WWF • LIVING PLANET REPORT 2010 SUMMARY

WWF INT 2010

Living Planet Report 2010

SUMMARY

NATURAL RESOURCES ARE THE SOURCES OF LIFE. NATURE IS THE BASIS OF OUR WELL-BEING AND OUR PROSPERITY. BIODIVERSITY HAS DECLINED GLOBALLY BY 30% BETWEEN 1970 AND 2007; BY 60% IN THE TROPICS. DEMAND ON NATURAL RESOURCES HAS DOUBLED SINCE 1966 AND WE ARE CURRENTLY USING THE EQUIVALENT OF 1.5 PLANETS TO SUPPORT OUR ACTIVITIES. THE EARTH NEEDS 1.5 YEARS TO GENERATE THE NATURAL RESOURCES THAT WE USE IN A YEAR. "BUSINESS AS USUAL" PROJECTIONS ESTIMATE THAT

WE WILL NEED THE EQUIVALENT OF TWO PLANETS BY 2030 TO MEET OUR ANNUAL DEMANDS. HIGH-INCOME COUNTRIES HAVE A FOOTPRINT FIVE TIMES THAT OF LOW-INCOME COUNTRIES, SUGGESTING THAT CONSUMPTION IN WEALTHIER NATIONS DEPENDS ON DEPLETING POORER YET 'RESOURCE RICH' TROPICAL COUNTRIES. THE WORLD'S CARBON FOOTPRINT HAS INCREASED BY OVER A THIRD SINCE 1998. WE CAN REDUCE OUR FOOTPRINT BY PRODUCING MORE WITH LESS AND CONSUMING BETTER, WISER AND LESS.

Bwizibera tree plantation project in Uganda

FOCUSING ON THE FUTURE

The Living Planet Report 2010 clearly demonstrates that the unprecedented drive for wealth and well-being of the past 40 years is putting unsustainable pressures on our planet. The Ecological Footprint shows a doubling of our demands on the natural world since the 1960s, while the Living Planet Index tracks a fall of 30 per cent in the health of species that are the foundation of the ecosystem services on which we all depend.

Rapid economic growth has fuelled an ever-growing demand for resources – for food and drink, energy, transport, electronic products, living space, and space to dispose of wastes, particularly carbon dioxide from burning fossil fuels. As these resources can no longer be sourced from within national boundaries, they are increasingly being sought from other parts of the world. The effects are clearly visible in the Living Planet Indices for the tropical world and for the world's poorer countries - both of which have fallen by 60 per cent since 1970.

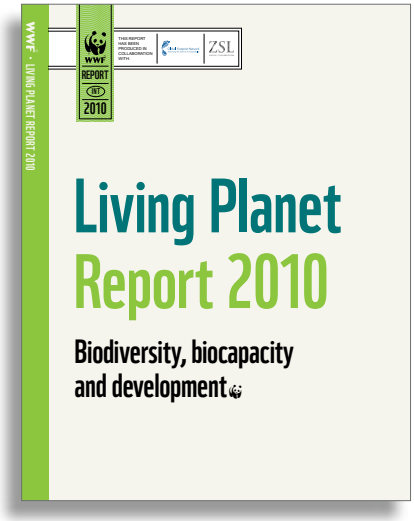
The implications are clear. Rich nations must find ways to live much more lightly on the Earth – to sharply reduce their footprint, including in particular their reliance on fossil fuels. The rapidly-growing emerging economies must also find a new model for growth – one that allows them to continue to improve the well-being of their citizens in ways that the Earth can actually sustain.

There are many challenges ahead – not least meeting the needs of an increasing world population. These challenges further emphasize the importance of decoupling development from growing demands on the natural resources. Put plainly, we have to devise ways of getting as much, and more, from much less. Continuing to consume the Earth's resources more quickly than they can be replenished is destroying the very systems on which we depend. We have to move to managing resources on nature's terms and on nature's scale.

James P. Leape
Director-General
WWF International

THE EARTH'S HEALTH IS UNDER PRESSURE

Our demand on the Earth – as represented by our Ecological Footprint – is growing, even as the Earth's capacity for sustainable production, and its ability to absorb CO_2 emissions – its biocapacity, is coming under increasing pressure. At our current rate of consumption, the Earth needs 1.5 years to produce and replenish the natural resources that we consume in a single year. The Living Planet Report 2010 reports an alarming rate of biodiversity loss, with the Living Planet Index showing that, world-wide, biodiversity decreased by nearly 30 per cent between 1970 and 2007.



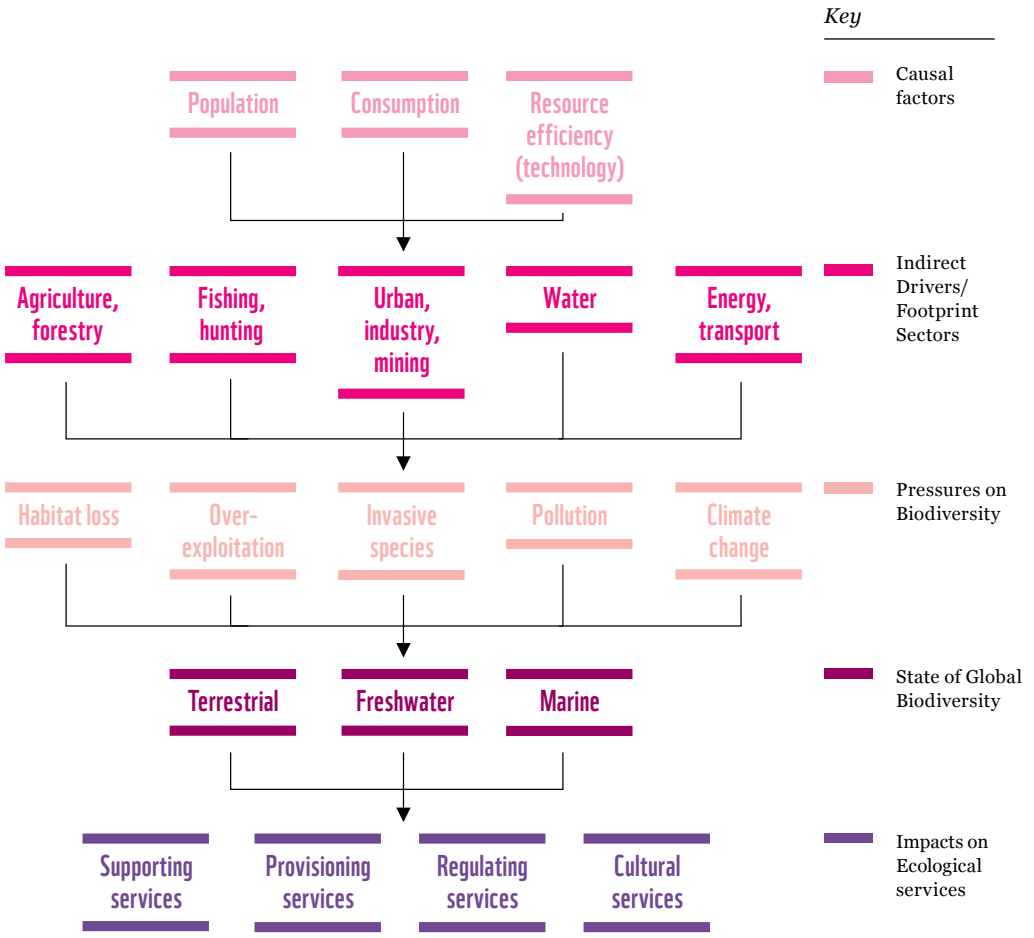
The Living Planet Report 2010 can be downloaded from: www.panda.org/lpr

