

Chapter I

Building Sustainable Societies – the Human Dimension

1.1 How many people can the Earth support – population growth

Fear for unending population growth – the population explosion – has since long been a main concern for those thinking about the future of humanity. The Englishman Thomas Malthus in *An Essay on the Principle of Population* from 1798 alarmed the world that food and other resources soon would not be enough for everyone and started a serious discussion on which political actions were needed to curb population growth. Today this discussion seem to be most active in the United States, where environmental impact is much perceived as the result of being too many, not that each one uses too much resources.

During most of human history world population grew very slowly. On average a woman during her short life got 6 children of whom 2 survived to adulthood. These in turn reproduced to get two children etc. The number of children per fertile woman is called *fertility rate*. For constant population the fertility rate should be 2.1, called *replacement rate*. This was close to the value for the human race for most of our history. But from about 1700, the beginning of industrialization, it started to grow dramatically. Family size became much larger and the population explosion became a fact. From the 18th century global population growth accelerated, with shorter and shorter doubling times, 1 billion in 1800, 2 billion in 1927, 4 billion in 1974 and 7 billion in 2011 (Table 1.1).

Population in the world is currently growing at a rate of around 1.14% per year. The average population change is currently estimated at around +80 million per year. But it is declining. Annual growth rate reached its peak 2.19% in 1963. It is currently going down and projected to continue to do so. It is estimated to be less than 1% by 2020 and most experts expect it to end by about 2050 at a world population of 9-11 billion. However other results have also been published. According to UN Population Division world population will reach about 10.9 billion in 2100 and continue growing thereafter. Other experts dispute that and find that birth-rates will fall below replacement rate in the 2020s. Population growth will continue to the 2040s by rising longevity but will peak below 9 billion by 2050.

Table 1.1 Highlights in world population growth (Source <http://www.worldometers.info/world-population>)

0.2 billion in	year 0 (estimate)
1 billion in	1804
2 billion in	1927 (123 years later)
3 billion in	1960 (33 years later)
4 billion in	1974 (14 years later)
5 billion in	1987 (13 years later)
6 billion in	1999 (12 years later)
7 billion in	2011 (12 years later)
8 billion in	2024 (13 years later; according to UN estimates)

A most entertaining and informative film on population growth is *Don't Panic* by Hans Rosling at Gapminder.

Will the resources of the world be sufficient for 9 or so billion inhabitants? Is the *carrying capacity* enough? Most researchers believe that enough food for all will be possible. One will however have to decrease food loss, and improve agricultural productivity in many areas, not the least in Africa. However, we see land prices increase steeply in many parts of the world as an indication that the food production issue is expected to be critical.

1.2 The population transition

A generation or two ago the so-called developing countries had many children per fertile woman often about 6, and a population growth approaching 3%, while in developed, industrialised countries the figure was closer to 2.1 children, i.e. the replacement rate. Since then a dramatic change has taken place. Especially in Asia, birth rates of many countries have dramatically decreased. High birth rates today only remain in Africa (Figure 1.1). In all of Europe the birth rates are lower than replacement rate and in some countries much lower, e.g. in southern Europe (Figure 1.2). In Central and Eastern Europe population decline is typical both because of low birth rates and emigration. In Europe thus the development has already come to peak population and in fact population would be decreasing faster if not for immigration.

The reduction of fertility is a universal phenomenon, but occurs at different rates in different countries. Fertility patterns are closely linked with social and cultural norms and family structures. A change in fertility requires a dramatic

