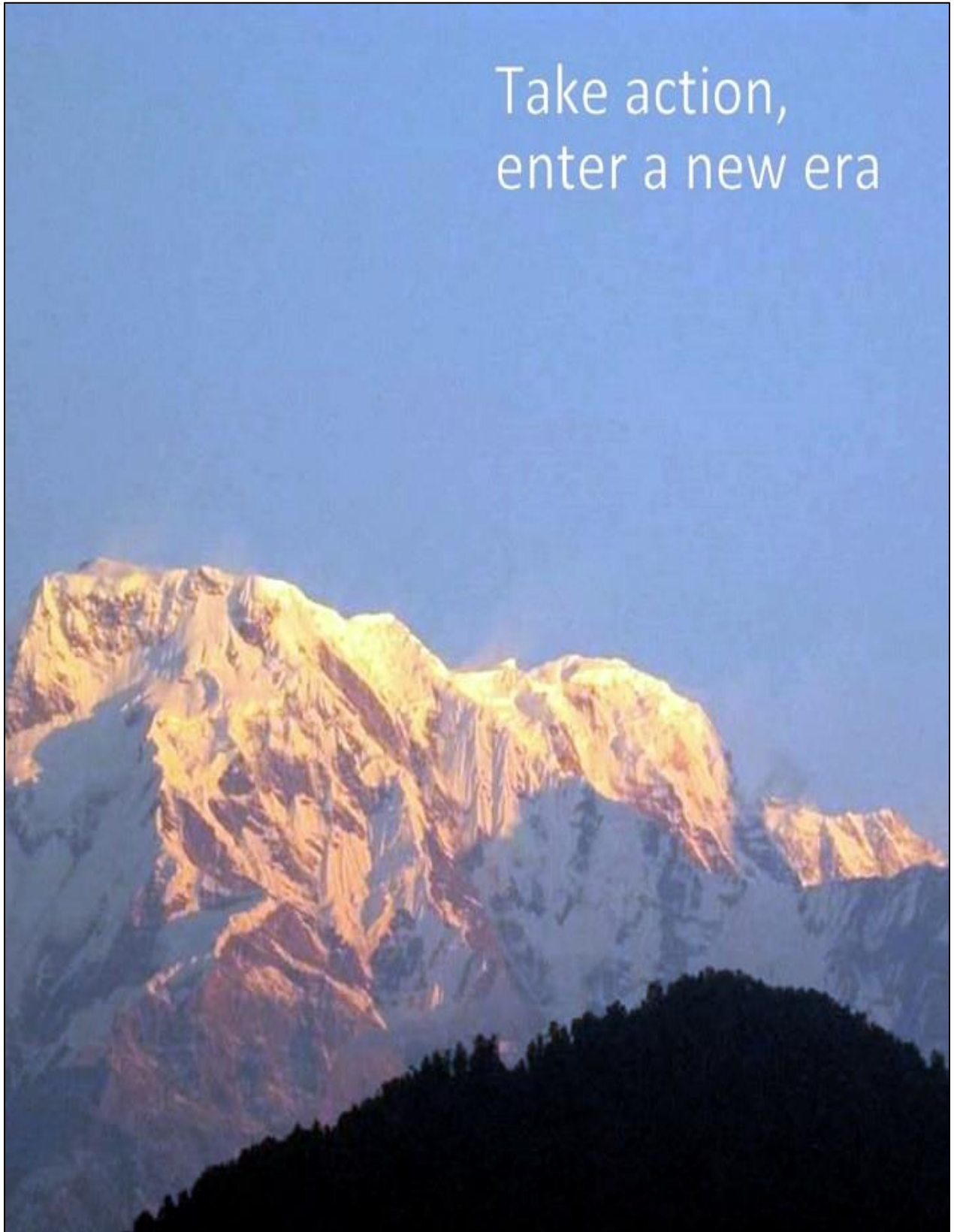


Take action,  
enter a new era



Sunrise over Himalaya in Pedhi, Nepal 20 12 by Eugenia Arribas

Take action, enter a new era

## FOREWORD

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“2. We are at a historic crossroads, and the directions we take will determine whether we will succeed or fail on our promises. With our globalized economy and sophisticated technology, we can decide to end the age-old ills of extreme poverty and hunger. Or we can continue to degrade our planet and allow intolerable inequalities to sow bitterness and despair. Our ambition is to achieve sustainable development for all.”

“12. However, we also know that these problems are not accidents of nature or the results of phenomena beyond our control. They result from actions and omissions of people – public institutions, the private sector, and others charged with protecting human rights and upholding human dignity.”

13. We have the know-how and the means to address these challenges. But we need urgent leadership and joint action now.”\*

\*Extracts from the Synthesis Report of the Secretary-General On the Post-2015 Agenda, The Road to Dignity by 2030: Ending Poverty, Transforming All Lives and Protecting the Planet



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Editors: Elisabeth Eames and Selin Tamer

December 2015

Website: <http://takeaction-enteranewera.webstarts.com> Facebook: <https://www.facebook.com/groups/119702951714013/>

LinkedIn: <https://www.linkedin.com/grp/home?gid=8385007>

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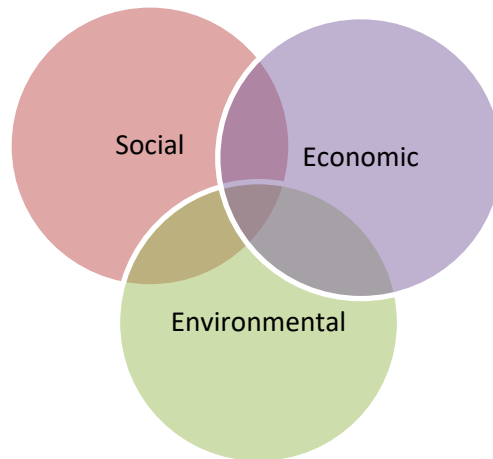
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# INTRODUCTION

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## DEFINITION OF SUSTAINABLE DEVELOPMENT AND THE PURPOSE OF THIS BOOKLET



Sustainable Development is the relationship between environmental, economic and social development. All three dimensions are interlinked so that one depends on the other two; they act together for well-being today and tomorrow!

Sustainable development has been defined in many ways, but the most frequently quoted definition is from Our Common Future from 1987, also known as The Brundtland Report:

*"Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs."*

In chapter six on Sustainable Development Goals we will see how the three dimensions merge and become one circle with 17 integrated goals for a sustainable future.

There has been a fantastic social and economic development, especially the last 50 years. More people are wealthier, healthier and living longer. But the way we develop is not sustainable. This growth is coming at a high cost for the environment. If we continue this same way (BAU, "Business As Usual"), we risk losing the progress we have made.

We call people around the world to join in asking: "Hey, wait a minute! Where are we going? There's got to be a better way!"

The aim of this booklet is to contribute to sustainable development by inspiring people to take action on critical sustainability issues. We try to explain complex issues in an easy way and we give suggestions of **what we can do** to bring about change.

**We cannot rely on others. The future is in our hands.**

# 1 CLIMATE CHANGE

## 1.1 WHAT IS CLIMATE CHANGE?

To some people, a warm planet might be considered nicer than a cold one. However, **global warming** creates serious changes in the ecosystems as well as in the climate. This results in more extreme weather events like **flooding, super storms and summer heat waves** that threaten lives and destroy costly infrastructure.



High as well as low income countries are affected. Low and middle income countries are especially vulnerable because they are less prepared and are likely to experience destructive effects on agriculture, fisheries, infrastructure, human health, local livelihoods and biodiversity<sup>1</sup>. Also in southern Europe and northern Africa, current conditions (high temperatures and drought) are projected to worsen in regions already vulnerable to climate variability. These changes lead to reduction of water availability and hydropower potential, and in general, loss of crop productivity. We might also see new infectious diseases spreading.

All these changes are caused by the increase of **greenhouse gases (GHG)** present in the atmosphere. In this chapter we will see how the global warming - that leads to climate change - is driven by the increase of GHG. We will explore the reasons for this increase and, most importantly, **what we can do about it**.

## 1.2 WHAT IS HAPPENING AROUND US?

### 1.2.1 Sea level rise

The Greenland and Antarctic ice sheets are melting and the sea water is rising. The Intergovernmental Panel on Climate Change (IPCC) projected a global sea level rise of 18 to 59 centimetres from 1990 to the 2090<sup>2</sup>. However, others scientific estimations show that from 2000 to 2100 sea level could rise up to 2 meters (Figure 1). If this

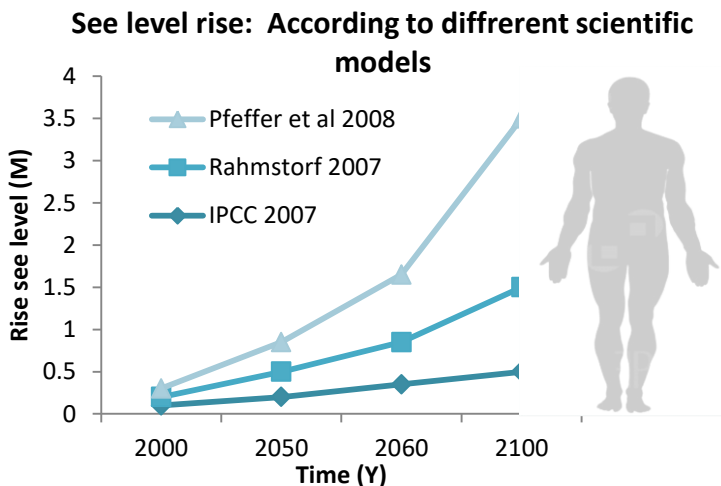


Figure 1 Predicted see levels during time. Figure modified from <https://www.e-education.psu.edu/geog438w/node/261>

were to happen, **the Maldives, and several other islands, would lose a major part of their land area**<sup>3</sup>. Several Pacific Islands and many of the largest cities near to the coast throughout the world will be partially under the water level.

But **the rate of rise is dependent on whether the temperature increase is kept to a minimum forecast of 1.5-2 degrees Celsius above pre-industrial levels, or whether the temperature reaches worst-case projections of 4.8 degrees Celsius by the end of the century.**

### 1.2.2 Extreme events

Today the extreme events in weather are our new normality. Computer models of the climate that include both natural forces and human influences are consistent with what we have seen happening over the last forty years.

**As the climate has warmed, extreme weather is becoming more frequent and more severe, with increases in extreme heat, intense rainfalls, and drought.** Heat waves are longer and hotter and flooding is more frequent.



Figure 2, Flood representation

Hurricane Sandy of 2012 was the most lethal and destructive, and the second-costliest hurricane in United States history. Estimates assess damage from Hurricane Sandy to have been over \$50 billion (2013 USD), a total surpassed only by Hurricane Katrina<sup>4</sup>. And there are numerous other examples of devastating super storms and extreme weather around the world. In Southern and Western Africa between October 2010 and September 2011 severe droughts in the east caused the death of 50,000 people and affected 13.3 million people<sup>5</sup>.

### 1.2.3 Oceans are becoming acidic

One role of the world's oceans is to take up the carbon dioxide (CO<sub>2</sub>) that is produced naturally. Now, large additional amounts of CO<sub>2</sub> are produced by us, humans, when we make and use power based on coal, oil and gas, in power plants, factories, vehicles, etc. This CO<sub>2</sub> also dissolves in the sea water, forming excess amounts of carbonic acid and acidifying our oceans (Fig 3).

**Changes in the acidity of the ocean threaten the marine biosphere (underwater life) and the species that inhabit the sea. Ocean acidity affects the ability of corals to absorb the calcium carbonate they need to maintain their skeletons thus leading to stony skeletons that support corals and reefs will dissolve<sup>6</sup>.** If nothing is done to reduce carbon dioxide emissions into the atmosphere, ocean acidification will continue to increase and more corals (and also shells of shellfish oysters, mussels, etc.) will be diminished.

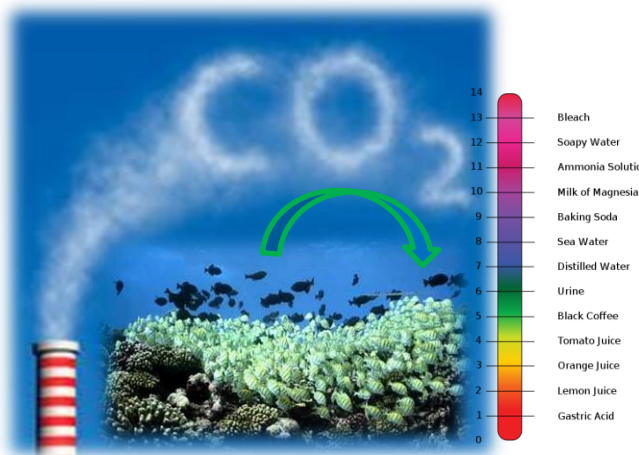


Figure 3 Schema of CO<sub>2</sub> contribution to acidification

shells of shellfish oysters, mussels, etc.) will be diminished.