Living Planet Report 2010

This booklet provides a summary of the 2010 edition of WWF's Living Planet Report (LPR) - a biennial publication that measures the Earth's health. Using an expanded set of complementary indicators, the report documents the changing state of biodiversity, ecosystems and humanity's consumption of natural resources, and explores the implications of these changes for future human health, wealth and well-being. Its findings are based on two critical indicators:

- ***The Living Planet Index** - which measures changes in the health of the planet's ecosystems by tracking post-1970 trends of nearly 8,000 populations of 2,500 vertebrate species.*
- ***The Ecological Footprint** - which is an accounting framework that tracks humanity's competing demands on the biosphere by comparing human demand against the regenerative capacity of the planet. The human demand is translated into global hectares (gha) - hectares that represent average global production and CO_2 fixation.*

Linking the total Ecological Footprint to biocapacity - the Earth's regenerative capacity - clearly indicates the extent to which we are exceeding our planet's natural limits.

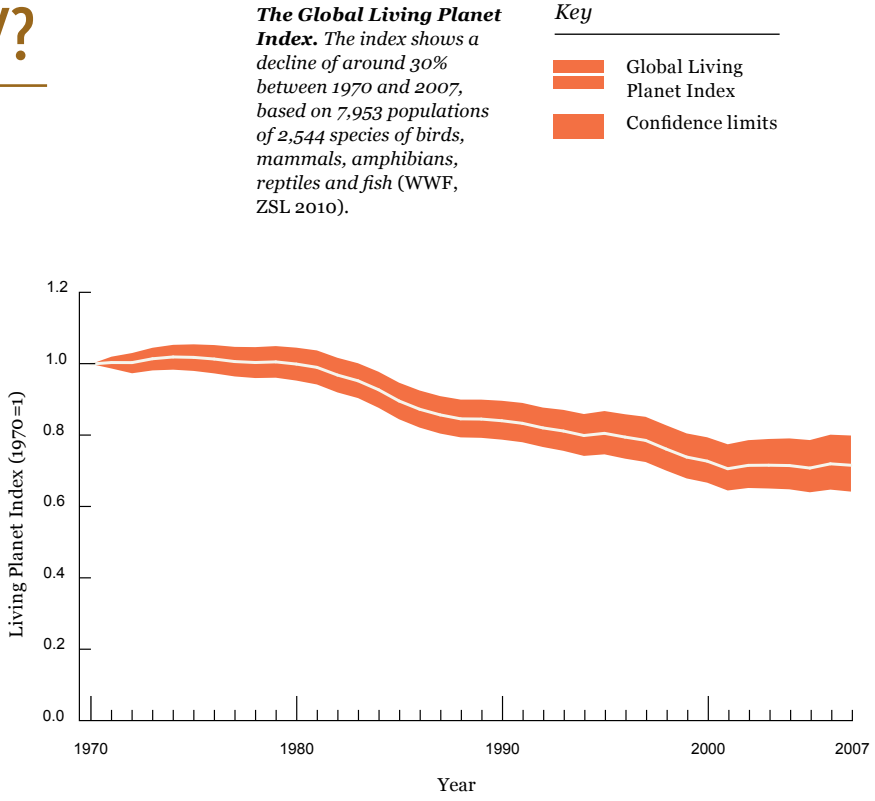


Interconnections between people, biodiversity, ecosystem health and provision of ecosystem services.

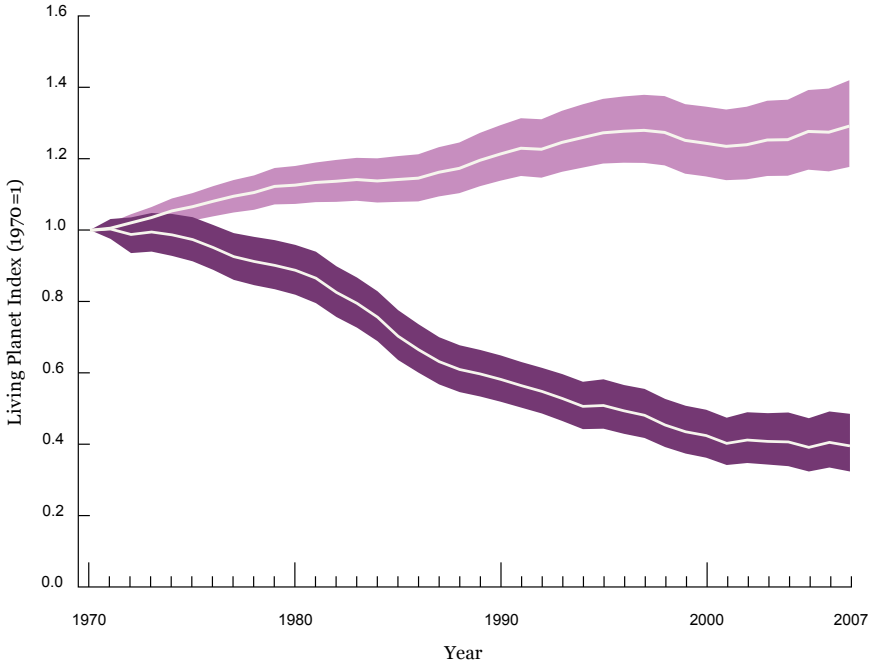
WHAT DOES NATURE'S STOCK MARKET INDEX SAY?