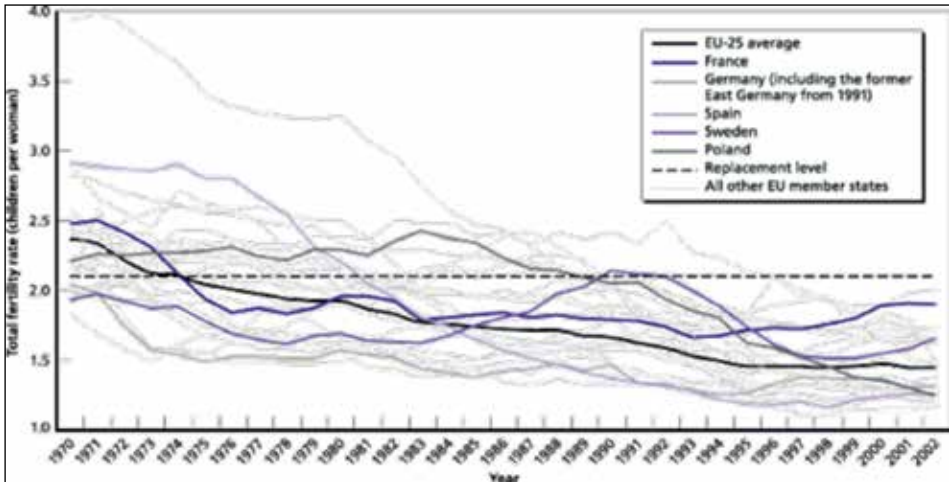


Figure 1.2 Fertility rate development in Europe. (Source: Europe – Population Decline in European Cities <https://jellyfishkunn.wordpress.com/2012/10/26/blog4-europe-population-decline-in-european-cities/>)

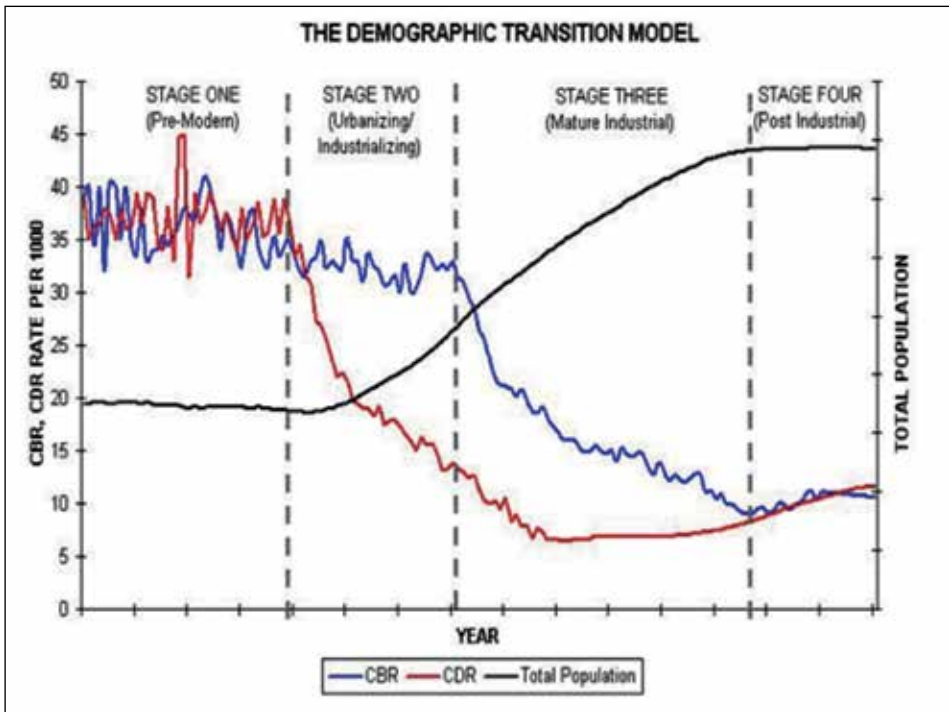


Figure 1.3 The demographic transition. (Source Keith Montgomery. <http://pages.uwc.edu/keith.montgomery/Demotrans/demtran.htm>)

shift in social structures and in mentality, notably in the status of women, which plays an important role in the determination of fertility patterns.

Thus in individual parts of the world this development from a small population to exponential growth to finally levelling off at a higher level has already taken place. It is called the *population transition* (Figure 1.3). It begins when health improves, life expectancy increases and birth rate dramatically decreases. After some time family size will shrink. An important reason for this is decreasing child mortality. It will thus not be necessary to have many children to be taken care of at an older age; as children go to school, they are also more a cost than a help in the household; and finally that families choose to have fewer children for improving their own lives. Of course basic family planning means have to be available to make these changes possible. These insights also point to what is needed to curb population growth.

Why then, if the fertility rate is no longer larger, why does world population continue to increase? This is a consequence of the population composition. Most people in the world are children; they will grow up and have children in turn. But not more than two and for this reason the number of children in the world will not increase. We have come to peak child. But the number of adult will increase since children will grow up and have a longer life than before.