Coral reefs are often called **the rainforests of the sea**. They support extraordinary biodiversity. **Covering less than one percent of the ocean floor, reefs support an estimated twenty-five percent of all marine life, with over 4,000 species of fish alone<sup>7</sup>.**

In addition, reef structures play an important role as natural breakwaters that minimize wave impacts from storms like cyclones, hurricanes, typhoons, and from tsunamis, which are increasing in frequency as a result of climate change.

The beauty of coral reefs makes them a powerful attraction for tourism, and well-managed tourism provides sustainable means of income and employment in regions throughout the world. According to a United Nations estimate, the **total economic value of coral reefs range from \$100,000 USD to 600,000 per square kilometre per year<sup>8</sup>.**



## 1.3 ROOT OF THE PROBLEM

### 1.3.1 Too much greenhouse gases added to the atmosphere

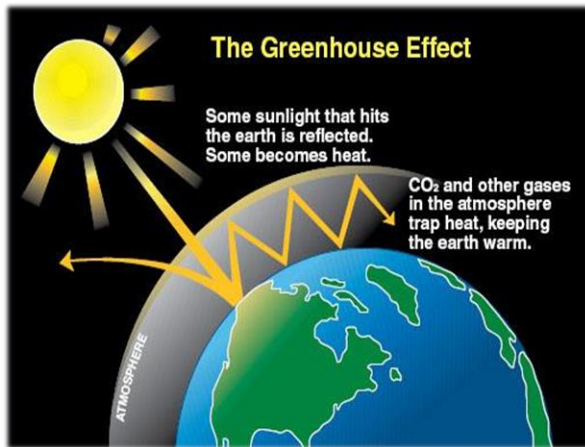


Figure 4, Schema of the green house effect.

Source: image clip art office

Greenhouse gases (including carbon dioxide, methane, nitrous oxides) are called **GHG**. Some of them are visible, such as the smoke coming out of cars and factory chimneys; some are not.

GHG remain in the atmosphere for hundreds of years, blocking heat from escaping, so the planet gets warmer (as shown in figure 4). Human activities have caused an accelerated increase in greenhouse gases in the atmosphere over the last 150 years. In fact, since the Industrial Era began, we have added billions of tons of heat-trapping greenhouse gases to the atmosphere. The greenhouse emissions come from using coal, oil and gas to produce energy for electricity, heat, transportation, but also from non-energy emissions as shown in the figure below.

In the “**Non-energy sector**” we have agriculture and deforestation, mainly of tropical forests. This sector accounts for 1/3 of the total GHG emissions. Indeed, the forests are CO<sub>2</sub> traps that store the CO<sub>2</sub> in a natural way. When trees are cut down for their wood or to use the land for agriculture or pasturage CO<sub>2</sub>, is released and we contribute directly to the GHG increase. This is why we must protect the forest as a solution for the GHG reduction.

The “**Energy sector**” accounts for more than 60% of the global emission of CO<sub>2</sub> and this is rapidly increasing, at the same speed as economic growth<sup>9</sup>.

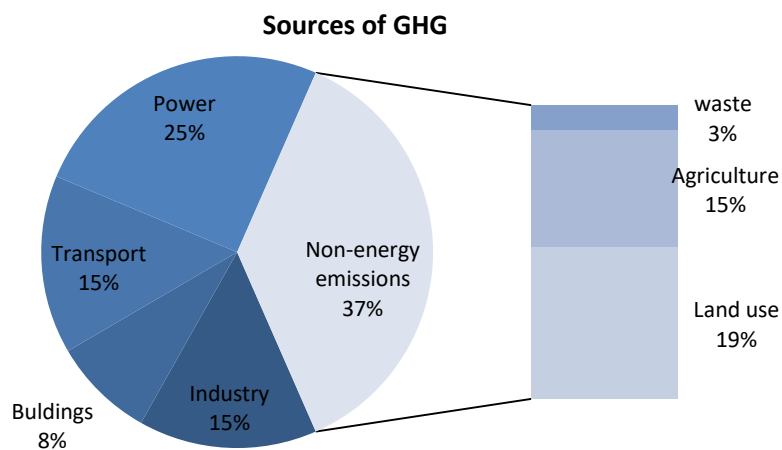


Figure 5 Sources of GHG, modified from ref (9)

We must ensure that the average global temperature rise does not exceed 1.5-2°C. **Though 2°C seems like a small number, for the earth and our future, it has an enormous impact.**



The figure below shows some examples of the impacts associated with global average temperature change<sup>10</sup>. Such fluctuations would have powerful implications for all people in all places. Only 20 years from now, we would all be living in a different world, in many ways. The Amazon rain forest will partially disappear with all its plants and animals, when the temperature increase exceeds 2°C, and with a 3°C increase, the sea level will menace cities like New York, London and Shanghai. Life will be unbearable. With an increase above 4°C our mere existence is in question. **This could be our reality in the years 2050, 2070, the same years we can be CO<sub>2</sub> free if we start to decarbonise now!** The future is in our hands.

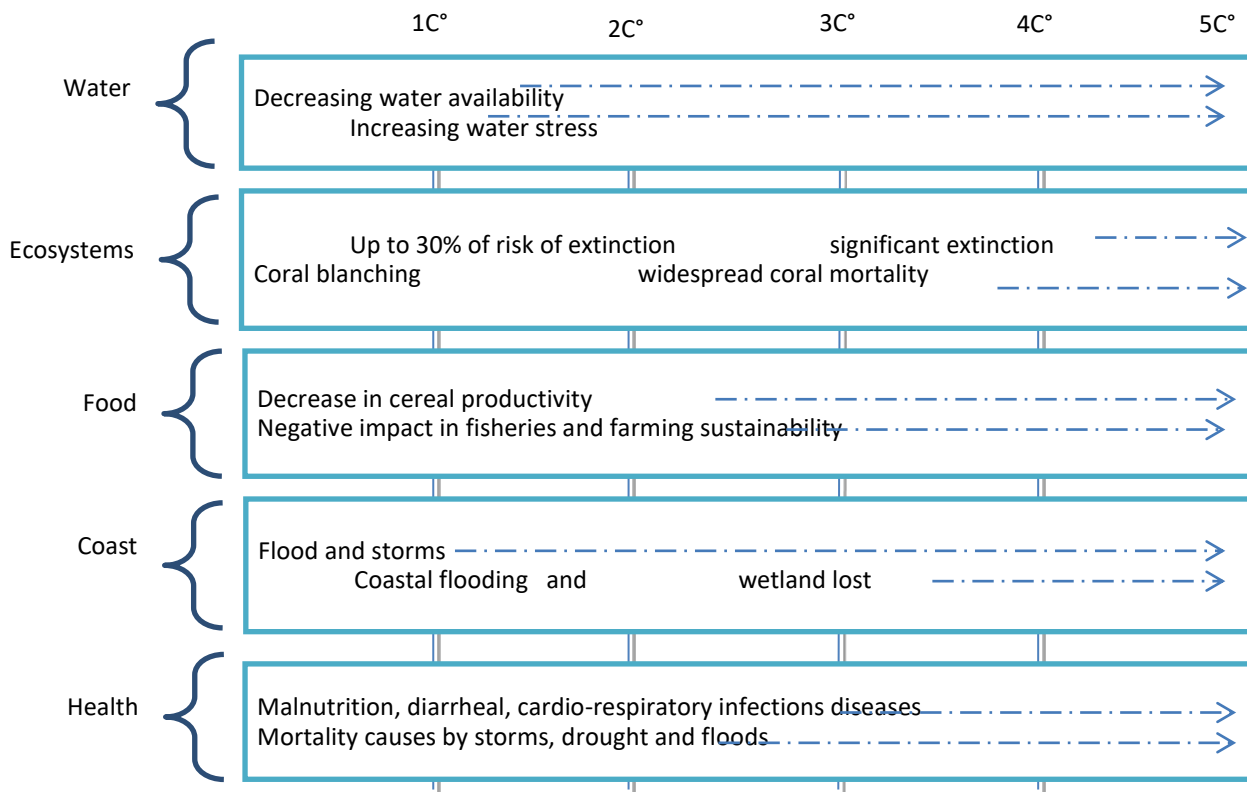


Figure 6 modified from REF (10). Illustrative examples of global impacts projected for climate changes (and sea level and atmospheric CO<sub>2</sub> where relevant) associated with different amounts of increase in global average surface temperature in the 21st century. The black lines link impacts; broken-line arrows indicate impacts continuing with increasing temperature.

## 1.4 WHAT MUST BE DONE, WHAT CAN WE DO?

### 1.4.1 *Collective action towards sustainable development*

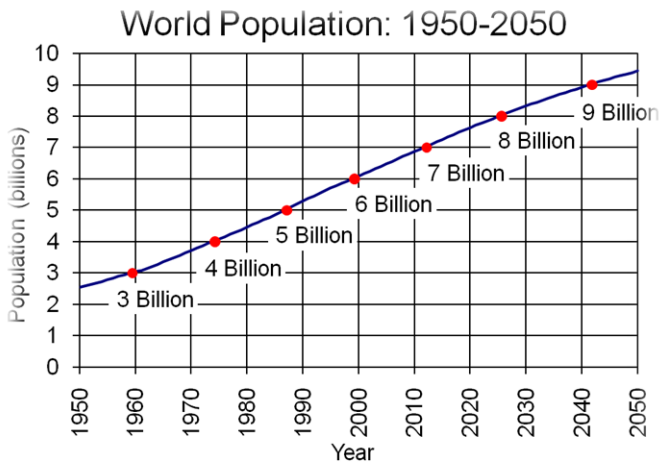
We consider that our most critical issue is to **stay below the 1.5-2°C increase in temperature**, because it affects all other sustainability issues. **To halt climate change** we must **decarbonize our energy**; replace coal, oil and gas with alternative solutions as solar, wind, hydro, thermal power, **stop deforestation, and make changes in our day life choices**.

### 1.4.2 *How can I help decarbonise the planet?*

- **The choices we make in our day-to-day lives matter**  
What is our collective carbon footprint? Measuring your individual carbon footprint takes less than 5 minutes and could change the way you live in harmony with the planet. [Calculate your carbon footprint now<sup>12</sup>](#). Check the last part of the booklet (Conclusion and actions “what can I do in my everyday life?”) where we give you more information on how to help to reduce the climate change.
- CO<sub>2</sub> can be reduced by 60% if the energy sector produces only clean energy to be used for buildings, transport, industry. Use this link from the [Sustainable Development Solutions Network<sup>11</sup>](#) to learn how the transition to clean energy is possible.
- **Get informed and follow the COP21 agreements for and after the December 2015 meeting.**  
In December 2015 governments of all countries met in Paris at the 21st Conference of the Parties (COP21) of the [UN Framework Convention on Climate Change<sup>13</sup>](#). The aim is to stay **within the 1.5-2°C increase limit**.
- **Check if your government has plans and mechanisms for implementation of a progressive change to clean energy**, plans that consider the special conditions of the country and compensate short-term negative effects on poor people.
- **Request and support investment in research, development, demonstration, and diffusion to further advance clean energy technologies** so they can be applied in large scale to low cost also in low income countries.
- **Let polluters pay. Carbon taxes make polluting activities more expensive and green solutions more affordable.** If your city doesn't have a carbon tax, ask about how to implement one and gradually discontinue subsidies of coal, oil and gas.
- **Discuss this booklet with others.** Take a stand. Share your ideas to reverse climate change, support green ideas and policies. Bring your suggestions, questions, and insight to our discussions: join [‘it is about us’](#) join us on [Facebook](#), become a member of our [LinkedIn](#) Group.

## 2 PLANETARY BOUNDARIES

Although our ancestors had a certain respect for nature, humans have overall regarded nature as a never-ending resource. As you can see in the chart below<sup>1</sup>, the world population has now gone from 2.5 billion at the time of the Industrial Revolution in 1950 to 7 billion nowadays, almost a tripling that occurred over 60 years, with ever increasing and at times destructive demands of our planet.



Source: U.S. Census Bureau, International Data Base, June 2011 Update.