The Living Planet Index (LPI) is one of the longest series of measurements made of biodiversity on Earth. It monitors changes in 7,953 populations of 2,544 species. With comparisons to how the stock market index tracks the status of shares, the LPI first calculates the annual rate of change for each species population in the dataset. The index then calculates the average change across all populations for each year from 1970 to 2007. Alarmingly to the Earth's share-holders, all of us, the LPI shows a decline of about 30 per cent between 1970 and 2007.

The Global Living Planet Index. *The index shows a decline of around 30% between 1970 and 2007, based on 7,953 populations of 2,544 species of birds, mammals, amphibians, reptiles and fish* (WWF, ZSL 2010).



GLOBAL HALT TO DEFORESTATION



The Temperate LPI & the Tropical LPI. *The temperate index shows an increase of 29% between 1970 and 2007. The tropical zone index shows a decline of more than 60% between 1970 and 2007* (WWF/ZSL 2010).

Tropical and temperate species' populations show starkly different trends: the tropical LPI has declined by around 60 per cent, while the temperate LPI has increased by 29 per cent. The reason for this disparity in scores is that the species variety in temperate zones was already many times lower when measurements started in 1970. Recently, too – especially in the last decade – in temperate zones suitable actions have been taken to prevent pollution and provide better protection for nature. The decline of species in the tropics is a consequence of changes in land use, which transform the original natural landscapes into agricultural land and pasture.

Orang-utan with young in Gunung National Park, Sumatra, Indonesia.

Squeezed out for margarine?

Forests supply building materials, timber for paper, fuel, food and medicinal plants. They also supply shade for agricultural crops like coffee and cocoa. Forests store carbon, purify water, regulate the climate and mitigate the effects of flooding, landslides and other natural disasters.

The growing demand for palm oil, which is a valuable, versatile ingredient of many supermarket products, such as margarine, comes at a high price for some forests. Many oil palm plantations in Malaysia and Indonesia have replaced tropical forests of high conservation value. Oil palm cultivation area has increased nearly eightfold over the last 20 years. The associated loss of forest habitat has put the survival of several species in danger – notably orang-utans. Worldwide demand for palm oil is expected to double by 2020. WWF supports the Roundtable on Sustainable Palm Oil, which promotes standards for environmentally appropriate, socially beneficial and economically viable practices in the palm oil industry.

Other major drivers of forest loss are - cattle grazing (around 80% of deforested Amazonian land is used for cattle), soy-fields (mostly in the Latin American Cerrado), and pulp plantations in Indonesia.

IT PAYS TO INVEST IN NATURE

Ecosystem services, such as pollination by bees, carbon storage, and the supply of timber, medicine and food that people derive from nature, are crucial to our well-being and form the foundation of our prosperity. If we are to preserve these services it is essential that we halt further loss of nature, certainly if we take account of the possible consequences of climate change now and for future generations. One relatively easy way of achieving this objective is to provide adequate biodiversity protection through designated nature reserves. WWF and many other organizations are campaigning for the strict protection of at least 15% of our natural habitats, in the form of a global network of nature reserves, varying from freshwater ecosystems, forests and oceans to coastal zones. Another mechanism being promoted is payment for ecosystem services, such as water and carbon storage in forests.

Bees: Useful allies

Forest pollinators increase coffee yields by 20% and improve coffee quality by 27% on Costa Rican coffee farms located within one kilometre of forest.

PAYING FOR NATURE AND ECOSYSTEM SERVICES

Sustainable coffee production in Aranjuez River Basin, Costa Rica.

OUR LIFESTYLE IS TOO EXTRAVAGANT

Nature is a wonderful system. The Earth provides for all of our needs, such as food, water, energy and other necessities. Yet the Ecological Footprint indicates that we are not careful in our use of these valuable resources. The Ecological Footprint gives us an insight into the area of productive land that we need every year to enable the regeneration of the natural resources needed for our consumption, our infrastructure and to absorb our CO2 emissions.

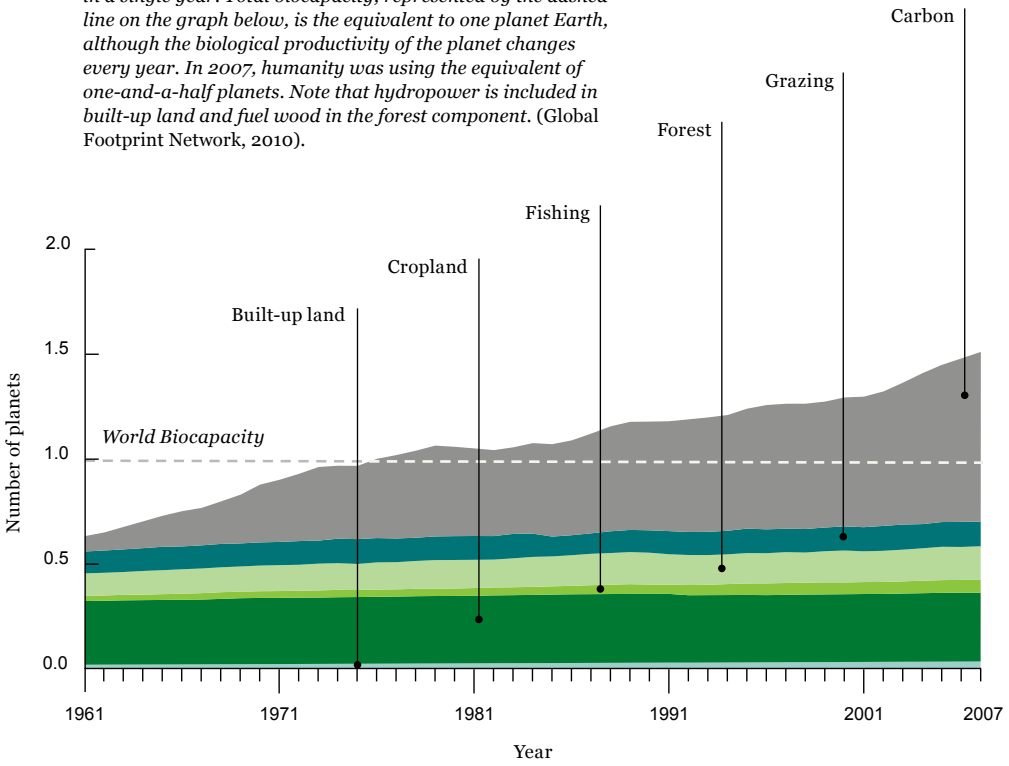
The latest figures available, from 2007, indicate that humanity's global Ecological Footprint has more than doubled over the past four decades. This major increase can be ascribed mainly to the Carbon Footprint - increased CO2 emissions from rising energy consumption. During the 1970s, the Earth's human population began consuming renewable resources at a faster rate than could be regenerated, and releasing more CO2 than ecosystems could absorb. This situation is called 'ecological overshoot'. As a consequence, we are putting increasing pressure on the natural regenerative capacity of the Earth. In 2007, humanity's footprint was measured at 2.7 gha per person, while the Earth's biocapacity was only 1.8 gha per person. This represents an ecological overshoot of 50 per cent.