The situation in Uzbekistan is described in Table 1.2. As we can see the demographic transition is a fact also here. After 2008 the fertility rate is below replacement. As expected the population is still increasing but rather slowly – at present by 0.93%.

In individual countries *migration* is in many cases very important, and contributes much more to population increase or decrease, than birth rates and mortality. Thus in many parts of Central and Eastern Europe populations are decreasing because of *emigration*. For example more than a million Polish citizens have moved to UK to find work. On the contrary, the *immigration* to the Nordic countries, especially Sweden, and Germany is large. For Sweden in 2014 it was 70 000, mostly refugees from the Middle East. To be compared to the entire population of just less than 10 million.

Table 1.2 Top row Population growth and bottom row fertility rate (number of children per fertile woman) in Uzbekistan. Source: <http://www.indexmundi.com/g/g.aspx?c=uz&v=24>.

2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
1.6	1.6	1.62	1.63	1.65	1.67	1.7	1.73	0.97	0.94	0.94	0.94	0.94	0.94	0.93
3.09	3.06	3.03	3	2.97	2.94	2.91	2.88	2.01	1.95	1.92	1.89	1.86	1.83	1.8

The migration in the world is today larger than it has been since the end of World War II, spurred by conflicts in the Middle East and in Africa, and countless numbers of refugees.

1.3 The aging society

An effect of improved health status of the population is that *life expectancy* is increasing. Life expectancy at birth globally was 68.3 years in 2010. Japan had the largest life expectancy in the world of 82.6 years. In many African countries is around 40 years. In Sweden in 2011 life expectancy at birth was 83.7 for women and 79.8 for men (Table 1.3). Life expectancy is increasing with about 3 months per year in Europe, mostly because mortality at higher age is decreasing. Life expectancy was only 39.4 years in 1880, but increased to 68.2 years by 1950 – an increase of 28.8 years. In the subsequent 40 years, life expectancy went up only a further 7.2 years (Figure 1.4).

If this continues living to 100 years of age will be common in the near future. But there are signs pointing to a possible halt of this development. Public health is decreasing in many countries. Main reasons include obesity, diabetes, and cardiac arrest, all consequences of changing living styles and eating habits.

One or two generations ago in all societies there were typically very many more young people than elderly. The population pyramid had a large base and a thin top. Today this is true only for some poor countries (Figure 1.5).

As a sustainable society in the long term cannot have a steadily increasing population, we will have an *ageing society*. A much larger share of the population will be retired, that is, older than retirement age, in many countries around

Table 1.3 Life expectancy at birth 2011 – from the top 20 (Source CIA Factbook 2011)

Japan	83.91
Singapore	83.75
Hong Kong	82.12
Australia	81.90
Italy	81.86
Canada	81.48
France	81.46
Spain	81.27
Sweden	81.18
Switzerland	81.17

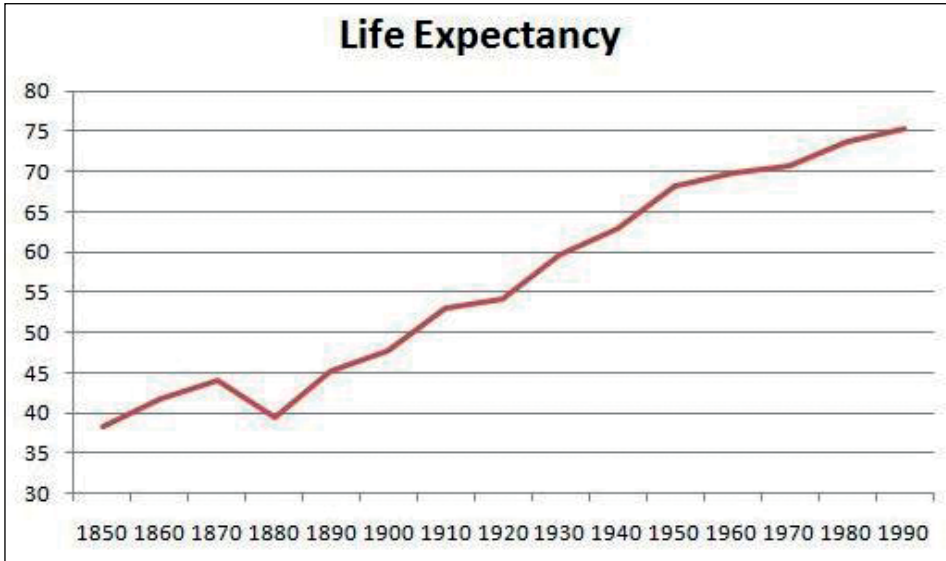


Figure 1.4 Life expectancy in EU. The greatest improvements in mortality occurred between 1880 and 1950. Here is life expectancy at birth between 1850 and 1995 (series Ab644):