This planet is the only one we have. Some of the Earth's resources are becoming scarce while others have already been depleted, they are gone forever. Many of us are not even aware of the severity of what is happening. But we must become aware, because we depend on nature to provide us with our wellbeing in the following ways:

- Support the nutrient cycle, soil formation and primary production ➡ *Security*
- Provide food, water, wood and fiber, fuel ➡ *Basic living goods*
- Regulate climate, flood, disease and water purification ➡ *Health*
- Offer cultural recreation, spirituality, education ➡ *Social relations*

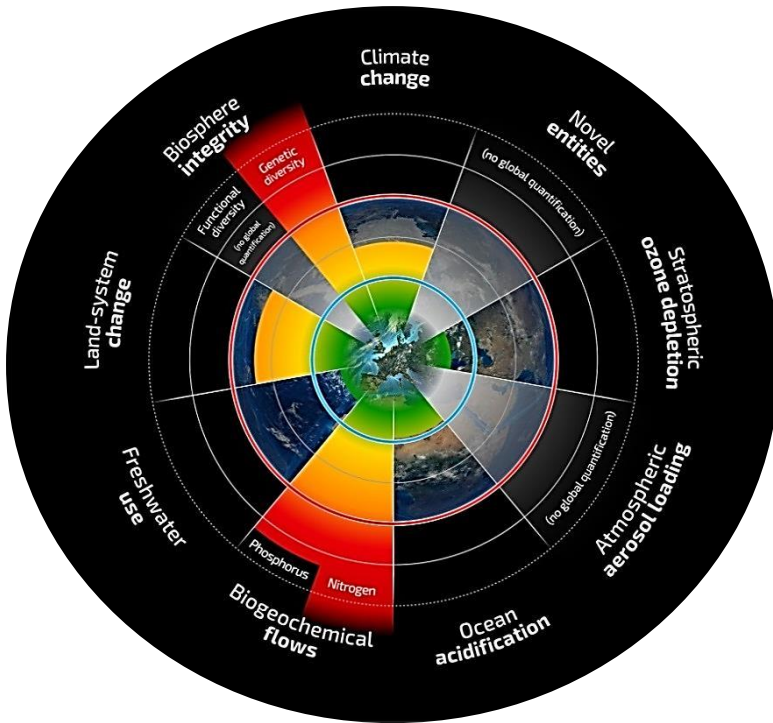
The good news is that **Planetary Boundaries** have been defined so we have the tools to make the planet a safer place within which humanity can thrive in harmony with all that surround us, down to the smallest bee. It is up to us to see that this happens. In this chapter we will show the important role planetary boundaries play in sustainable development and we will give some suggestions as to how to



Smiley Monkey: ©David J Slater/ Wildlife Personalities Ltd.

stay within **those boundaries**.

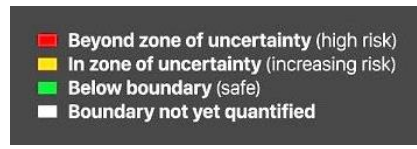
## 2.1 WHAT ARE THE “PLANETARY BOUNDARIES”?



Planetary boundaries, 2015 F. Pharand-Deschênes /Globaia<sup>2</sup>

In 2009 a group of international scientists identified and quantified nine boundaries or earth limits within which the planet earth could have the capacity to sustain our human population. Avoiding crossing these boundaries and remembering to respect the nature of the planet's climatic, geophysical, atmospheric and ecological processes on which we depend, is critical to continue to live a healthy and decent life....

... And we have already crossed 4 of the boundaries as shown in the left figure <sup>2</sup> with red and orange colours.



## 2.2 UNDERSTANDING PLANETARY BOUNDARIES: CAUSES AND CONSEQUENCES

Let's briefly understand each of the boundaries:

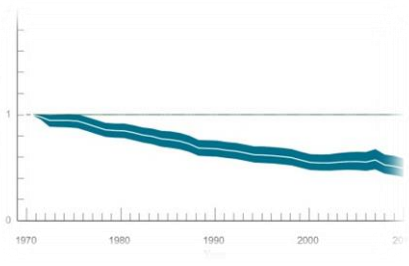
What is the cause?	Facts	Consequences
<b>Planetary boundary: CLIMATE CHANGE Already crossed!</b>		
Carbon dioxide escapes when we burn coal, gasoline and gas, and also from deforestation and agriculture, creates the greenhouse effect and warms the planet.	Regional climate disruptions. 	Increase in CO <sub>2</sub> emissions increases global temperature. Higher sea levels, melted glaciers <sup>3</sup> and cities flooded. Loss of agriculture. Forced migration. Loss of rainforests. High economic loss and costs to compensate for damages. <a href="#">Glaciers mass balance<sup>3</sup></a>
<b>Planetary boundary: LAND SYSTEM CHANGE Already crossed!</b>		
Increased demand for food, water, and natural resources has made us convert forests, grasslands, wetlands into agricultural use.	Loss of ecosystems. Currently, forest covers 31% of the planet. We lose forests the size of 36 football fields <u>EVERY MINUTE</u> due to deforestation <sup>4</sup> . 15% of GHG is due to this reason.	Reduction in forests leads to biodiversity loss, water scarcity, nitrogen and phosphorus cycles impact and increases CO <sub>2</sub> and global warming.

What is the cause?	Facts	Consequences
--------------------	-------	--------------

**Planetary boundary: BIODIVERSITY LOSS (Genetic biosphere integrity) Already crossed!**

Human demand for natural resources like fossil fuel, leads to extensive land system change, the loss of forests and habitats. Overhunting, overfishing and climate change leads to significant biodiversity loss.

More than 50% of all vertebrate species, 39% of terrestrial, 76% of freshwater and 39% of marine species have been lost since 1970. Animal populations are roughly half the size they were in 40 years ago as shown below<sup>5</sup>.



Global Living Planet Index<sup>5</sup>

Forests reduction leads to species extinction as the Giant Turtle below<sup>6</sup>. Ecosystem services and benefits (i.e.: basic living foods) also change.

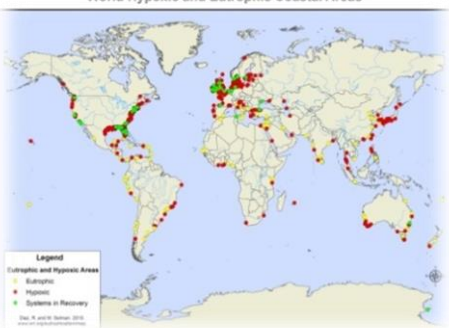


Lonesome George<sup>6</sup>

**Planetary boundary: NITROGEN AND PHOSPHORUS FLOWS Already crossed!**

Extensive use of chemical fertilizers, result in an increase in chemicals water-systems, providing extra nutrients and leading to algae bloom.

Bacteria consumes algae bloom, this deprives water of oxygen and leads to dead zones.



World hypoxic & eutrophic coast areas<sup>7</sup>

**Dead zones** are extensive areas in the oceans, where nothing can live. They have increased from 80 in 1960 to 500 nowadays worldwide as shown in left figure<sup>7</sup>.

Legend:  
 Red: Dead zones  
 Yellow: Areas of concern  
 Green: Recovery Areas

**Planetary boundary: NOVEL ENTITIES, CHEMICAL POLLUTION Boundary not yet defined**

Emission of toxic and long-lived synthetic plastics, heavy metals and radioactive materials.

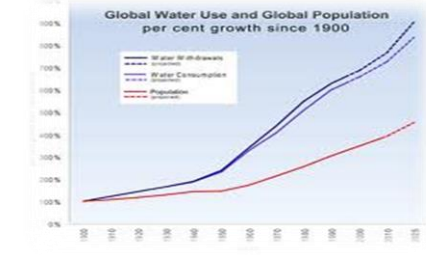


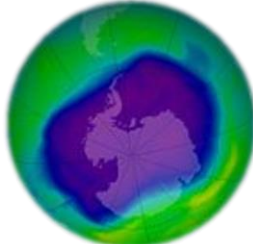
Reduced fertility, genetic damages, reductions in bird populations, impaired reproduction in marine mammals<sup>8</sup>. Eight million tons of plastic are dumped in the ocean every year<sup>9</sup>.

Toxins in food and all materials, including baby bottles and toys, affect our health.



Image courtesy of Dan at FreeDigitalPhotos.net



What is the cause?	Facts	Consequences
<b>Planetary boundary: GLOBAL FRESH WATER USE</b>		
<p>Human activity changes river flows. We pollute water reserves and damage natural systems that filter and clean water.</p>	 <p>Global water use and population<sup>10</sup></p>	<p>Water consumption increases with population and economic growth (see left graph<sup>10</sup>). This leads to a higher use of water for: agriculture (70%), industry (20%) and drinking-household use (10%). By 2025, <b>1.8 billion</b> people will live with absolute water scarcity.</p>
<b>Planetary boundary: OCEAN ACIDIFICATION</b>		
<p>Carbon dioxide sinks into the oceans and slowly acidifies them. This makes it hard for corals, shellfish and plankton to grow and survive and threatens the fish that depend on them for food.</p>	 <p>Image courtesy of think4photop at FreeDigitalPhotos.net, Marine dead reef</p>	<p>Excess of CO<sub>2</sub> affects marine life, reduces fish stocks and coral reefs that protect against hurricanes and tsunamis. It causes the extinction of species and change in reproduction and gene patterns.</p>
<b>Planetary boundary: ATMOSPHERIC AEROSOL LOADING Boundary not yet defined</b>		
<p>Aerosols are small particles in the air seen as smoke, dust and haze as in right photo. They are produced mainly using fossil fuels; coal, gasoline, gas, but also through land-use change, when dust and smoke is released into the air.</p>	<p>Aerosols increase air pollution and change the amount of solar radiation reflected and absorbed in the atmosphere<sup>11</sup>.</p>  <p>City Pollution by Peter Griffin</p>	<p>Aerosols also interact with water vapor, affecting cloud formation and monsoon systems. Fine particulate matter is associated with a broad spectrum of acute and chronic illnesses, such as lung cancer, chronic obstructive pulmonary disease (COPD) and cardiovascular diseases<sup>12</sup>.</p>
<b>Planetary boundary: OZONE DEPLETION</b>		
<p>The ozone layer is located high up in the atmosphere and absorbs ultraviolet radiation from sunlight. We damage this layer by using CFCs or <a href="#">chlorofluorocarbons</a> from spray cans, solvents and cooling agents for refrigeration (i.e. AC).</p>	<p>Antarctic ozone hole was detected in 1976 (see right figure<sup>13</sup>), then aerospray cans were banned. After widespread protests CFCs were replaced and banned with the Montreal Protocol. This is an example that change is possible when people get mobilized. Not all countries signed the Montreal Protocol (1989).</p>	<p>Leads to several types of skin cancer.</p>  <p>Ozone layer over Antarctica<sup>13</sup></p>

## 2.3 WHAT CAN WE DO?

- **Stimulate certification** by getting more people interested in sustainable development. We can ask questions like "where was this product produced"? (food should preferably be local), is it "green", grown naturally without pesticides?
- To know more about the Planetary Boundaries, see **The Stockholm Resilience Centre** website ([www.stockholmresilience.org](http://www.stockholmresilience.org)), a TED Talk ([see here](#)) and their advice to the business community SOS for Business 2015 📺
- **Promote and buy certified products** holding recognized sustainable development certifications: As consumers, we play an important role for sustainable development, with the selection of the products we buy. There are several international non-governmental organizations (NGOs) that certify products that fulfil different sustainability conditions.
- Join us on [Facebook](#), become a member of our [LinkedIn](#) Group
- Explore the following organizations that certify sustainable products and services:

Biodiversity loss: consume products that are sustainable and environmentally certified



Land system change: have a balanced diet, little meat. Buy local

Global fresh water use and chemical pollution: use water efficiently and avoid buying products with this label, which can pollute the water.



Nitrogen and phosphorus: Eat BIO and ECOlogical products. They have less use of synthetic fertilizers

Stratospheric ozone depletion and Atmospheric aerosol loading: Check the labels in the products, buy with NO CFC's!



Climate change and ocean acidification: see chapter on climate change

### The Marine Stewardship Council<sup>14</sup>

train and certifies fisheries in sustainable fishing. Try to buy seafood labeled MSC. EU Ecolabel, products and services.

Forest Stewardship Council<sup>15</sup> for forestry and wood products. Fairtrade, food and agricultural products, produced in an ethical way; providing workers with decent salaries. Rainforest Alliance, conservation of rainforests and its biodiversity IFOAM, International Federation of Organic Agriculture Movements work for omission of pesticides, synthetic fertilizers and GMOs.