IF WE COMPARE THE EARTH WITH AN ANNUAL SALARY, THEN WE'VE USED UP OUR ENTIRE YEAR'S WAGES IN SEPTEMBER

© ANDREW KERR / WWF CANON

Coal-fired power station in North Rhine-Westphalia, Germany.

Components of the Ecological Footprint 1961–2007. *One way of showing the Ecological Footprint is as the number of planets required to produce natural resources consumed in a single year. Total biocapacity, represented by the dashed line on the graph below, is the equivalent to one planet Earth, although the biological productivity of the planet changes every year. In 2007, humanity was using the equivalent of one-and-a-half planets. Note that hydropower is included in built-up land and fuel wood in the forest component.* (Global Footprint Network, 2010).



CARBON UPTAKE FOOTPRINT is calculated as:

the amount of forest land required to absorb CO_2 emissions from burning fossil fuels, land-use change and chemical processes, other than the portion absorbed by oceans.

GRAZING LAND FOOTPRINT is calculated from:

the area of grazing land used to raise livestock for meat, dairy, hide and wool products.

FOREST FOOTPRINT is calculated from:

the amount of lumber, pulp, timber products and fuel wood consumed by a country each year.

FISHING GROUNDS FOOTPRINT is calculated from:

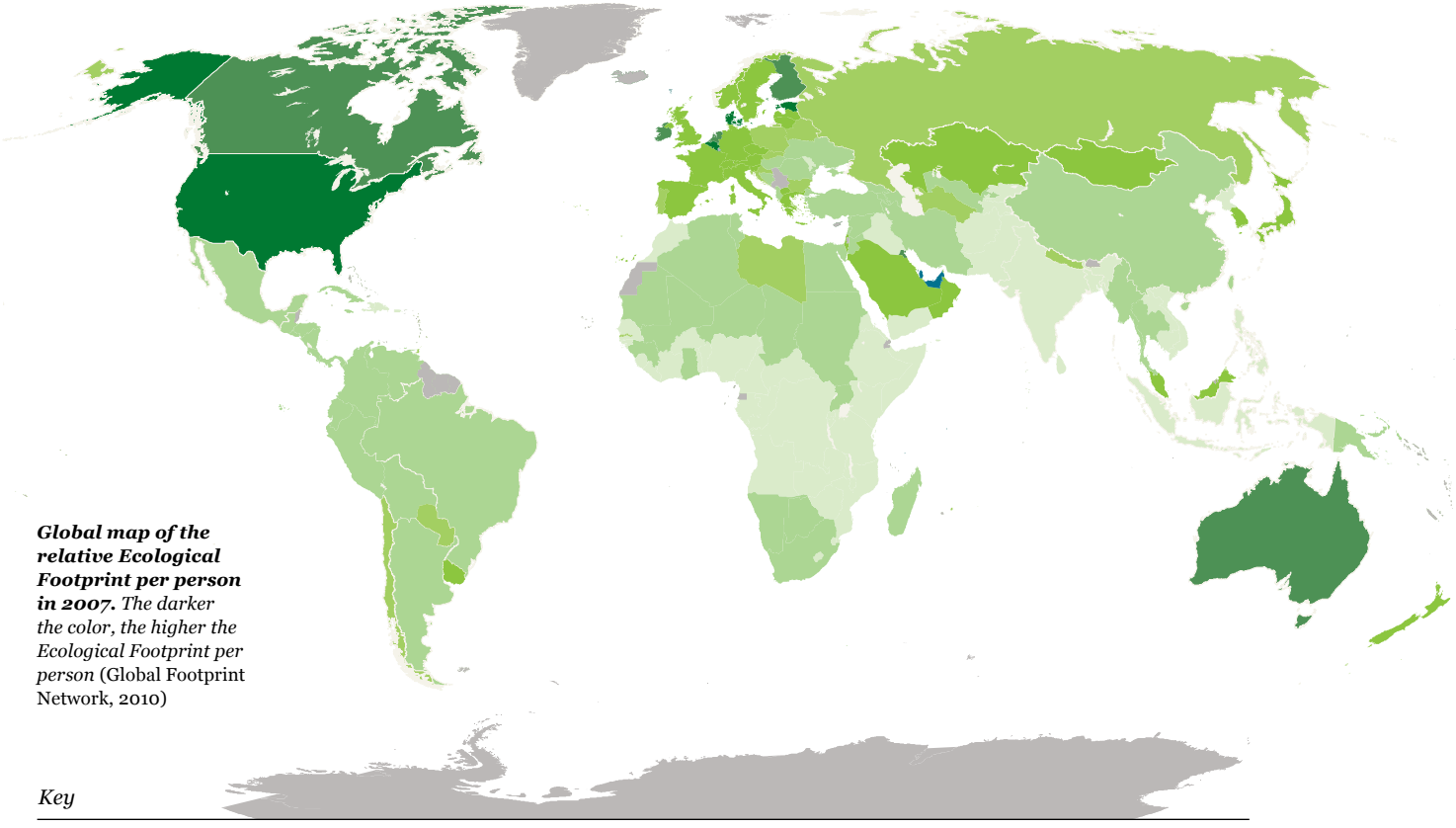
the estimated primary production required to support the fish and seafood caught, based on catch data for 1,439 different marine species and more than 268 fresh water species.

CROPLAND FOOTPRINT is calculated from:

the area used to produce food and fibre for human consumption, feed for livestock, oil crops and rubber.

BUILT-UP-LAND FOOTPRINT is calculated from:

the area of land covered by human infrastructure, including transportation, housing, industrial structures, and reservoirs for hydropower.

