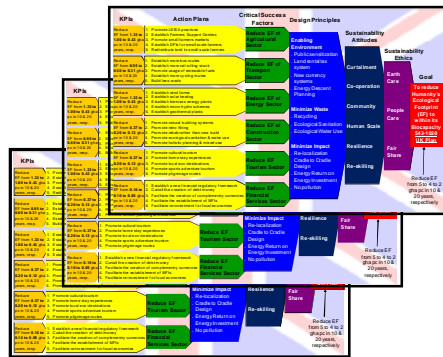




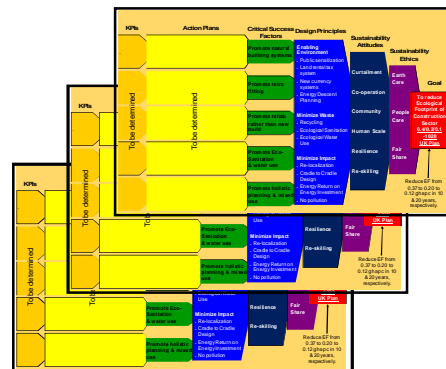
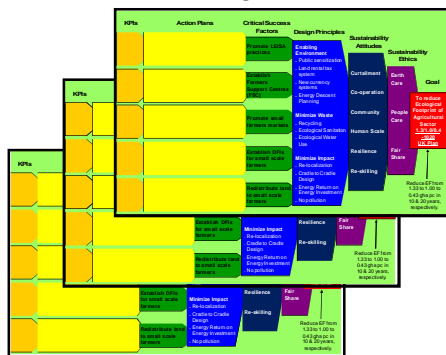


# A HIERARCHY OF STRATEGIC FRAMEWORKS FOR SUSTAINABILITY

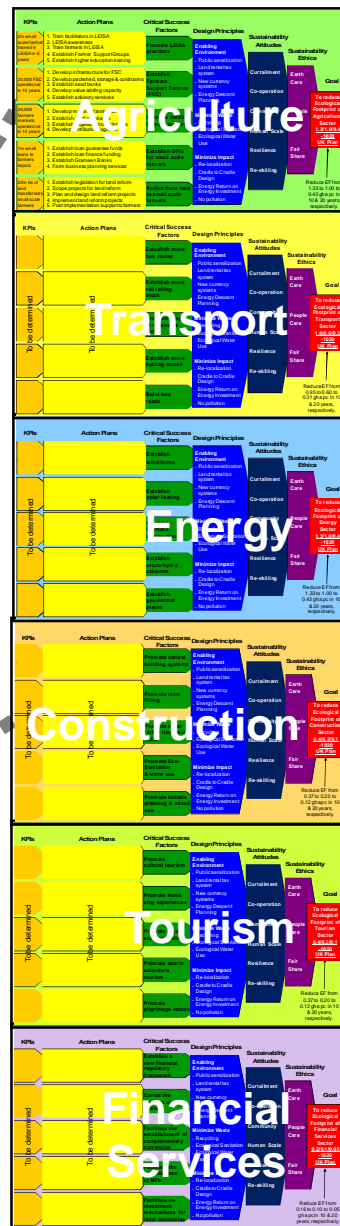
## Regional Level



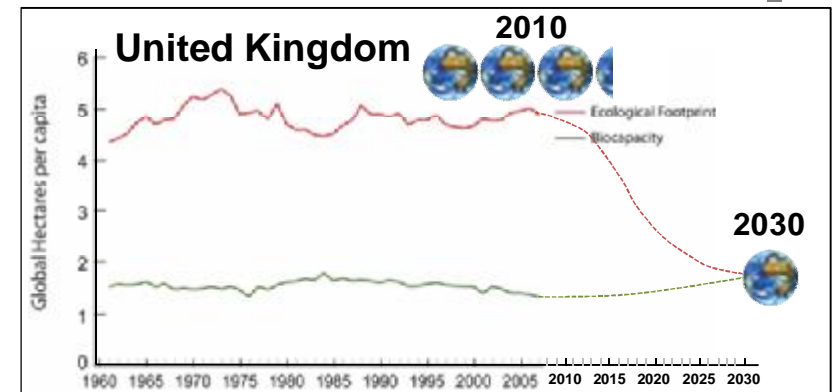
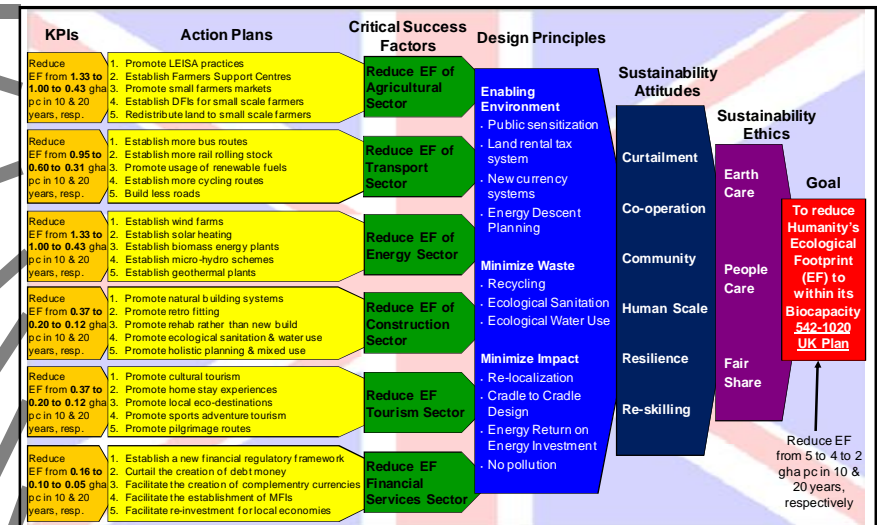
## Project Level