Products should be certified by reliable, independent organizations. Some industries certify their own



### 3 POVERTY AND SOCIAL INCLUSION

*"Like slavery and apartheid, poverty is not natural. It is man-made and it can be overcome and eradicated by the actions of human beings. ...Overcoming poverty is not a gesture of charity. It is an act of justice. It is the protection of a fundamental human right, the right to dignity and a decent life." Nelson Mandela<sup>1</sup>*

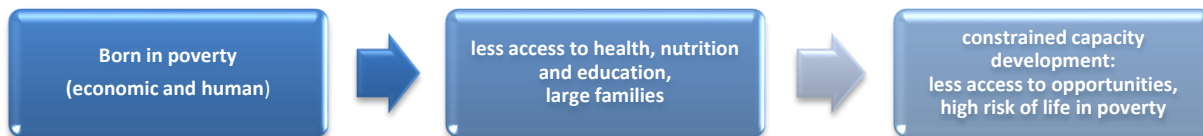


Figure 1, Mandela-2008 CC-BY 2.0 Anghy

We have the resources and knowledge required to eradicate extreme poverty. It can happen if priorities are set right. Eradicating extreme poverty is an ethical issue that also affects prosperity and the wellbeing of all of us and of our planet.

#### 3.1 WHAT IS POVERTY?

In the Millennium Development Goals, the MDGs, 2000 to 2015, **extreme poverty** was defined as an income below \$ 1 per day per person. The World Bank increased this level to \$1.25 and in 2018 to \$1.9. This is a rough “theoretical” minimum, set to allow us to compare and measure trends. In addition to this “**economic poverty**” we have “**human poverty.**” Human poverty is related to the development of capacities: education, health and mobility; the possibilities to progress.



Poverty in our time is not natural. It is mainly a **consequence of people, structures, and institutions** failing to facilitate, or to make it possible for people and countries to progress.

To eliminate extreme poverty, the rights of all people must be respected. Social and economic development must be made inclusive, addressing the gaps within and between countries.

**Social inclusion** is when all people have access to opportunities, independent of their social and economic background. An inclusive society is an open society with a welfare system that provides economic and social security and possibilities to advance.



Figure 2, Slum area, Manila, Philippines BigStock shadow216

With **climate change**, we have an additional cause of poverty. The already poor, especially women and children, have smaller margins, are less protected, and are more exposed. Climate change is felt in all countries, including in South Asia and Sub-Saharan Africa where 80 percent<sup>3</sup> of the population lives in extreme poverty. Extensive areas experience droughts, floods and extreme weather events. **People who have contributed the least to climate change are often those who are affected the most.**

## 3.2 FACTS AND TRENDS



Figure 3, Population in extreme poverty<sup>3</sup>

Poverty is decreasing rapidly, **from more than half of the developing world population in 1981 to 20 percent in 2010<sup>2</sup>**. People live longer and healthier lives and more people have access to opportunities to continue to progress. These are major achievements. However, more than one billion people still live in extreme poverty and **2.2 billion<sup>3</sup> struggle to survive on less than 2.00 USD per day**. Most of these people are stuck in both economic poverty and in human poverty. Many, both children and adults, go to sleep hungry, every night.

Around 80 percent<sup>3</sup> of **extreme poverty** is concentrated in **South Asia**, where 399 million<sup>3</sup> people live in extreme poverty and in **Sub-Saharan Africa**, where 413 million<sup>3</sup> people **live in extreme poverty**.

### 3.2.1 Who are the people that have come out of poverty?

The economic growth of the emerging markets has come as a surprise to many. The middle class in the fast growing BRIC countries (Brazil, Russia, India and China) is estimated to increase by more than one billion<sup>4</sup> people between the years 2000 and 2020. This new middle class consists of individuals who lived in poverty but had access to healthcare and education and they have been able to benefit from economic growth.

One of these BRIC countries, China, has achieved the most remarkable poverty reduction in history, with **extreme poverty falling from 84 percent in 1981 to 12 percent in 2010** (see graph below), and with an economic growth of roughly 10 percent per year since 1978 when Deng Xiaoping came into power and introduced market reforms. Unfortunately, their CO<sub>2</sub> emissions have increased in a similar way.

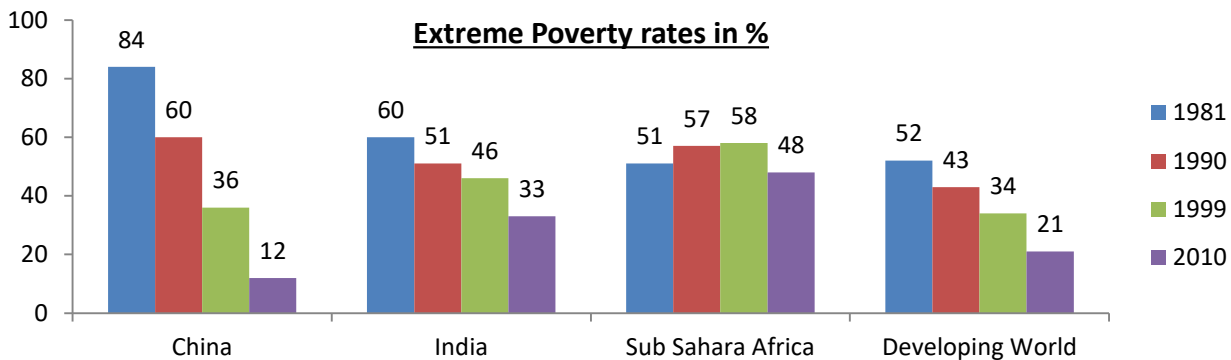


Figure 4, World Bank staff estimates

### 3.2.2 Why is China advancing so fast and why is India held back?

There are several reasons for economic growth: historic, geographic, gender, resource availability, infrastructure, cultural, and of course governance and politics. The causes vary depending on the country and the local situation, but human development (healthcare and education) from childhood lays the base for economic growth to take place.

In 1980, when China started its market reforms, **India** had less **poverty (60 %)**, than **China (84 %)**. However, China had invested in education. In 1980 most people in China could read and write, and many could benefit from and contribute to the economic reforms. Figure 4 above, shows how fast China reduced its poverty rate while **India** had relatively slow growth. India had to carry the burden of a fast growing **illiterate population**.

India invested in higher, post-secondary education, but failed to invest in basic education for the broad population. In 2011, **35,4% of women<sup>5</sup> were still illiterate!** Girls’ education has broad implications for them and for their country. As we can see later in this chapter, girls with no or low levels of education have more children. Due to the high population increase, food is once more becoming scarce. There is a need for a new “Green Revolution”!

### 3.2.3 Economic development in Africa

**Sub-Saharan Africa** is also catching up with an average annual economic growth rate of 5 percent<sup>6</sup>. Investment in education and health has increased since 2000, but poor people, especially those in the countryside and girls, have not yet been given access to social services at the same rate as their more urban and male counterparts. This affects **population growth**, which is high, at around 2.7 percent<sup>7</sup> per annum (an average of 4.7 children per woman). The economic growth, is therefore, not 5 percent, but much lower when calculated per person.

### 3.2.4 Education is so important, but what does that have to do with how many children people have?

**Women with low levels of education tend to have more children** than they would like to have, and their children often get lower levels of education and even lower chances to survive their first 5 years.

In Sub-Saharan Africa, as illustrated in this graph, (UNICEF 2010 PFC report Figure 5), **170 of 1000 children born by a mother with no education did not survive to their fifth birthday.** That is twice as many as those born by a mother **with secondary education.**

Girls with secondary education are more likely to get married and have children later in life and they are better prepared to take care of the children that they have. **The level of education of the mother influences the level of education of her children.**

These are examples of the **“intergenerational cycle of poverty.”** To break this cycle, we need **a welfare system and inclusive social development.** Education and capacity development are basic requirements. They are necessary for any person and any country to be able to progress and to come out of poverty.

Families with high infant mortality and low levels of education tend to have more children and they are often trapped in extreme poverty. If universal education is implemented globally, this could also help the world population to stabilize at 9 billion, rather than increase to 11 billion or more.

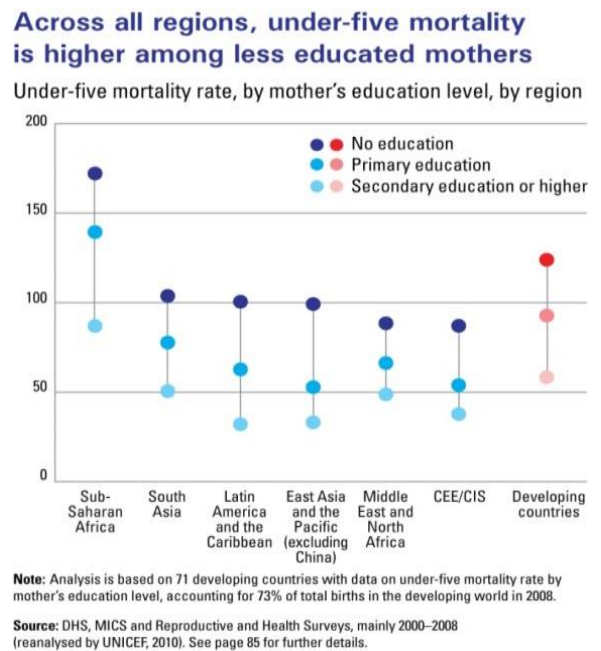


Figure 5, UNICEF 2010 PFC report <sup>12</sup>

## 3.3 WHAT MUST BE DONE?

### 3.3.1 *Leave no child out*

Social inclusion must start with children. To achieve sustainable development of a country, all children, especially girls, and those in extreme poverty, must grow safe and healthy and reach at least secondary education. We should hold the governments and society accountable!

### 3.3.2 *Inclusion and opportunities*

Governments and society should identify and eliminate reasons for exclusion, implement safety nets, and promote access to the formal economy and market; financing, housing, land, service, and infrastructure, in order that everybody may progress, under similar social and economic conditions.

## 3.4 COLLECTIVE ACTION – WORK TOGETHER TOWARDS SOCIAL INCLUSION

### 3.4.1 *One critical issue*

The most urgent issue related to Poverty and Inclusion is access to and completion of good, quality primary and secondary education, by all children, especially girls, and children in poor communities.

### 3.4.2 *What you can do?*

Support and collaborate with organizations working for inclusive education, not with one school but for the school system. Globally, funds for education are being reduced and attention is being spread to other priorities.

**Keep attention focused on education.**

- Join or start groups and networks on eradication of extreme poverty, social inclusion, and girls' education
- Keep attention focused on education
- Be part of the discussion
- Join us on [Facebook](#) and become a member of our [LinkedIn](#) group

*At the end of this booklet you will find more suggestions for what we can do in our daily life to live a more sustainable life ourselves.*

*“Sometimes it falls upon a generation to be great. You can be that great generation. Let your greatness blossom.” - Nelson Mandela<sup>1</sup>*

## 4. Sustainable Cities



Figure 1, Air pollution, Kuala Lumpur, Malaysia 2005. CC Flickr by servus    Figure 2, Waterfront Walkway Burlington, Ontario, Canada

### 4.1 What Are Sustainable Cities?

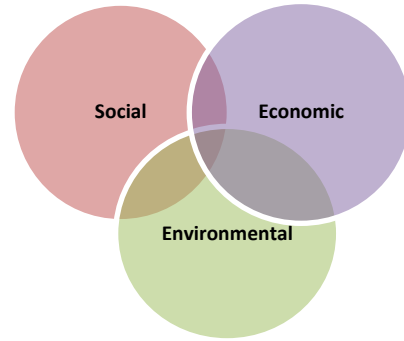
- Sustainable cities are cities that can meet our present needs without compromising the ability of future generations to meet theirs.
- Sustainable cities are economically, socially, and environmentally inclusive and sustainable.
- Sustainable cities offer opportunities and integrate all inhabitants, while preventing poverty and eradicating extreme poverty.

In this chapter we will see how our cities have evolved and how they can become sustainable. We will start with an overview of city growth and development over time, and then we will look at some of the challenges and opportunities for sustainable development in cities. We will show how sustainable cities be a model and influence the rest of the country. Finally we will give examples of how each one of us can contribute to a sustainable future.

<i>City growth</i>	
<i>Past</i>	<i>Present -Future</i>
<p><b>Before the Industrial Revolution</b>, only ten percent of the world’s population lived in cities such as Cairo, Rome, Constantinople, Beijing, Paris, and London<sup>1</sup>.</p>	<p><b>Now more than half of the world’s population</b> lives in cities. The city environment stimulates economic growth. Large populations in relatively small areas and the circulation of larger amounts of money attract investors and entrepreneurs.</p>
<p>With the Industrial Revolution, an economy based on coal and oil was created; <b>factories</b> were built, <b>cars</b> became common, <b>new farming techniques</b> were developed, <b>chemical fertilizers</b> and <b>machines</b> were invented. Extensive <b>forests were chopped down</b> and new farmland was opened. Agricultural yields improved and world population increased from 1 to 7 billion.</p>	<p>One in eight people live in 28 mega cities that have <b>more than 10 million inhabitants</b>; Tokyo 37.5, Jakarta 30, New Delhi 24, Manila 22.7, Shanghai 22.7, Karachi 21.6, New York 20.7 million<sup>3</sup>.</p> <p>The fastest growing cities are in India, China, Nigeria, Indonesia, US, Pakistan, and DR Congo.</p> <p>They have <b>rapid economic growth and accelerating increase in CO<sub>2</sub> emissions</b>.</p>


## 4.2 OPPORTUNITIES FOR SUSTAINABLE DEVELOPMENT

This sub-chapter we will give practical example of how the three dimensions (social, economic, and environmental) interact, and how we can build on opportunities in the cities to achieve sustainable development.