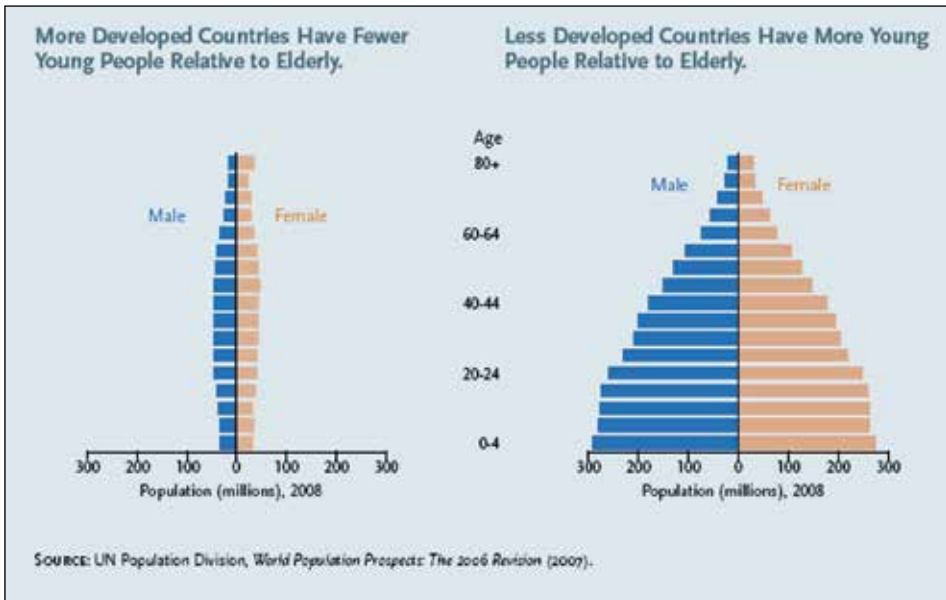


Figure 1.5 Population pyramids for more and less developed countries. (Source: The UN Population Division)

65. A common heard concern is that fewer (in working age) will have to support many more (retired). Another concern is that costs for elderly care will increase dramatically. Very few countries have a policy to manage this question; many governments rather stimulate families to have more children or support immigration. But this is only to postpone the problem, which will reappear but at a much higher total population. We will finally be in a situation when fewer in working age will have to support many more in retirement.

Some argue that it may not be a problem. According to macroeconomic modelling the average working hours in a sustainable economy should decrease substantially compared to the norm today. We will not need so many working hours!

So how then can elderly contribute in a sustainable society? Earlier this was not a problem at all. When state guaranteed pensions were introduced the retirement age was equal to average life expectancy, that is, pensions were not a large cost for the country. Today the pension age is debated. Typically people stay healthy many years into retirement. Therefore some think pension age should be much higher, at least 70. There are efforts to encourage elderly to stay at their working places voluntarily, often on part time and with less heavy jobs.

Others see that healthy elderly may contribute voluntarily. Elderly, who has a considerable experience, may help young people voluntarily. Examples include business angels, elderly business leaders helping younger to get started. We have also seen healthy elderly taking care of less healthy elderly. It seems clear that in a future sustainable society the so-called voluntary sector will be larger and more important than today.

In some countries we start to see one more demographic phenomenon: The gender balance changes. Human populations always have a surplus of boys, since there are more boys born, about 107 boys to 100 girls. But at higher ages this changes to its opposite. This is because adult males tend to have higher death rates. The reason includes more frequent accidents, more heart failures etc. Thus, even if there are proportionally fewer girls than boys born, at higher ages women were in excess. But because of much better health care in some countries we now start to see that the life expectancy of men and women are almost exactly the same, and then at older age there are more men than women.