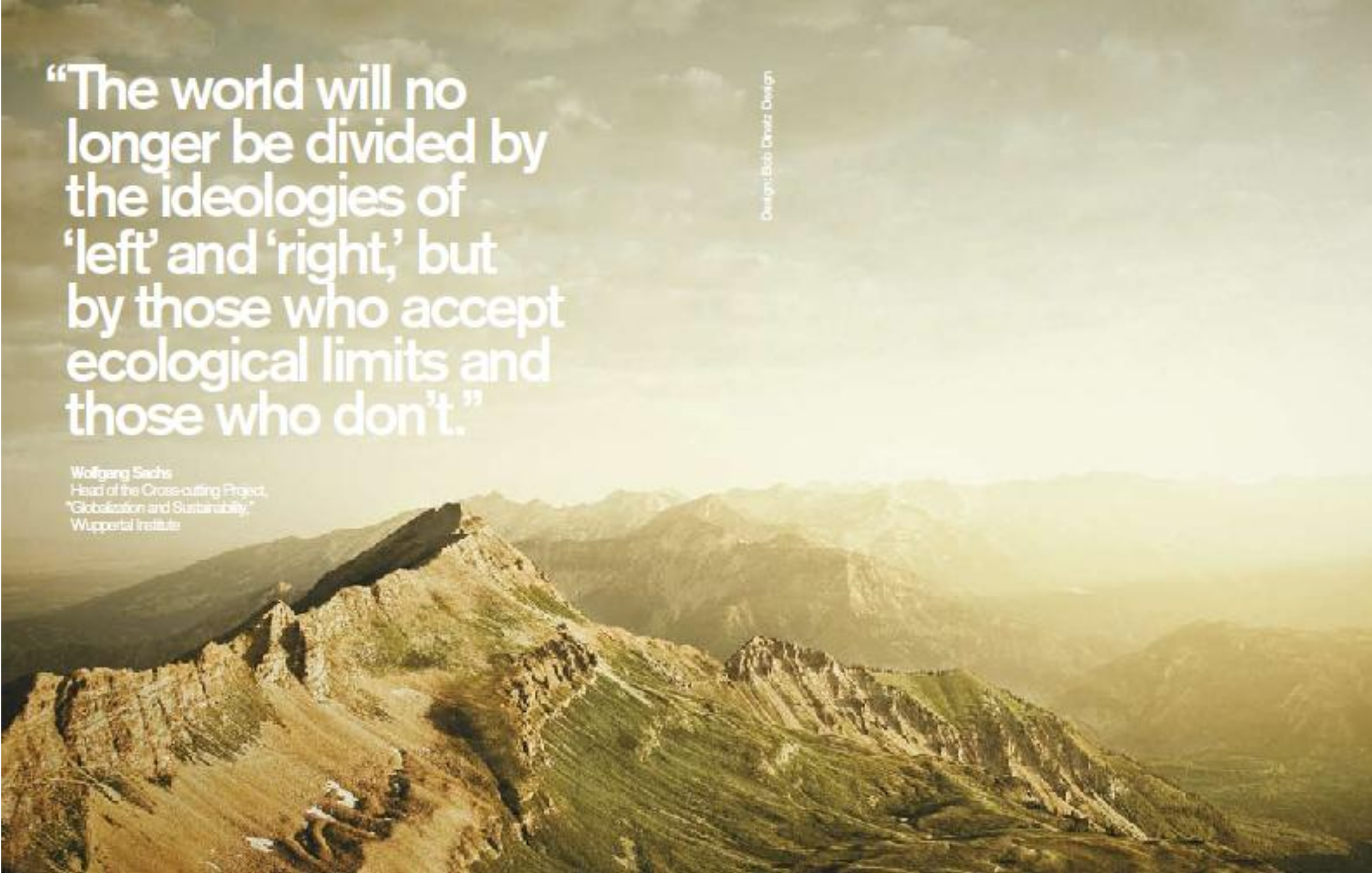


## Economic Sector



## National Level - UK

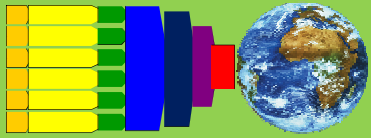




“The world will no longer be divided by the ideologies of ‘left’ and ‘right,’ but by those who accept ecological limits and those who don’t.”

Wolfgang Sachs  
Head of the Cross-cutting Project,  
“Globalization and Sustainability,”  
Wuppertal Institute

Design: Bob Dreyer Design



## FURTHER RESEARCH

This concept document uses the ecological footprint as a basic indicator for Humanity to measure its performance towards living within its biocapacity and thus sustainability. This document provides the Foundation for Sustainable Design and how this may be applied for a hierarchy of strategic plans for a country and cascaded down to economic sectors, regions, districts and projects. However, there is still much research required to implement this type of strategic planning framework, as outlined in the table below.

Topic	Research
Sustainability Ethics	Refine the Sustainability Ethics and unpack with detailed explanations.
Sustainability Attitudes	Refine the Sustainability Attitudes and unpack with detailed explanations.
Design Principles	Refine Design Principles and unpack with detailed explanations and case studies as examples of best practices.
Critical Success Factors	Review Economic Sectors and refine the ecological footprint impact per sector.
Agricultural Sector Action Plan	Review Action Plan for the Agricultural Sector and unpack with detailed explanations/
Other Action Plans	Develop Action Plans for various economic sectors with detailed explanations.
Key Performance Indicators (KPIs) per Economic Sector	Refine the ecological footprint data per economic sector and Action Plans.
Action Plan Budgets and Programmes and KPIs	Prepare basic budget estimates, timeframes and lower level KPIs in order to assess the cost and impact of various Action Plans towards reducing the ecological footprint for the associated biocapacity.