<i>Social and Economic Development</i>	
<i>Challenges</i>	<i>Opportunities</i>
<p>Urban population is expected to increase by <b>2.5 billion people between 2014 and 2050</b>, adding an estimated 70 million new residents every year. Over 90% of this increase will be in low income countries<sup>3</sup>.</p> <p><b>Socio-economic challenges</b></p> <p>Some of the migrants to large cities will benefit from the opportunities in urban areas, while others, often those with low or no education and skills, may have little opportunity. More than 1 billion people live in urban slums. If effective inclusive policies are not implemented, this may increase to 2 billion people by 2030.</p> <p><b>Social networks</b> within neighbourhoods are often lost in cities and life can become harsh.</p> <p><b>Inequalities</b> in cities are increasing. There are people living in extreme poverty and others in extreme wealth. This leads to instability and violence.</p> <p><b>Young population:</b> The average age of the population coming from the countryside will, in low income countries, be below 20. This represents an educational challenge but also great opportunities for capacity development of the new urban generation.</p>	<p style="text-align: center;">Figure 3. Economic Growth, GDP per capita in 1990 US dollars.</p> <p>Poor countries are catching up; they have faster economic growth and urbanize more rapidly than rich countries.</p> <p><b>80% of the economic output is generated in cities<sup>1</sup>.</b></p> <p><i>Urban policies that ensure the benefits of economic growth reach everyone can accelerate progress in the whole country.</i></p> <p>Well managed cities invest in <i>their people</i>, creating <b>opportunities for everybody</b> to progress by</p> <ul style="list-style-type: none"> <li>● Facilitating access to quality <b>healthcare and education</b>, with special focus on <b>children in poor families</b></li> <li>● Facilitating access to <b>finance, formal market, housing and job creation</b></li> <li>● <b>Integrating</b> people living in slums into formal neighbourhoods, implementing strategies for land allocation and inclusive land use.</li> <li>● <b>Aiming for wellbeing:</b> stimulating sustainable lifestyles and a <b>culture of wellbeing</b> where economic growth is just one of the means to get there. <i>Such culture can spread and inspire people throughout the country.</i></li> </ul>



<i>Sustainable Infrastructure</i>	
<i>Challenges</i>	<i>Opportunities</i>
<p><b>Public transportation</b> is often of low quality with poor connections. People then prefer, if possible, to go by car. Poor neighbourhoods are often without proper <b>roads</b>.</p> <p>The typical way to handle <b>waste</b> is in landfills, which pollute air and underground water and represent a missed economic opportunity.</p> <p>People in poor areas have seldom access to <b>clean water</b>.</p>	<p>Good <b>public transportation</b>: buses, metro systems, properly managed biking and walking roads, electric vehicles.</p> <p>Paved, well drained <b>roads</b> in all neighbourhoods.</p> <p>Using urban <b>waste</b> as input for recycling and energy production.</p> <p>Healthy ecosystems, providing <b>water</b> safely to all, at a reasonable cost.</p> <p><i>Using city experience and research to stimulate and support sustainable infrastructure throughout the country.</i></p>
<i>Clean energy sources and lifestyle</i>	
<i>Challenges</i>	<i>Opportunities</i>
<p>It has been a fantastic development for humanity over the last 50 to 100 years, but it has been at a high cost for the environment. <b>We can continue to progress but we need drastic changes.</b></p> <p>Cities must take the lead to decarbonise (stop using coal, oil and gas) since <b>80% of the global energy<sup>1</sup></b> is consumed in the cities, and <b>70% of carbon dioxide emissions<sup>1</sup></b> (the most critical gas for climate change) is produced in cities.</p> <p>Cities should also take the lead in energy efficiency, introducing “green buildings” with improved construction, heating and cooling systems.</p>	<div style="display: flex; align-items: center;">  <div style="border: 2px solid orange; border-radius: 15px; padding: 10px; margin-left: 10px;"> <p>Clean electrification of all energy can reduce CO<sub>2</sub> so we stay below 2°C increase</p> </div> </div> <p><small>Figure 4. Electric car. Håkan Dahlström/Creative Commons<sup>9</sup></small></p> <p>Power plants that produce energy for cities should gradually (but urgently) replace coal, oil, and gas with clean energy like solar power, hydroelectric, and wind power. This is then <b>converted into electricity for industry, housing, and transport</b>. The economic and research capacities required for this transit are found in the cities<sup>4</sup>.</p>
<i>Lifestyle and food consumption</i>	
<i>Challenges</i>	<i>Opportunities</i>
<p>Urban inhabitants are wealthier, produce more waste and consume more meat. The additional 2.5 billion people who will migrate to cities in the coming 35 years<sup>3</sup> will adopt the same <b>lifestyle</b> if urban culture is not changed.</p> <p>The quantity of food production in the world is 4 billion tons per year. Some studies suggest 30-50% of this <b>food is wasted<sup>2</sup></b>. This is both a moral and an envi-</p>	<p>Introduce a culture of reusing, recycling, and minimum waste.</p> <p>Some scientists claim food waste is so significant it could easily feed the future estimated 9 billion people<sup>5</sup>.</p> <p>Everyone can contribute to sustainability by reducing food waste in supermarkets, restaurants, and in our homes, and by requesting that the food industry do the same.</p> <p>Opportunities for city gardening should be provided and</p>



<p>ronmental issue. One billion people go hungry, water is wasted (70% of world water use is for agriculture<sup>1</sup>), forests are being cut down to get additional agricultural land. Air, water and land are being polluted with pesticides, fertilizers and green-house gases. And it is being wasted!</p>	<p>locally produced food made available.</p>
<p><i>Protecting against climate change</i></p>	
<p><i>Challenges</i></p>	<p><i>Opportunities</i></p>
<p>Most coastal cities will be partially flooded if the water level rises 1.5 to 2 meters (at 2 - 3°C increase)<sup>2</sup> including Tokyo, New York, London, Manila, Jakarta and Shanghai.</p> <p>Heat waves, storms, floods, droughts, air pollution, and earthquakes are among the environmental catastrophes we can expect to intensify.</p> <p><b>Rapid urbanization and urban adaptation to sustainable development are among the most complex socio-economic challenges of the 21<sup>st</sup> century.</b></p>	<p>We can protect and adapt our cities to those ecological shocks that can be expected due to increasing global warming. If good preparedness measures are taken in advance, human and economic loss can be reduced. It is also in the interest of the business community to contribute to protective measures. The economic losses of such catastrophes can be enormous. High income countries should give technical, legal, governance, and financial support to middle and low income countries.</p>
<p><i>Governance</i></p>	
<p><i>Challenges</i></p>	<p><i>Opportunities</i></p>
<p><b>Fully urbanized high income countries</b> need to partially rebuild their cities to invest in environmentally friendly infrastructure and green, sustainable building and living.</p> <p><b>Rapidly urbanizing, low income countries</b> must also rebuild their cities and in addition, they must prepare for a massive expansion; develop extensive new urban areas and provide them with infrastructure and services. To combat and prevent poverty, existing slum dwellers and people who migrate to the cities need a place to live.</p> <p>Sub-Saharan Africa will double its urban population in the next <b>20 years</b><sup>3</sup>!</p>	<p>Handling sustainability challenges requires good governance, professional sustainable city planning and development, new technical solutions and good financing of infrastructure investments.</p> <p>High income countries should give support to low income countries in sustainable city planning, new technical solutions and financing.</p> <p>The business community can play an important role in the transition to sustainable cities. Sustainable development offers new opportunities: a boost for new business and extensive job creation.</p>

## 4.3 WHAT CAN WE DO TO DEVELOP A SUSTAINABLE LIFESTYLE?

### 4.3.1 One critical issue

Related to Sustainable Cities, we consider the urgent issue is to **spread awareness and interest in sustainable development by introducing an inclusive, sustainable lifestyle and culture.**

*People in cities can play a key role for sustainable development: change is spreading from the cities to the rest of the country.*

### 4.3.2 What can we do?

- Do not accept that some people must live in poverty!
- Request and use clean energy and efficient appliances
- Request and use good public transportation. Take the bike or walk when possible.
- Develop a lifestyle of reuse, recycle and minimum waste, and influence others to do the same, including supermarkets and restaurants.
- Strive for a culture of wellbeing for all, in your neighbourhood and in your city.
- Discuss this booklet with friends and see what you can do depending on your interests and the sustainability issues in your city.
- Consider starting a group or network on how you can together with others and promote a sustainable lifestyle.
- Get more suggestions at the end of the booklet and add what is relevant for you.
- Join us on [Facebook](#) and participate in our [LinkedIn](#) group.

We can continue to progress but we have to change our path.  
We are at a "dead end."

## 5. ECONOMIC GROWTH

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*"The welfare of a nation can scarcely be inferred from a measure of national income... Goals for more growth should **specify more growth of what and for what**" - - Simon Kuzniets, Report to the US Congress in 1934*

### 4.4 GDP, GROWTH, WELLBEING

Economic growth is measured as growth in GDP (Gross Domestic Product). The GDP<sup>1</sup> is the monetary value of all goods and services produced within a country's borders in a specific time period. It does not consider the aspects presented in this booklet: like environmental and social costs and sustainability, nor does the GDP consider economic sustainability. This is the root of the problem; the index we use to measure progress (GDP) does not take us in the right direction, and it even puts us at risk of losing the progress we have made, including our health and wellbeing.

It is clear now that population growth and economic development are leading to rapid changes, mainly in our global ecosystems. We assess the consequences of impacts and costs for economies of our current situation; the Earth's transformation contributes to substantial gains in human wellbeing and economic development<sup>2</sup>.

For our prosperity, the economy should serve society within the life support systems on Earth<sup>3</sup>. Implementing the best metrics is needed to reflect an economic development that integrates a balanced view among GDP and its economic, social, and environmental impacts.

Now, there are several indexes (such as the Ecological Footprint, Human Development Index, Happy Planet Index, Prosperity Index, Gini Index, Better Life Index), some of them measure wellbeing and happiness<sup>2,3</sup>.

An example of the index considering the environment in addition to economic factors is the Social Progress Index (SPI)<sup>4</sup>, released in 2010 by a group of global leaders from the social sector.

We should note that countries with similar GDPs can have very different levels of socio-economic progress.

### 4.5 WORLD, HUMAN AND TRANSITION

**Since roughly 2,000,000 years ago**, the world has gone through a huge transition based on numerous innovations and inventions. From the wheel and paper to today's high-tech gadgets, we have changed the ways we live and work. In our times, technological wonders have become indispensable to our daily routines.



Figure 1, Collector, Ivona Sak

#### 4.5.1 Timeline of innovations and inventions.

Let's make a quick review of some innovations and inventions that helped us to progress<sup>5,6</sup>:

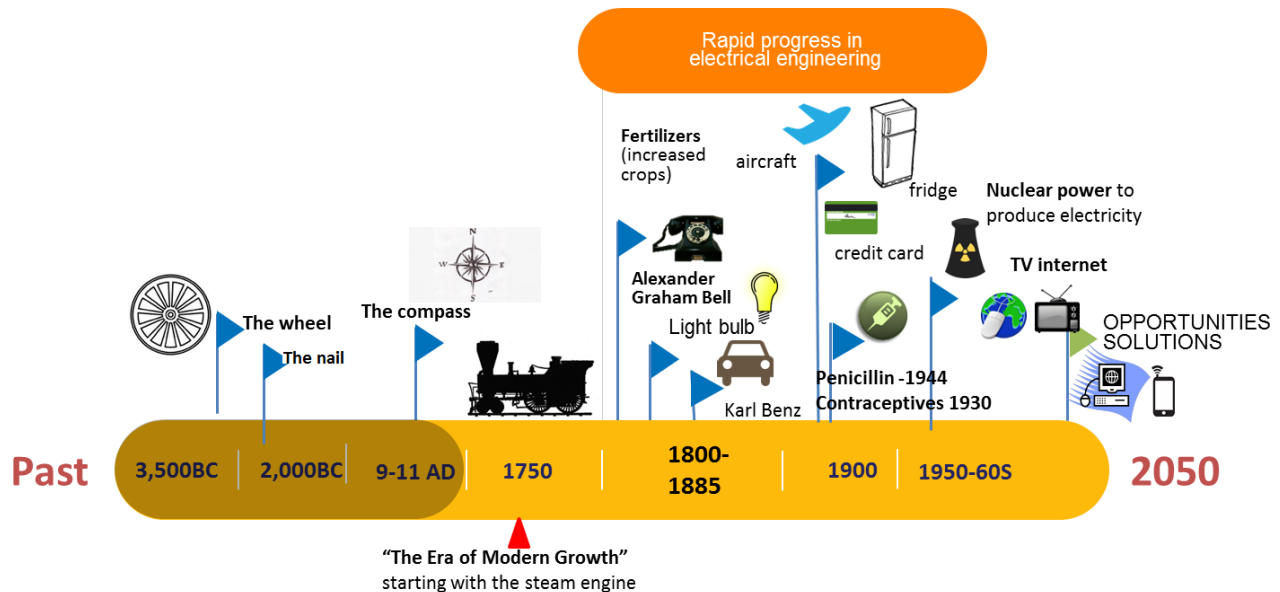


Figure 2, Timeline of innovations and inventions, Carolina Hoyos

#### 4.5.2 Advantages and disadvantages of the modern times lifestyle

We use modern techniques and technologies like:

Broad band, wireless internet, wireless telegraphy – embedded in mobile, flat screens, motion controllers and iTunes, recycling, bio-fuels, solar cells, biotechnology, nanotechnology, genetically modified organisms, nuclear energy, quantum physics, electronics, laser, medicine (transplants, surgery, vaccines).