1.4 Human welfare and dignity

We need to discuss not only how many people the planet can support but also how we all can lead a decent life. After the atrocities of the Second World War an intense discussion began on how to establish general principles for a dignified hu-

man society and acceptable human conditions. The most important result of these efforts was the United Nations Universal Declaration of Human Rights adopted by the UN General Assembly in 1948. It serves as a document establishing which values should not be violated regardless of circumstances.

The General Declaration of Human Rights have been followed by several other documents e.g. on children's rights, workers' rights etc. The UN system has thus played, and still plays, an important role in establishing a global ethics.

There were however forerunners to this development. These include most importantly The American Declaration of Independence of 1776 and the manifests of the French Revolution of 1789. The Declaration of Independence says that "all men are created equal, that they are endowed by their Creator with certain inalienable rights that among these are Life, Liberty and the pursuit of Happiness". Each human individual should thus be respected and his/her integrity protected regardless of physical, ethnic or social belonging. In various documents, most importantly the Universal Declaration of Human Rights, we have established

- religious freedom (right of belief)
- political freedom (right of speech);
- sexual freedom
- equal rights between genders
- equal rights between different ethnic groups and
- equal rights for minorities

Human rights have not been implemented fully in any country, and differences between countries are large. Especially it should be mentioned that minority rights are violated repeatedly as majority groups attempt to secure their own power and privileges, which in worst case can lead to ethnic cleansing. Gender rights are violated in many cultures where it is not customary that women decide for themselves, for their future, choice of husband or profession, and violence against women are common. The respect of the UN Convention of human rights is surveyed by the Human Right Committee of the United Nations or in Europe by the Council of Europe. However these institutions do not have power to follow up complaints about violations of human rights.

The responsibilities of the governments for protecting human rights of their inhabitants have been spelled out in the International Covenant on Economic, Social and Cultural Rights (ICESCR), which went in force 1976. The Covenant commits its parties to work toward the granting of Economic, Social, and Cultural Rights (ESCR) to individuals, including labour rights and the right to health, the right to education, and the right to an adequate standard of living. In 2011, the

Covenant had 160 parties. The covenant should be seen as a political agreement on basic duties of a modern welfare state.

1.5 The millennium development goals

The next major effort to stimulate the implementation of acceptable conditions for the human population, the eight so-called millennium development goals, MDGs, was established by the United Nations in year 2000, to be achieved in year 2015 (Table 1.4). The MDGs set a description of which kind of world would we should strive to build. Today, in 2015, the results of 15 years of efforts to reach these goals start to be seen. It is clear that there is a mixed success.

The MDGs are eight quantifiable goals to improve the life for the poor of the world. They should be able to live a life that is considered self-evident for most of us: not to be hungry, go to schools and have access to clean water.

Goal 1: “The proportion of people living in extreme poverty should be halved at the global level.” The proportion of people living in extreme poverty has been halved at the global level. The world reached the poverty reduction target five years ahead of schedule. In developing regions, the proportion of people living on less than \$1.25 a day (the extreme poverty level) fell from 47% in 1990 to 22% in 2010. About 700 million fewer people lived in conditions of extreme poverty in 2010 than in 1990. Still close to 1.4 billion people live in extreme poverty.

Goal 2: “Achieve universal primary education.” Between 2000 and 2011, the number of children out of school declined by almost half – from 102 million to 57 million. However, progress in reducing the number of children out of school has slowed considerably over time. Stalled progress means that the world is unlikely to meet the target of universal primary education by 2015. 42% of children out of school live in countries of conflict. To be poor, live in a conflict area or being a girl increases the risk of growing up without education.

Table 1.4 Millennium Development Goals

Goal 1:	Eradicate extreme poverty and hunger
Goal 2:	Achieve universal primary education
Goal 3:	Promote gender equity and empower women
Goal 4:	Reduce child mortality
Goal 5:	Improve maternal health
Goal 6:	Combat HIV/AIDS, malaria and other diseases
Goal 7:	Ensure environmental sustainability
Goal 8:	Develop a global partnership for development

Goal 4: “Reduce child mortality.” Worldwide, the mortality rate for children under five dropped by 41% – from 87 deaths per 1,000 live births in 1990 to 51 in 2011. Despite this enormous accomplishment, more rapid progress is needed to meet the 2015 target of a two-thirds reduction in child deaths. Increasingly, child deaths are concentrated in the poorest regions, and in the first month of life. Child mortality has decreased from more than 12 million in 1990 to 6.9 million in 2011. Thus 14,000 fewer children die each day. Successes are due to vaccination programs, treatment for malaria, and access to clean water, to mention some main factors.