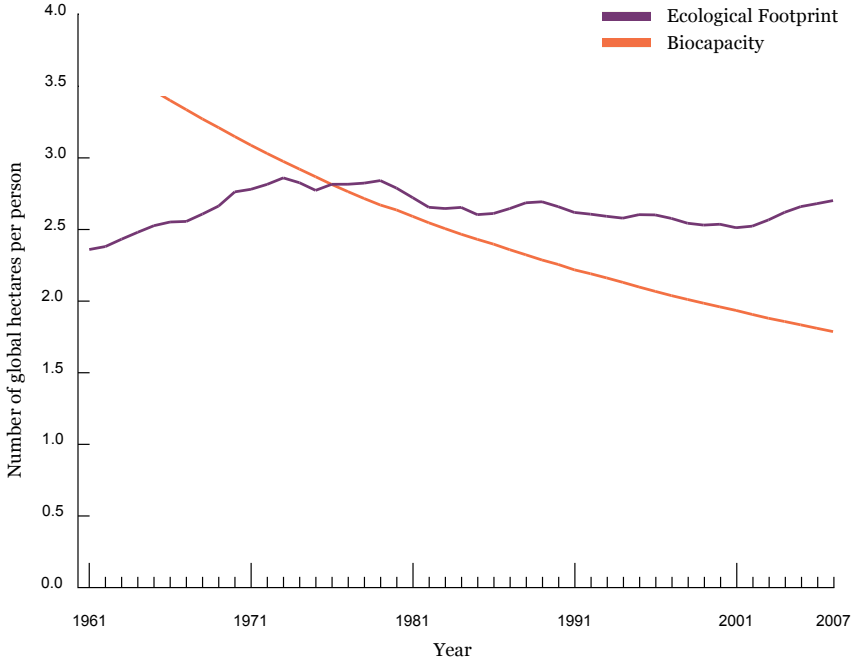


Global map of the relative Ecological Footprint per person in 2007. *The darker the color, the higher the Ecological Footprint per person* (Global Footprint Network, 2010)

LESS WITH MORE PEOPLE

Whilst the people of the world continue to consume more, fewer resources are becoming available per person. Over the last four decades, biocapacity per person has declined by almost one-half - mainly due to the steep increase in the world's population. In 1967, on average nearly 3.5 gha was available per person worldwide. Now, the figure is only 1.8 gha - while the total area available for the most important crops has remained virtually unchanged, and productivity per hectare has more than doubled. As the world's population continues to increase, future available biocapacity will, to a great degree, depend on our ability to sustainably increase the land's productivity, and to adjust consumption accordingly.

Changes in the Ecological Footprint and the biocapacity available per person worldwide between 1961 and 2007. *The total biocapacity available per person has declined with increasing population* (Global Footprint Network, 2010)



PRODUCTIVE LAND UNEVENLY DISTRIBUTED

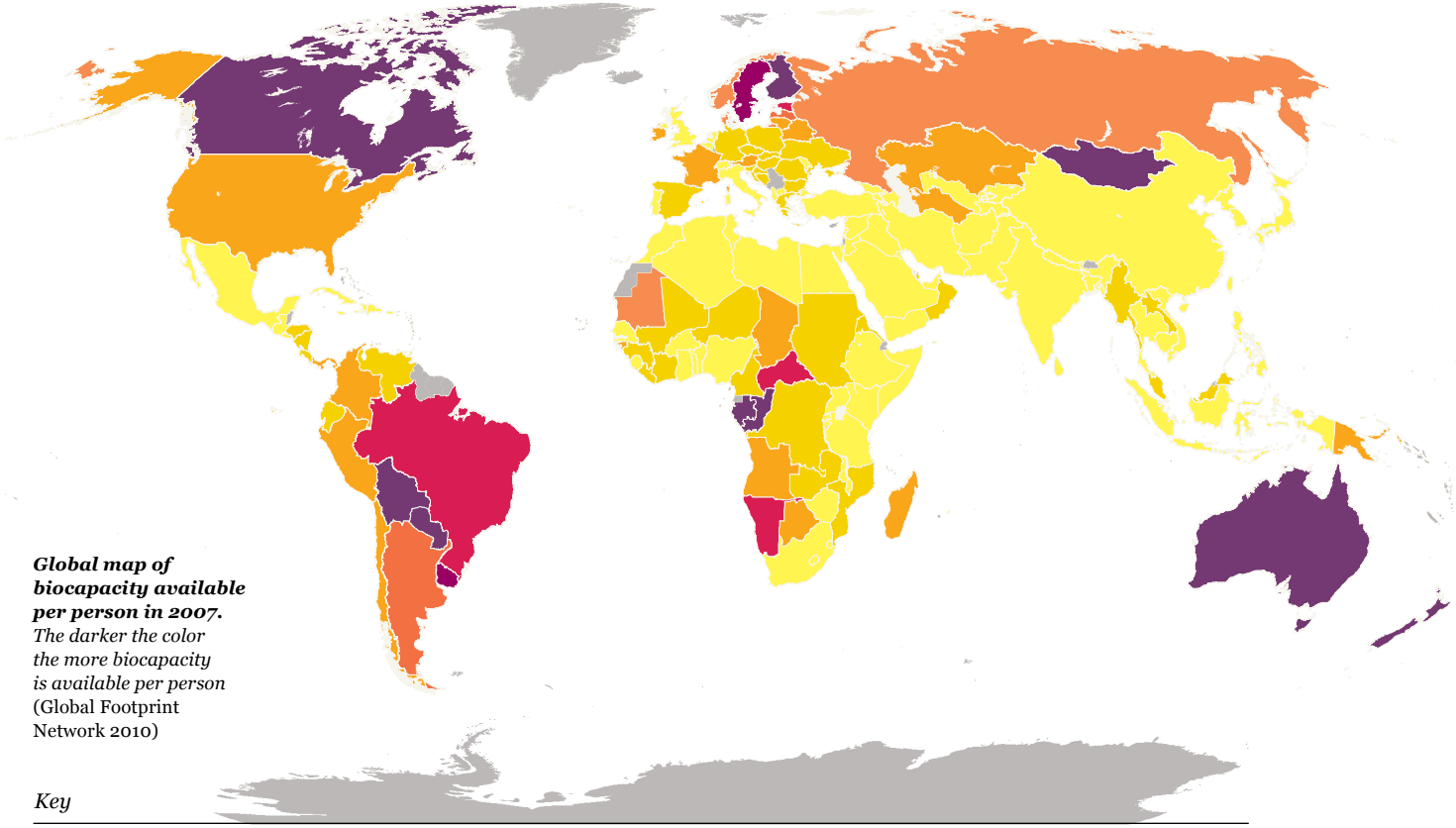
Biocapacity is not evenly distributed throughout the world. Ten countries, including Brazil, China and the United States, account for over 60 per cent of all of the productive land on Earth. Other countries, such as India and many in Europe and Africa, have only limited biocapacity, meaning that they depend, or will depend, for a significant part of their consumption on natural resources sourced from elsewhere around the world.

The Netherlands is a good example. There is not enough land available within the country's borders to meet its consumption demands, so many raw materials – such as fish, soy, palm oil, timber and paper - are imported from elsewhere.