Our Modern Lifestyle reflects individual attitudes, values and worldviews:

Currently, this lifestyle is marked by "**green**" purchasing and production in recognition of threats to global sustainability, but also by "**consumerism**."

Being "**green**"- consuming less, using natural products, and producing less harmful waste (toxic chemicals and other polluting substances, including CO<sub>2</sub> and other greenhouse gases); versus "**consumerism**"- consuming more and more products and services, with little concern about environmental consequences.

#### 4.5.3 What forces shape our lives?

Our lives are shaped by our social and economic status:

-half of the people in the world live on less than \$2 USD per person per day; even more people do not have full access to rights, opportunities and resources like housing, employment, healthcare, education and finance .

**Discrimination/gender** is also a significant issue: women and girls do not have the same access to material resources, legal and other rights.

#### 4.5.4 What are the social and economic costs of modern times?

We are threatened by and go through the social and economic costs of these modern times, like:



Figure 3, Man Child, Ivona Sak

**Diseases caused by noise and other pollution:** asthma, allergies, chronic respiratory diseases, cancer, liver disease, diabetes, cardiovascular disease, depression, anxiety and obesity.

**Destruction of the environment:** global warming/ climate changes, deforestation, wasted lands and lakes, rivers and oceans with no life, resources depletion, polluted air, acid oceans, scarcity of fresh water and waters with lots of plastic waste.

**Environmental and Social Tragedies, i.e.:**

London<sup>7</sup> (**smog** 4,000 - 10 000 **people died** in Dec. 1952),

Bhopal<sup>8</sup> (**dioxin pollution** accident at a Union Carbide Pesticide Plant 15 000 **people died**, many of the survivors **suffered** blindness, organ failure and other awful disabilities; a high number of children have been born with birth defects Dec.1984).

The costs of protecting societies and economies from extreme weather impacts are rising and will continue to rise in an accelerated way. This economic system, based on growth without considering consequences, is unsustainable.

If we do not make drastic changes we **risk losing THE ADVANCES we have MADE.**

#### 4.6 WHAT MUST BE DONE?

We need to restore the liability of the planet and improve the quality of life based on cooperation towards proven beneficial and shared goals, such as protecting assets, and promoting the possibilities of future progress, profits and benefits.

**We need a different way of life. Defining and shaping our lives based on social capital, respecting the environment, and respecting people.**

**We are not machines that only create more money, higher increase in GDP.**

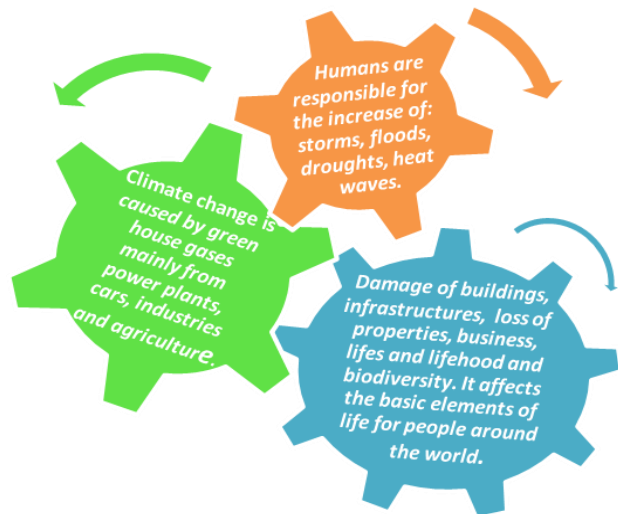


Figure 4, Responsibilities, causes and results, modified<sup>9</sup>, Ivona Sak.

4.6.1 What can we do, as customers, citizens, businesses, and what can be gained?

“Anyone who believes exponential growth can go on forever in a finite world is either a madman or an economist.”  
Kenneth Boulding, economist<sup>10</sup>

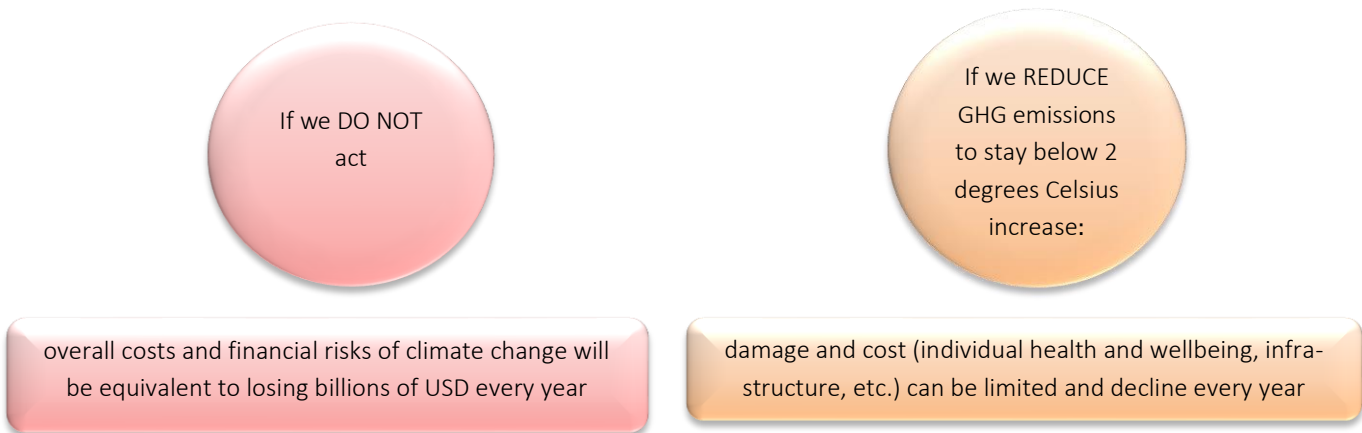


Figure 5, Costs and risks, modified<sup>9</sup>, Ivona Sak

Citizens and socially responsible and ethical corporations can collaborate and take a lead by doing the following:

- Make and request products and services that are environmentally and socially friendly
- Use energy and resource-efficient machines, techniques and technologies
- Comply with sustainability regulations and standards
- Support contacts and stakeholders to become conscious of and respectful for the environment and to people
- Be a leader and participate actively in the transformation of your city and your country towards sustainability.

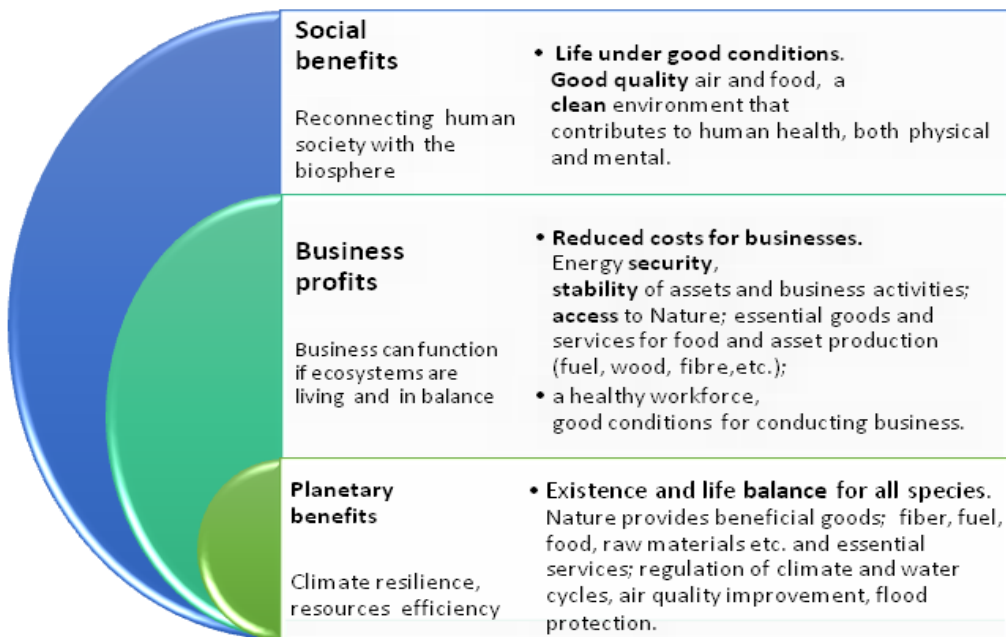


Figure 6, Benefits and profits, modified<sup>9</sup>, Ivona Sak

## 4.7 COLLECTIVE ACTION – WORK TOGETHER TOWARDS SUSTAINABLE DEVELOPMENT

*“GDP accounts for everything except that which makes life worthwhile.” - Robert Kennedy, 1968*

### 4.7.1 One Critical Issue

Related to Economic Growth we consider the most urgent issue is to explore and promote growth and prosperity within the Earth's limits, and **alternative ways to measure growth**, where economic growth is only a means and in which **wellbeing is the ultimate goal**.

We cannot have sustainable development as long as our progress in unlimited economic growth! A valid measure of growth must also consider the environmental and social costs that exist and are increasing.

### 4.7.2 How can we explore and promote growth and prosperity and alternative ways to measure growth?

There are several **groups and organizations discussing these issues**. At the end of this booklet we provide several steps you can take. Stay informed and participate in networks and discussions.

Discuss this booklet with friends and in groups, and please share this booklet on social media.

- Start or join a group on economic growth and wellbeing.
- Work for a change of path towards sustainable development: visit [The Economics of Ecosystems and Biodiversity \(TEEB\)<sup>11</sup>](#), global initiative focused on “making nature’s values visible..”, see [how to focus company's attention on sustainable decision making<sup>12</sup>](#).
- Join us on [Facebook](#) and participate in our [LinkedIn](#) group .Participate in conversations.
- Be part of the discussions.



## 5 DEVELOPMENT GOALS

### Sustainable Development Goals (2016-2030)

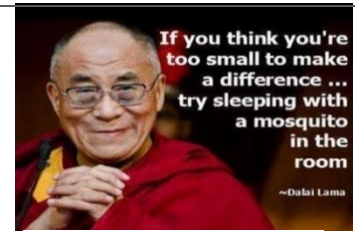


Figure 1, HH the Dalai Lama<sup>11</sup>

### 5.2 WHAT ARE THE SUSTAINABLE DEVELOPMENT GOALS?

#### 3.4.1 The Sustainable Development Goals, SDGs are our goals towards Sustainable Development.

The SDGs or the Agenda 2030, as they also are called, follow on the MDGs, the Millennium Development Goals 2000-2015. They cover all three dimensions; social, environmental, and economic development. See [Introduction](#). These three dimensions merge and become one circle with 17 goals, for a sustainable future (as the letter O in the first box below). This illustrated that the goals are interrelated, so that the success of one goal affects also the success of all the other goals. They guide development within the countries and also between countries. For a full list of the SDGs and the targets, see [here](#).



Fig.2, The SDGs

The SDGs are our roadmap for **the transition** towards a society based on inclusive social and economic development that respects and stays within the planetary boundaries; a society that is peaceful, safe, just and inclusive; “leave no one behind”.