Goals 3 and 5: These address the situation of women in the world; they will not be reached. In general the situation of women seems to be a less important area for very many countries.

Goal 7: This goal is the only one which addresses expressly the protection of the environment. This goal will not be met. In particular the protection of the world’s climate has been a failure.

In spite of these misgivings the MDGs have been perceived as a success. This is very much the result how the goals have been defined and follow up. There have been indicators to quantify the goals and a request to report these indicators. The reports are published worldwide. The total results have been an inspiration for governments to work on the goals to be able to successfully compete with the rest of the global society.

1.6 The role of the state – democracy and peace building

How should a society be organized politically to approach sustainability? The basic document, which addresses this question, is the Agenda 21 from the 1992 Rio UNCED Conference. Here the importance of democracy, with participation and involvement of all stakeholders in a society, is underlined. *Participatory democracy* is thus seen as the political system under which it is possible to approach and govern a sustainable society. Democracy is also the system, which more than other systems guarantee the human values described in the Universal Declaration of Human Rights. There are good reasons to choose democracy. Historical experience shows that strongly centralised authoritarian systems sooner or later disregard environmental protection, good resources management and human rights to protect its own power. Examples of such mismanagement are to be found both in history and in present regimes all around the world.

Democracy as a social invention has a long history but modern democracies did not exist until about 100 years ago. Since then, with setbacks under the first

and second World Wars, as well as in connection with the decolonisation in the 1960s and early 70s, democracy has been introduced in a growing number of states. Today more than half of the world population live in formal democracies with universal suffrage. Difficulties when going from an authoritarian system (autocracy) to democracy includes that the citizens should take responsibility, even if there is no such tradition and many rather want a “strong leader” to take care of them. On the way to democracy to reduce corruption is typically a slow and difficult process, while free media is often in the forefront.

For sustainability democracy design is crucial. The traditional *representative democracy*, limited to voting, has not been able to respond to all demands of sustainable development. It lacked the elements of participation, listening, mutual understanding and changing views in the political process, which is present in *participatory* or, more often, *deliberative* democracy. This on the other hand characterises *governance*. Governance asks for less bureaucracy and an increased distribution of responsibilities of realisation, economy and maintenance in societal issues; it is more entrepreneurial, stresses competition, markets and customers, and measures outcomes. This transformation of the public sector, the authorities, may be summarized as *less government but more governance*.

Democracies vary in distribution of power between the local and central levels. Sustainability politics typically stresses the role of the local level, and has *Local Agenda 21* as the basic document. To be successful the local level needs three competences: legal, economic and expertise. The local level should thus have enough power to regulate on the local level, exemplified by the planning monopoly, enough economic strength to execute necessary reforms, which requires a strong local taxation, and finally the expertise needed to monitor and plan for a sustainable future. City networks such as the European Sustainable Cities and Towns Campaign asks for a strong local level development and the role of good governance, illustrated by the Aalborg commitments.

Democratic government and implementation of the principles of democracy has been monitored in various ways. A most interesting and relevant report is published by the World Justice Project, WJP, as an “effort to strengthen the *rule of law* for the development of communities of opportunity and equity”. The rule of law includes four principles: that government and its officials are *accountable* under the law; that the *laws are clear*, publicized, stable and fair; that the process by which the laws are *enforced* is accessible, fair and efficient; and that *access to justice* is provided by competent, independent, and ethical adjudicators. A less detailed report on the rule of law is the Transparency International’s list of degree of corruption in states. This list appears every year.