The Netherlands is among the 15 highest consuming countries, with an average footprint of 6.2 gha per person. Only 1 gha is available per person in The Netherlands, compared to the 1.8 gha that is available for each citizen on our finite planet.

FAIR ACCESS TO FOOD, DRINKING WATER AND ENERGY

Palm oil nut, Sabah, Borneo, Malaysia



Global map of biocapacity available per person in 2007. *The darker the color the more biocapacity is available per person* (Global Footprint Network 2010)

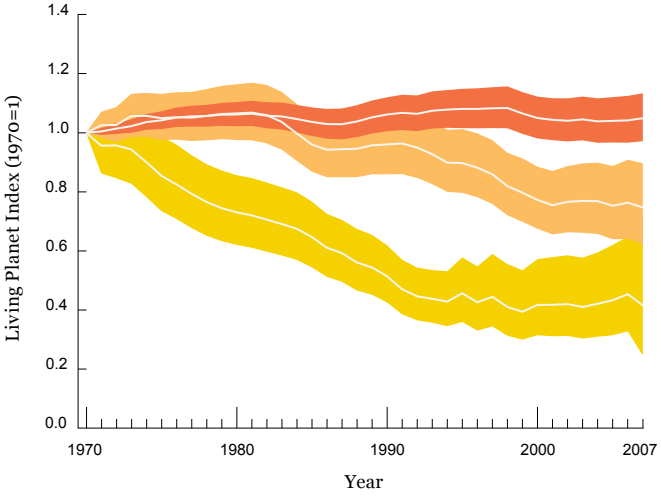
POOR COUNTRIES SUBSIDISE WESTERN PROSPERITY

Not everybody has the same standard of living. The Ecological Footprint shows that humanity's use of natural resources is unevenly distributed. It is the high-income countries in particular that make disproportionate demands on the available productive land - because of their disproportionately large consumption of imported goods. As a consequence, changes in land use (for example, from converting forest to agricultural land) causes significant losses in biodiversity, especially in the tropical zones. Whilst everyone depends on ecosystem services and natural assets, and hence biodiversity, the impact of environmental degradation is felt most directly by many of the world's poorest and most vulnerable people – especially those living in the tropics.

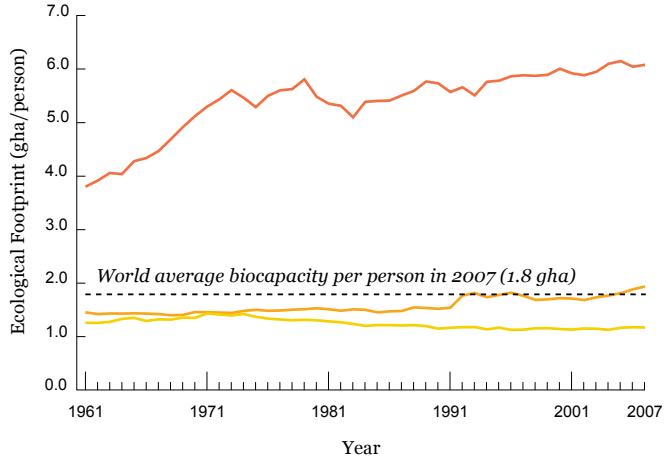
The Living Planet Index by country income group. *The index shows a 5% increase in the LPI of high-income countries, a 25% decline in middle-income countries, and, alarmingly, a 58% decline in low-income countries between 1970 and 2007* (WWF/ZSL, 2010)

Key

- High income
- Middle income
- Low income



Changes in the Ecological Footprint per person in high-, middle- and low-income countries between 1961 and 2007. *The dashed line represents world average biocapacity in 2007* (Global Footprint Network, 2010)

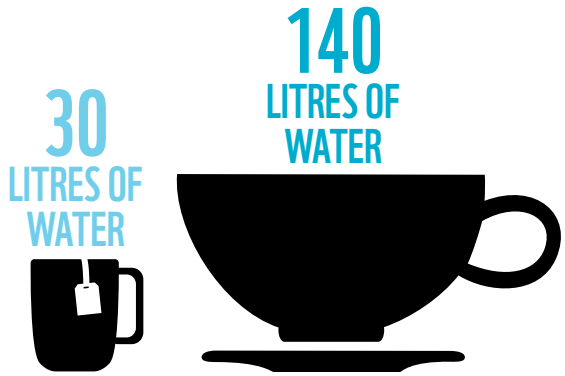


WATER, A PRECIOUS RESOURCE

Water is both the source of life and a scarce, precious resource. It is vital to maintaining biodiversity, growing food, manufacturing goods, and producing energy. Water covers some 70 per cent of the Earth's surface, yet only 3 per cent of this is freshwater. With less than 1 per cent of the water on Earth currently accessible for direct human use, experts stress that there is only enough water available to meet both human and environmental needs if water is well managed.

Freshwater is poorly distributed over the globe, and within river systems there are limits to how much water can be used. Those systems where sustainable limits have been exceeded are referred to as "closed," and globally the number of closed river basins is increasing. Climate change and an increase in the world's population will place further constraints on the quantity and availability of fresh water. The pattern of consumption of certain water-intensive products – such as coffee, sugar, cocoa and cotton – in wealthier countries can have serious consequences for vulnerable ecosystems in poorer countries.

But a large water footprint is not necessarily a bad thing – using water is essential. What matters most is where the water comes from and the degree to which its use has an adverse impact on nature, the hydrological cycle and the local population. The challenge is to secure enough water of good quality in a way that doesn't destroy the very ecosystems from which we take our water supplies – rivers, lakes and aquifers.



A 140 litre cup of coffee

A product's water footprint is calculated by looking at the amount of water consumed in the entire production process. For a cup of coffee we look at how much water the coffee plant uses, as well as the water consumed during harvesting, processing, transporting, packaging, storage processes, and brewing the final cup. The average cup of coffee has a water footprint of 140 litres. For a cup of tea it equates to 30 litres. These amounts vary depending on where crops are grown, but the numbers reveal a dependency on water resources that most people, companies and governments rarely consider – but increasingly must.

CHOOSE WELL-BEING

Does increased consumption equate to increased development? Do our governments use the best measures and indicators to determine their population's well-being? The Gross Domestic Product (GDP) has long been used as a general indicator for progress. However, although income is an important facet of development, it is not necessarily a good indicator of quality of life, and the price we and others pay for our prosperity.

The Human Development Index (HDI), developed by the United Nations, combines income, life expectancy and educational attainment. It is the most frequently used indicator when comparing economic and social development between countries. When linked with the Ecological Footprint, for example, it indicates that a high level of economic and social development can be achieved, whilst retaining a relatively small footprint.