The goals are divided into 3 themes, for crosscutting analysis. One theme will be highlighted at each annual review (see HLPF below):

**Empowering people and ensuring inclusiveness and equality:** SDG4, SDG8, SDG10, SDG13, SDG16, SDG17

**Transformation towards sustainable and resilient societies** SDG6, SDG7, SDG11, SDG12, SDG15, SDG17

**Eradicating poverty and promoting prosperity in a changing world** SDG1, SDG2, SDG3, SDG5, SDG9, SDG14, SDG17.

### 3.4.2 The Paris Agreement

The SDG 13 is Climate Action: **Take urgent action to combat climate change and its impact.**

This goal makes reference to the Paris Agreement COP 21 that took place 3 months after the SDGs were adopted.

The Paris Agreement consists of 3 major commitments:

- “(a) Holding the increase in the global average temperature to well below 2 °C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5 °C, recognizing that this would significantly reduce the risks and impacts of climate change;*
- (b) Increasing the ability to adapt to the adverse impacts of climate change and foster climate resilience and low greenhouse gas emissions development, in a manner that does not threaten food production;*
- (c) Making finance flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development.”*

The implementation of the Paris Agreement will be evaluated every 5 years, with **the first evaluation in 2023**. The countries have defined themselves with how much they intend to reduce their emissions (their **NDC, Nationally Determined Contribution**). The expectation is that the countries will increase their “contribution” at each evaluation event until globally we stay well below the 2 °C increase. The sum of initial NDCs from all countries leads to a temperature increase well above 2 °C.

## 5.3 THE BACKGROUND

### 5.3.1 How commitments to goals have moved the world

Since the Declaration of Human Rights was adopted by the United Nations in 1946, good experience was gained in how to achieve social development. See timeline of conferences below. As far as social development is concerned, *The World Summit for Children*<sup>2</sup> in 1990, was a milestone, when 72 heads of state and representatives met and agreed for the first time on **measurable, time-bound goals** for survival, health and education.



Fig 3. Timeline of global agreements building up to the Sustainable Development Goals. Blue boxes led to declarations with no goals were defined.<sup>1</sup>

<sup>1</sup> 1992, the [Earth Summit Agenda 21](#) was adopted, in 2012 [UN Conf. on Sustainable Development \(Rio+20\)](#)

These goals and targets for children were developed after identifying the most critical issues for development at that time, **and how to solve them**. Lifesaving medicines, vaccines and treatment were developed. Especially in low income countries this initiated a “social revolution”; health centres started to operate out in the most remote areas; national health and education structures and policies were developed for the first time. As a result, the lives of millions of children were saved and many started to go to school. With this, human capacities were developed and the base was laid that made possible, the rapid economic growth that has taken place over the last 20 to 30 years in most developing countries.



Figure 4, Camels bringing vaccine  
bigstockf9photos

Social development is something we make happen with research, social mobilization and commitments. Behind the successes there have been, at times, heroic efforts and sacrifices by individuals, leaders, community members, health workers, teachers, government officials, the UN and NGOs, in order to implement these policies in challenging environments. They are not always well known.

### 5.3.2 Challenges we face today

We have come a long way in social development. More than one billion people have come out of poverty since 1990 and more people have access to health and education. The aim has been to reach as many as possible. Now we have to take it further, to reach those who are left out. 1.2 billion<sup>6</sup> still live in extreme poverty, and inequalities are increasing within and between countries. There are enormous disparities of opportunity, wealth and power. As a result, we see increase in conflict, violence, extremism and humanitarian crises. Desperate and frustrated people are trying to migrate, some to the high income countries.

As we saw in Chapter 2, **Planetary Boundaries**, we already passed 4 of the boundaries in our ecosystem; beyond the limit nature is capable to recover, and in Chapter 1, **Climate Change**, we saw the consequences we and our planet confront if we let the temperature increase more than 2<sup>0</sup>C. The progress we have made is at risk. The 3 dimensions of sustainable development are disconnected! (See figures below). They should interact and strengthen each other.

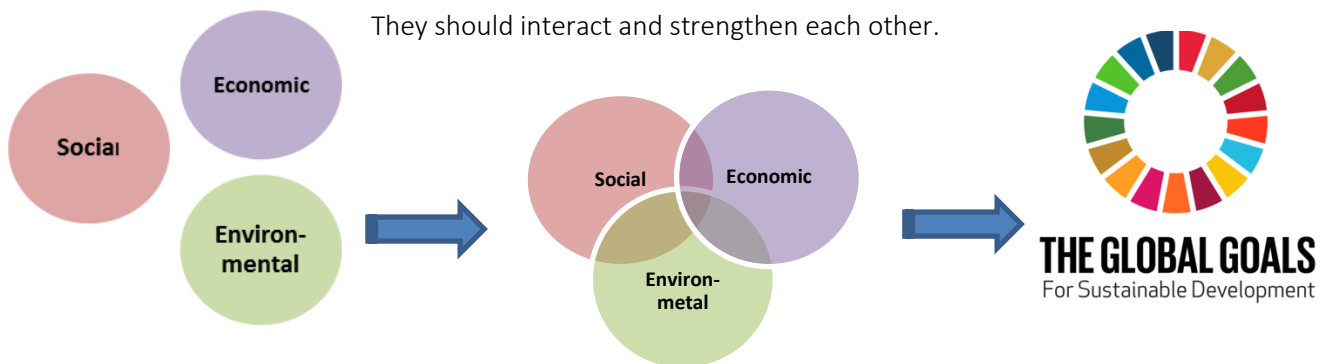


Figure 2, The 3 development dimensions are disconnected

The Brundtland Commission and the report Our Common Future, introduced the term “sustainable” already in 1987 but despite numerous conferences and commitments made, protection of the environment was not seen as a priority by governments, business and society in general.

**Economic development** has accelerated very fast since the start of the industrial era, but without taking into consideration the environmental consequences; rather to the cost of the environment.

We have the capacities; the resources and the experience to get it right, and we can all of us, live a better life, now and in the future, in a world that is just, equitable, inclusive and in balance with the nature we depend on. The Sustainable Development Goals present a valuable opportunity for that. All countries in the world have agreed to strive for their implementation, but we, the people have to follow up and see that it really happens. The SDGs were developed in a consultative, participative way. We have to keep that up and participate actively in the review and implementation of the goals.

## 5.4 HOW WERE THE SDGs DEVELOPED?

At the [United Nations Conference on Sustainable Development \(Rio+20\)](#), in Rio de Janeiro, Brazil, in June 2012, the world leaders adopted the outcome document "[The Future We Want](#)" in which they decided, to launch a process to develop a set of SDGs to build upon the MDGs, which run up till 2015.

Following extensive worldwide consultations with numerous working groups and conferences with civil society (13.000 organisations from 100 countries), governments, business communities, world experts and the *My World Survey* of 7 million people, a final proposal for the SDGs was presented and adopted by the UN member countries at the **UN General Assembly at the end of September 2015**.

## 5.5 FOLLOW UP OF THE GOALS

The SDGs are more than a set of goals; they are a roadmap for the transition towards sustainability. The world is now more globalized; we are connected through internet, an active civil society has evolved worldwide, and citizens in general can play an active role in development. We all have to be part of this transition.

The participatory approach for the development of the goals was a good start. The corporate sector and civil society should now in partnership with governments, participate actively for the planning, monitoring and implementation of the goals. Progress Reports should be prepared by each government and made public. This way we can all follow and contribute to what is planned and how the plans are progressing in our country.

The SDGs are not UN goals, as some people believe. They are global (our) goals, developed, adopted, and implemented by the countries of the world. The success of these goals will to a large extent depend on the active participation of civil society; people, individuals as you and me.

Progress of the SDGs is reported in July every year at [The High-level Political Forum, HLPF on Sustainable Development](#) at the UN. Governments sign up for these voluntary presentations. Different topics are selected every year for a deeper analysis. It is high level officials, often Ministers, who present, sometimes together with youth organizations. This is a good opportunity for countries to share experience and stimulate each other to increase their targets.

The HLPF is participatory. Organizations can register with the UN as part of what is called "[major groups and other stakeholders](#)". It is also possible for anybody, to follow the sessions on-line.

## 5.6 FUNDING FOR THE SDGs

Implementation of the goals should be financed by public as well as private sources. There are trillions of dollars of **private resources**, investment funds, pension funds and other funds that can be invested in sustainable development goals and targets. Sustainable development also offers good business opportunities for the corporate sector. Long-term investments are required in critical sectors, especially in developing countries.

As for **foreign aid**, high income countries should meet the 0.7% target of development assistance that they have committed long back (it is now only 0.3%) and a more equitable multilateral trading system should be introduced.

See further **Addis Ababa Conference**, below

As for Climate Change, high income countries have committed to contribute jointly **\$100 billion annually by 2020** to a **Green Climate Fund** for developing countries and their work to prevent climate change. This fund is developing very slowly. In 2017, 19 projects were under implementation, totaling only USD 633 million in GCF resources.

## 5.7 GLOBAL AGREEMENTS IN 2015

The year 2015 will go to history as an important year, when the SDGs were adopted, a Climate Change agreement finally signed and the financing for development defined.

This represents unique opportunities to **redirect the trends towards social, economic and environmental sustainability**. The challenge is now to ensure they are implemented. We, the people, have to see that this happens! Drastic measures are required!

[International Conference on Financing for Development<sup>8</sup>](#) in Addis Ababa, July 2015: to agree on how to finance sustainable development.

[Special Summit on Sustainable Development<sup>9</sup>](#) at the UN General Assembly, September 2015; the Governments of the world agreed on the Sustainable Development Goals, a shift of direction for people and planet.

[21st Conference of the Parties \(COP21\)<sup>10</sup>](#) of the UN Framework Convention on Climate Change in Paris, December 2015; **agreements and negotiations to change the devastating environmental trends** (to stay below the 2°C increase).

## 5.8 WHAT CAN WE DO?

**Promote decarbonization, follow and contribute to the progress of the SDGs and the Paris agreement, and request their full implementation.** All countries will, develop a Sustainable Development Strategy and Plan, a legal framework and an annual SDG Progress Report will be prepared and made public.

The Sustainable Development Goals are our shared framework and common targets to achieve sustainable development. Most people have not even heard of the SDGs and these conferences that should be followed up closely also by media. What do the leaders suggest, what do they agree on? Is it enough?

- Share the information on the follow up of these conferences on social media, increase the interest and try to “**wake up**” the newspaper and television producers, and all those who are still asleep, stuck doing business as usual!
- Share and discuss this booklet with friends and groups.
- Build and join networks on the Climate agreements and the SDGs
- Join, or why not, become a member of [‘it is about us’](http://www.itisaboutus.org). [www.itisaboutus.org](http://www.itisaboutus.org).
- Join us on [Facebook](#) and [LinkedIn](#) and share your experience.

### *A call for action to change our world*

*“Ours can be the first generation to succeed in ending poverty; just as we are the last to have a chance of saving the planet.”* The Road to Dignity by 2030<sup>4</sup>

## CONCLUSION AND ACTION

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In six chapters we have given a basic background on environmental, social and economic development. We have presented facts, challenges, opportunities and most important suggestions for action.

Over the last 50 years we have made fantastic progress in many areas but our planet is in a bad shape. The ecosystem is out of balance; air, water, oceans are being polluted, forests cut down, living species extinct and the climate is changing with devastating consequences. We have extreme poverty and extreme wealth, increasing frustration, migration, violence and war.

We wrote this booklet because we are convinced we can turn this around, save the planet, continue to progress and be healthy in a more sustainable and just world, leaving no one behind; a world free of poverty, hunger and disease and where all life can thrive; a world in which humanity lives in harmony with nature and nature can continue to provide services to humans and to all other living species.

We face the most serious challenges humankind ever confronted. Governments will play an important role for the transition to a new era of sustainability, but **the success will to a large extent depend on us** as individuals; that we actively participate, request, suggest, and ensure it happens in our communities and beyond. Internet and social media opens new possibilities to communicate and mobilize at local and global levels.

We conclude this booklet by putting **the critical actions** together. These are actions we are not accustomed to take but they address in a strategic way key issues for the deep change we need. Our action is urgent; it is about saving the planet and ourselves. We must get our CO<sub>2</sub> emissions to 0 by 2050, we must adopt a sustainable lifestyle and stay within the planetary boundaries, and we must get our economic system right and eradicate extreme poverty.

Our own way of living is of course very important. The collective critical actions below are followed with suggestions on **what we can do in our daily life**. It is not enough to save the sick person you must also ensure the person

stays healthy. We are more than 7 billion people on this planet. We have to start to live like one family, respecting each other; ensuring that there will be enough and a fair share for everybody and that the house is well in order.

## 1. Collective Action towards Sustainable Development

During the consultations for this booklet we were asked for the 6 most critical actions to take for sustainable development right now.

All chapters in this booklet are interlinked since they represent the 3 components of sustainable development, social, economic and environmental development, and each chapter conclude with **one critical issue** for our collaborative action for **achieving sustainable development**:

1. The most important issue in *Climate Change* is to **stay below the 1.5- 2°C increase in temperature**, since it affects all other sustainability issues. See Chapter 1, How can I help decarbonise the planet.

2. The critical issue we suggest for *Planetary Boundaries* is to ensure sustainable consumption and production patterns. We propose to promote and practice **sustainable consumption**, and convince others to do the same. Request and buy certified products. Promote introduction of certification if not available.

3. For *Poverty and Social Inclusion* the overarching aim is to **leave no one behind** and the most critical issue we suggest in this chapter is that all children, especially girls and children living in poverty, can access and conclude at least secondary education.

Follow progress and trends, and take action for inclusive education in your community and in your country in a way that is possible for you.

4. In the *Sustainable Cities* chapter we saw how the three dimensions- social, environmental and economic development, are interlinked in a sustainable city. Cities can be **drivers for sustainable development**. The critical issue action we suggest for sustainable cities is to **develop a culture of sustainable lifestyle**. Be a leader for sustainability, join your peers and develop and spread an inclusive, sustainable life style and culture.

5. *Economic Growth*. Progress is currently measured in economic growth (GDP), that does not consider sustainability and social and environmental costs. The consequences are leading us in an unsustainable direction. A critical issue is to explore and promote **alternative measures of progress** where economic growth is only a means and **wellbeing the final goal**. We suggest you join groups and networks, **engage yourself in the discussion and share your insight and concern in our [Facebook](#) and [LinkedIn](#)**.

6. The *Sustainable Development Goals (SDGs)* are the goals and targets towards sustainable development to be achieved by all countries, rich and poor over the next 15 years.

We should all take the **SDGs** as the framework for global and national development, promote its implementation, follow progress, and question delays in implementation. In Annex II you find references to websites for SDG Plans and Progress.

Please, discuss and share this booklet with friends and on social media.

We also look forward to discussing these issues and the booklet with you in [Facebook](#), become a member of our [LinkedIn](#) Group.



## 2. What Can I Do, In My Everyday Life?

We were also asked for suggestions for applying sustainable practices to everyday life. You have probably seen some of these before, but we all must continue to work on them so they become part of our culture.

- **Reduce, reuse, recycle.** Reduce greenhouse gases that are produced when extracting/growing, manufacturing, and disposing of new products
- **Use water efficiently.** Water your land and garden as little and as efficiently as possible; repair leaks and do not let water run while washing the floor, shaving or brushing teeth. Take short showers. Limiting water use, particularly by taking shorter showers, reduces energy consumption from pumping, treating, and heating the water.
- **Balance your diet and do not waste food.** When people throw away food, all the resources that have been used to grow, ship, package and process that food are wasted, including the massive amounts of water involved in the process of growing, producing and transporting food. **For meat lovers, have meat free days in the week. Discover great vegetable dishes and eat locally grown food.**
- **Turn off the vehicle motors when stopping for more than 2 minutes. Try to use fuel-efficient, low-greenhouse gas vehicles** and public transportation. Walk or bike when possible. Leaving your car at home just two days a week can reduce your greenhouse gas emissions by an average of two tons per year. For longer distance travel, it is better to take a train than it is to take a bus or a plane.
- When shopping and at work/school, ask people, when relevant to produce **less waste** and to use less packaging, especially **plastics**.
- **Improve the heating and /or cooling systems in your home, use low energy bulbs and low energy machines. Remember to turn off equipment when it is not in use.** Use a minimum of energy and ask shops, buses, public buildings to do the same. Have your heating and/or cooling equipment maintained, and remember to seal and insulate your home (research double glazed windows in cold climates).
- Please add your own suggestions.

**We hope this booklet has inspired you,** that you will join us to take action, that you will share the booklet and your insight with others and become a leader for sustainable development in your society. Together, we can save the planet and continue to progress. It is urgent, it is human and it is what we want. The future is in our hands. Nobody will do it for us. We must act and act now!

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  12. [https://www.ted.com/talks/ray\\_anderson\\_on\\_the\\_business\\_logic\\_of\\_sustainability](https://www.ted.com/talks/ray_anderson_on_the_business_logic_of_sustainability)

## Chapter 6. MDGs, SDGs

1. Millennium Development Goals. <http://mdgs.un.org/unsd/mdg/Host.aspx?Content=Indicators/OfficialList.htm>
2. <http://www.unicef.org/specialsession/about/world-summit.htm>
3. Millennium Development Goals Report 2015. [http://www.un.org/millenniumgoals/2015\\_MDG\\_Report/pdf/MDG%202015%20rev%20\(July%201\).pdf](http://www.un.org/millenniumgoals/2015_MDG_Report/pdf/MDG%202015%20rev%20(July%201).pdf).
4. UN Secretary General's Synthesis Report. 4 December 2014. The Road to Dignity by 2030, [www.un.org/en/development/desa/publications/synthesis-report.html](http://www.un.org/en/development/desa/publications/synthesis-report.html)
5. Sustainable Development Goals: <https://sustainabledevelopment.un.org/sdgsproposal>
6. World Bank. Poverty: <http://www.worldbank.org/en/topic/poverty/overview>
7. Transforming Our World, the 2030 Agenda for Sustainable Development <https://sustainabledevelopment.un.org/topics>
8. International Conference on Financing for Development in Addis Ababa in July, 2015. Adopted outcome document, [http://www.un.org/esa/ffd/wp-content/uploads/2015/08/AAAA\\_Outcome.pdf](http://www.un.org/esa/ffd/wp-content/uploads/2015/08/AAAA_Outcome.pdf)
9. Special Summit on Sustainable Development at the United Nations in September, 2015, <https://sustainabledevelopment.un.org/post2015/summit>
10. 21st Conference of the Parties (COP21) of the UN Framework Convention on Climate Change in Paris in December, 2015, <http://www.cop21paris.org/>
11. Picture. His Holiness the Dalai Lama, [tibet.net](http://tibet.net)

## ANNEX II: INTERESTING WEBLINKS

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For your convenience we have made a list of web links related to sustainable development and to the chapters in **Take action, enter a new era**. They are interesting sites that you might use for more information and to get new contacts but we do not endorse any of these organizations or their work, the authors of **Take action, enter a new era**, are not professionally linked to any of them.

### Chapter 1. Climate Change

- [http://www.afd.fr/lang/en/home/projets\\_afd/AFD-et%20environnement/changement\\_climatique/60-solutions](http://www.afd.fr/lang/en/home/projets_afd/AFD-et%20environnement/changement_climatique/60-solutions)
- <http://www.epa.gov/climatechange/kids/index.html>, <http://www.epa.gov/climatechange/>
- A US EPA calculator, Carbon Footprint Calculator | Climate Change | US EPA [www3.epa.gov/carbon-footprint-calculator/](http://www3.epa.gov/carbon-footprint-calculator/)
- Global warming is not merely a problem. Fotoexhibition with 60 opportunities. [http://www.afd.fr/lang/en/home/projets\\_afd/AFD-et%20environnement/changement\\_climatique/60-solutions\\_](http://www.afd.fr/lang/en/home/projets_afd/AFD-et%20environnement/changement_climatique/60-solutions_)

### Chapter 2. Planetary boundaries

- UNEP and the sustainable consumption/production programme, 10YFP, <http://www.unep.org/10yfp/Programmes/ProgrammeConsultationandCurrentStatus/Sustainablelifestylesandeducation/tabid/106266/Default.aspx>
- <http://www.stockholmresilience.org/21/research/research-programmes/planetary-boundaries.html>
- <http://blog.ted.com/the-future-of-the-sustainable-earth-johan-rockstrom-at-tedglobal-2013/>
- <http://www.sustainablebrands.com> and <http://leonardodicaprio.org>

### Chapter 3. Poverty and Social Inclusion

- Girls' Education Initiative, <http://www.ungei.org/>
- <http://www.odi.org/programmes/growth-poverty-inequality>

### Chapter 4. Sustainable Cities

- A case: Istanbul <http://www.sustineoistanbul.com>
- Leading Sustainable Cities, <http://www.fastcoexist.com/3016816/the-10-cities-that-are-leading-the-way-in-urban-sustainability>
- <http://www.charterforcompassion.com>
- <http://www.fastcoexist.com/3016816/the-10-cities-that-are-leading-the-way-in-urban-sustainability>

### Chapter 5. Economic Growth

- <http://sustainable-economy.org/> "... environmental economics think tank
- <http://www.un.org/en/sections/priorities/economic-growth-and-sustainabledevelopment/index.html>.
- <http://www.humansandnature.org/sustainability--well-being--and-economic-growth-article-116.php>

### Chapter 6. Millennium Development Goals and Sustainable Development Goals

- Sustainable Development Platform UN, <https://sustainabledevelopment.un.org/index.html>
- <https://sustainabledevelopment.un.org/topics/sustainabledevelopmentgoals>

### Inspirational webs and TED Talks, Action groups and Free media alerts:

- [https://www.ted.com/talks/lord\\_nicholas\\_stern\\_the\\_state\\_of\\_the\\_climate\\_and\\_what\\_we\\_might\\_do\\_about\\_it](https://www.ted.com/talks/lord_nicholas_stern_the_state_of_the_climate_and_what_we_might_do_about_it)
- [https://www.ted.com/talks/pavan\\_sukhdev\\_what\\_s\\_the\\_price\\_of\\_nature](https://www.ted.com/talks/pavan_sukhdev_what_s_the_price_of_nature).
- Avaaz, <https://www.avaaz.org/en/>
- End Eccocide on Earth, <http://www.endecocide.org>
- 350.ORG, <http://350.org/>
- <http://www.huffingtonpost.com/news/climate-change/>
- <http://www.theguardian.com/uk/environment>

### Institutions/Universities:

- <http://www.yaleclimateconnections.org/>
- <http://www.earthinstitute.columbia.edu/sections/view/9>

### Organizations mobilizing for change in social, economic and environment space:

- <http://storyofstuff.org/>
- <https://solutions.thischangeseverything.org/>

## ANNEX III: PRESENTATION OF AUTHORS

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“Take action, enter a new era” is in itself a proof that it is possible to join forces with people from around the world and mobilize for the future we want. The authors of this booklet come from 5 different countries, are of different ages, cultures and backgrounds and have never met personally. They connected through the MOOC course, The Age of Sustainable Development set up by Columbia University and Professor Sachs. This course and the book with the same title ([see here](#)) give an excellent orientation on sustainable development. **Take action, enter a new era** builds on that course combined with the rich professional experience of each one of the authors. **Take action, enter a new era** is a call for action for a future of wellbeing for us, the humans, and for the planet we love and depend on.



**Ann-Lis Svensson** (Sweden) is the Founding Director of Rio Monte, an organization dedicated to partnership for sustainable development and poverty reduction.

Between 1992 and 2007 Ann-Lis was the UNICEF Country Director, representing the UN in various countries in Asia, Latin America, and Europe. As member of top management in the UN, in large development corporations, and as director within international NGOs and the Swedish international development cooperation, SIDA, Ann-Lis played a direct and active role in social development that has taken place over the last 30 years.



**Ayşe Sakar** (Turkey/Canada) has a BA in economics. She has worked in the finance and accounting field in Turkey and Canada for 25 years. While working in the finance sector, she has followed new economic trends and world issues. For the last four years, she has been studying about sustainable development and solutions for better living conditions for all.



**Carolina Hoyos** (Colombia) comes from a family that filled her with love for nature and the living world. She graduated as a microbiologist and after some years in Colombia, she decided to continue her studies in France - her “host and friendly country” as she calls it. She has devoted herself to study environmental sciences, getting a Masters and a PhD in the field. Today, she works as a research engineer looking for sustainable solutions to pollutants and waste spending much of her time in inaccessible places for most people. Carolina says she is never happier than when immersed in nature to understand its infinite wisdom.



**Eugenia Arribas** (Spain) has a degree in Hotel Management by the Lausanne Hotel School (CH). After decades of traveling around the world working for tourism, and acquiring entrepreneurial, management and coordination skills in various private sectors, she specialized in Sustainable Tourism Development and International Cooperation at the George Washington University together with the World Tourism Organization (UNWTO). She is a believer of the wellbeing for all and works towards that goal.



**Ivona Sak** (Poland) is a creative expert in the brand, corporate responsibility and sustainability areas, with more than 10 years' experience in advertising. She works with organizations across the sustainability ecosystem, including Global Reporting Initiative, that are looking to align their brand proposition with creating a better world, in pursuit of creating products that people can trust and buy. Ivona is a practitioner with solid knowledge and more than 15 years' experience in business as Managing Director, Director of NGO's, and member of Board of Directors.