The UN defines the threshold for a high level of development as an HDI value of 0.8. Countries meeting or exceeding this threshold show an enormous range in per person Ecological Footprint - from Peru, with a footprint of 1.5gha, to Luxembourg

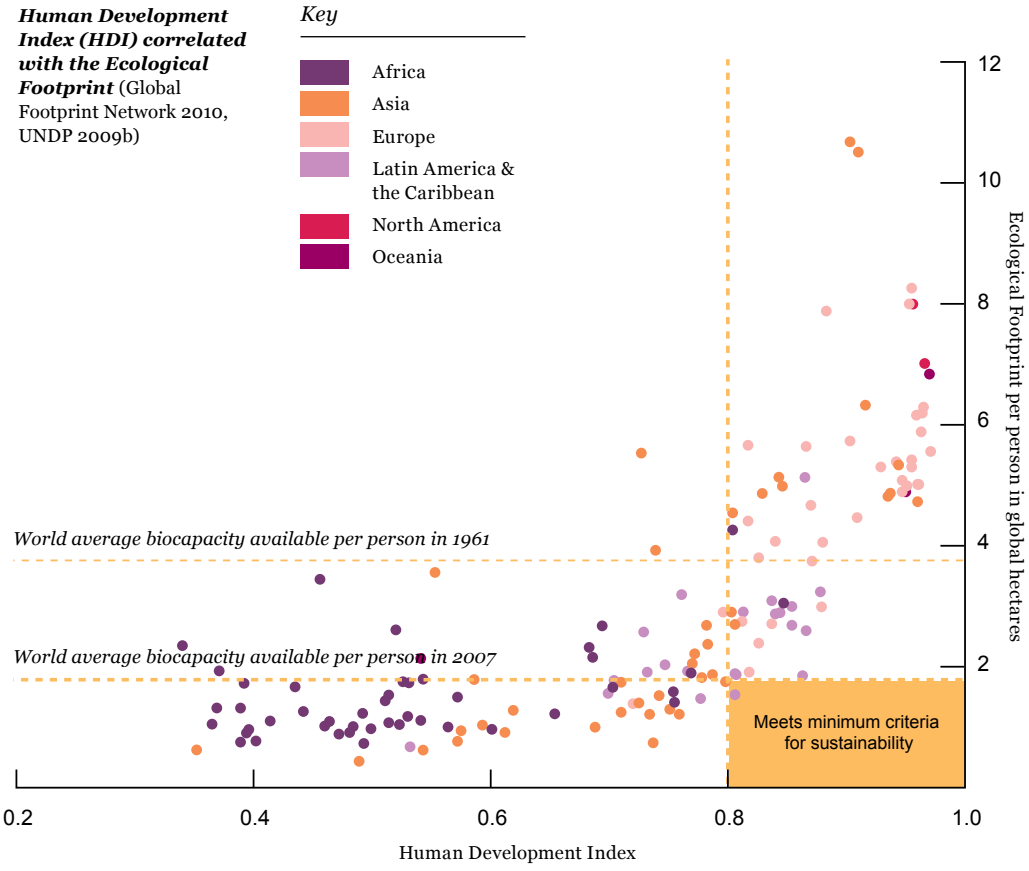
Three Khmer boys on the bank of the Tonle Sap River in Cambodia.

with a footprint of over 9 gha per person.
Bringing the use of natural resources within ecological limits is part of the jigsaw puzzle of development pathways that allow us to live in harmony with nature.

There is growing recognition that, in addition to income, well-being includes social and personal elements – that together allow people to lead lives they value. Combining GDP with other indicators, such as the Human Development Index, the Living Planet Index and the Ecological Footprint, can help us find a better balance.

DON'T USE GDP ALONE TO MEASURE PROSPERITY

Human Development Index (HDI) correlated with the Ecological Footprint (Global Footprint Network 2010, UNDP 2009b)



WHO GETS TO EAT THE LAST BLUEFIN TUNA?

The Food and Agriculture Organization (FAO), has calculated that food production will have to increase by 70 per cent to feed the world's future population. One can question whether this is a realistic option. Even a dramatic increase in productivity on existing farmland would be insufficient to satisfy growing demand. As a result, more land will be needed to increase production, and the use of this land will compete with other demands - such as the growing demand for other products, such as biomass for biofuels to make us less dependent on fossil fuels. The FAO's calculations take no account of increased demand for biomass.

We pay dearly for our fish

Destructive fishing techniques and the great demand for fish have led to massive overfishing. The survival of 70 per cent of commercial fish stocks is under threat, including that of the Mediterranean bluefin tuna. Because predator fish species like cod and tuna are becoming more difficult to find, fishermen are often satisfied with the smaller species in the food chain, such as shrimp and squid. This disturbs the balance of the entire marine ecosystem. If we do not take action now then soon there will be nothing left on our menu but jellyfish or sea cucumber.

STOP OVERFISHING AND DESTRUCTIVE FISHING TECHNIQUES

Bluefin tuna in the Mediterranean

Food is set to become a major theme in the years to come; not just the problem of how to tackle malnutrition and overconsumption, but also how to secure fair access to food and readjust our choice of food. This will form part of the negotiations on the way countries will have to develop and how we utilize productive land.

WWF sees opportunities in sustainably expanding the area of productive land or increasing yields per hectare – by improved management and the restoration of degraded land, for example. But there are threats, too; certainly with regard the increasing demand for biofuels. An important issue is how to deal with the uneven distribution of the world's biocapacity

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Threshed rice, Philippines

and associated geopolitical consequences. Geopolitical tension, which can sometimes be manifest in relation to access to drinking water and the trade in fossil fuels, may well undermine sustainable solutions.

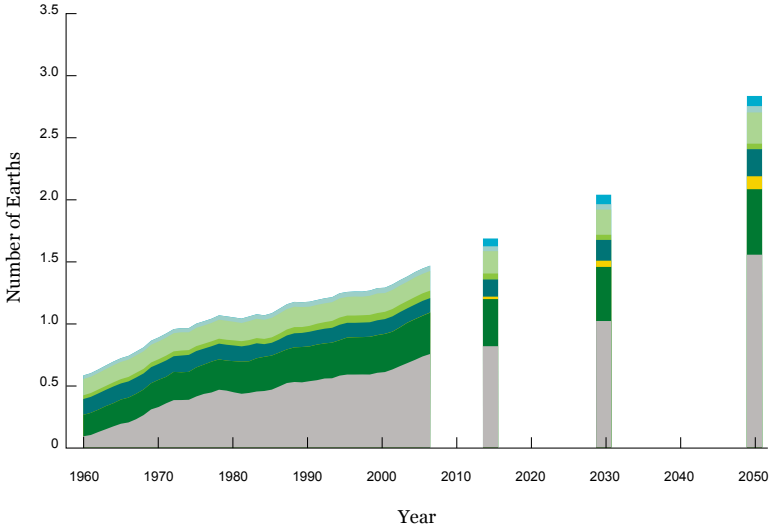
CONSUMING WITHIN THE LIMITS OF ONE EARTH

To a great degree, our energy use and food consumption determine the size of our footprint. In order to demonstrate how the world could bring its consumption of energy and food down to sustainable levels, the Living Planet Report 2010 provided three scenarios.

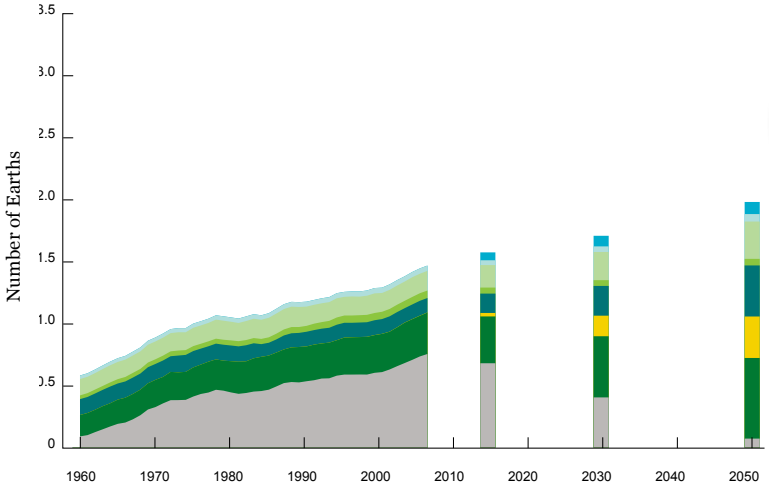
The first – the "Business-As-Usual" scenario – which is based on the UN's most moderate estimate of growth in the world's population, consumption and climate change – shows that if policies remain unchanged, then by 2050 we will need 2.8 planets to provide for our consumption and to store the carbon we generate from the combustion of fossil fuels, land use change and chemical processes.

WWF has recently completed a report which shows that it is possible to generate almost 100 per cent of the world's energy needs from renewable resources by 2050. Switching to green energy quickly will radically reduce the CO_2 component of our footprint.

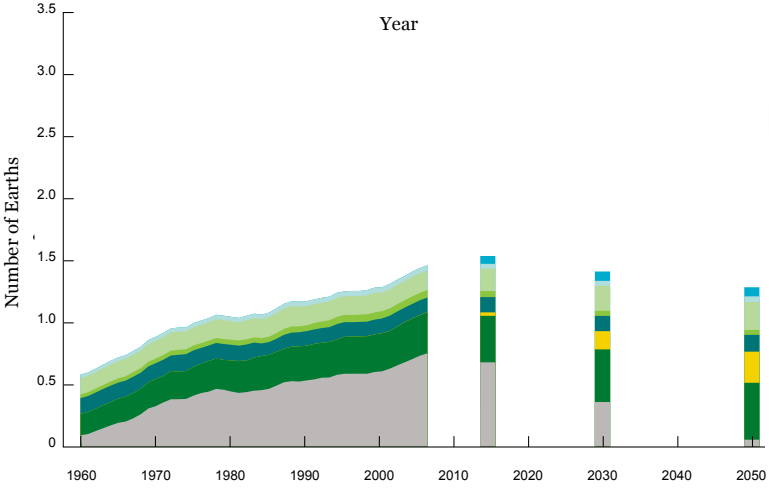
The type of food we choose also has a major influence on the size of our Ecological Footprint. The differences between the diets of the average



Projection according to the 'Business as usual' scenario (Global Footprint Network 2010)



Projection of the Ecological Footprint in a 'renewable energy' scenario combined with a global average Italian diet (Global Footprint Network 2010)



Projection of the Ecological Footprint in a 'renewable energy' scenario combined with a global average Malaysian diet (Global Footprint Network 2010)

citizens of Italy and Malaysia for example, if multiplied across the world, are dramatic. The crucial difference is not only in the total calories available but in the quantity of meat and dairy products consumed.

The effects of applying the average diets of Italians and Malaysians across the world are presented in the second and third scenarios. An average Italian consumes 21 per cent meat and dairy, compared to an average Malaysian, who consumes just 12 per cent. If we apply these figures to the world population of 9.2 billion in 2050, it becomes clear that the Italian consumption pattern will require nearly two planets to fulfill the demand, whilst the Malaysian diet would require 1.3 Earths.

SOLUTIONS FOR OUR PLANET

Fortunately there are a number of things that everyone can do to change the direction in which our planet is going. These include:

Better measure our well-being
How we measure prosperity and success needs to change - to reflect the "real world" that is out there.

Invest in nature
We need to put realistic prices on the things we've taken for granted for so long. As the old phrase rings true: "Nothing in life is truly free."

Manage our food and energy demands
If we can better manage our demands for the types of food and energy we consume, then the demands on our planet will reduce drastically (even without us all making drastic sacrifices).

Manage our land and sea resources
How we manage our productive land, how we assign rights to it, how we manage the resources that make it productive (such as water) are key factors in finding solutions to our growing demands.

Share
We must look closely at the equitable distribution of energy, water and food across nations and peoples.

Improve governance
To make all this happen someone has to take the lead. It is about good governance. And this is not just down to our politicians, but business as well.

What can I do?
Visit the WWF website and download the full Living Planet Report 2010 at:
www.panda.org/lpr
There you'll find lots of information to help you be better informed about the LPR, your footprint, and what you can do to reduce your footprint.

Aerial photo of the coast and islands of Camarines Sur, Bicol, Philippines

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Red mangrove in Carrie Bow Cay, Belize
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BIODIVERSITY

New species continue to be found, but tropical species' populations have fallen by 60% since 1970

BIOCAPACITY

Per capita productive land now half the level of 1961

DEVELOPMENT

There are 1.8 billion people using the internet, but 1 billion people still lack access to an adequate supply of freshwater

AWARENESS

34 per cent of Asia-Pacific CEOs and 53 per cent of Latin American CEOs expressed concern about the impacts of biodiversity loss on their business growth prospects, compared to just 18 per cent of Western European CEOs

FSC
100% RECYCLED

WWF

Why we are here.
To stop the degradation of the planet's natural environment and to build a future in which humans live in harmony with nature.

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