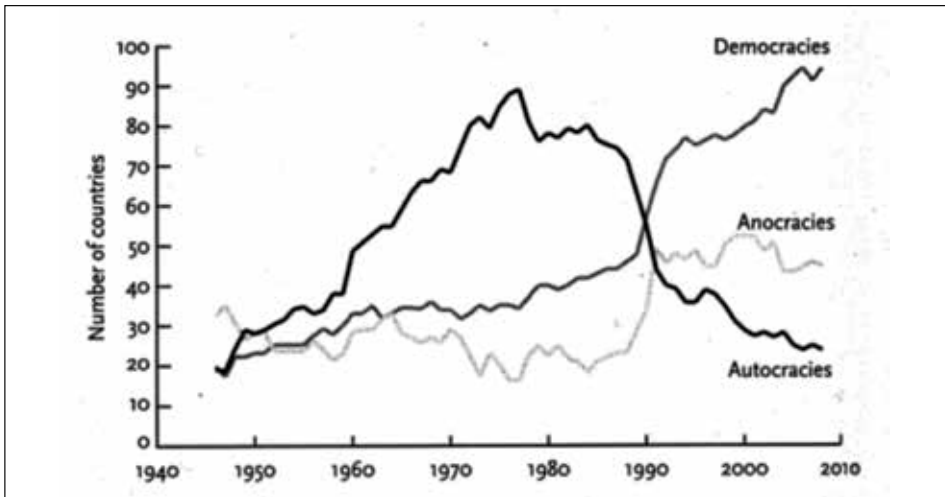


Figure 1.6. Democracies, autocracies and anocracies from 1946-2008. Only states with populations greater than 500 000 are included. (Source: Marshall and Cole, 2009)

In a less detailed way we may characterize states as *democracies*, *autocracies* and *anocracies* (states which have an incoherent mix of democratic and autocratic traits and practices) (Figure 1.6). We see that the number of states characterized as democracies is growing. The development seems to be rather stable as we have many examples of autocracies which turn into democracy, but very few cases of the opposite.

Fund For Peace (FFP), an NGO working to prevent violent conflict and promote sustainable security, has divided states in sustainable, stable, weak and *failed states* (Figure 1.7). FFP describes failed state as “states which lost control of its territory, or of the monopoly on the legitimate use of physical force therein; erosion of legitimate authority to make collective decisions; inability to provide public services; inability to interact with other states as a full member of the international community.”

The right to free exchange of ideas, to assemble and to organize is essential for the democratic process. Civil society refers to all individuals and organizations in a country that is not state or authority. *Civil society* organizations are referred to as Non-Governmental Organizations, NGOs, or Civil Society Organizations, CSOs. Many people see the topics of sustainable development, protection of nature, and the fight against climate change, as existential questions. Here the right to organize to influence political as well as other processes in society is essential. Such organizations play a very important role in the changes we see.

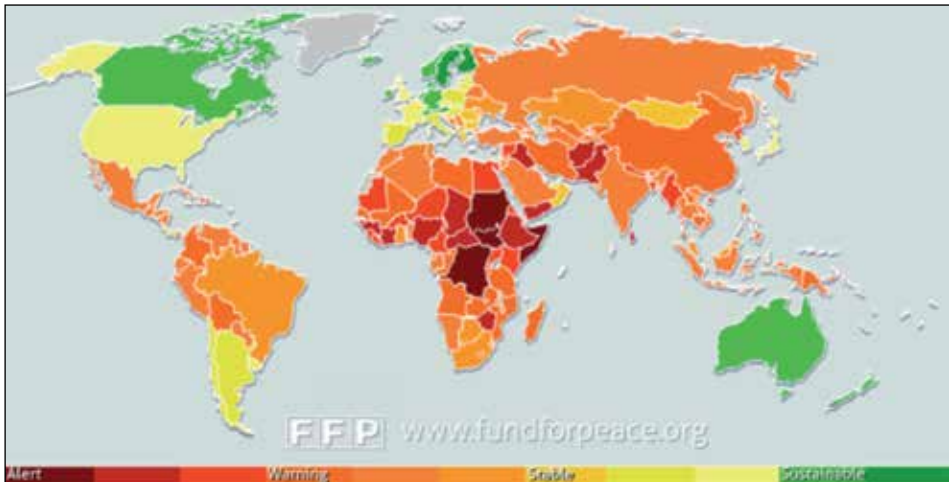


Figure 1.7 Failed States Index 2013 by Fund for Peace (source Fund For Peace)

The possibilities to influence have increased tremendously with the access to new information technologies.

1.7 A culture of non-violence and peace

Sustainability obviously requires that we do not have wars or large scale conflicts. We may be discouraged by reading the news every day, in which media report on violence and the conflicts going on somewhere in the world. But seen over a longer timespan violence has been in decline over millennia. In fact the present is the most peaceful time in the history of the human species! The decline of violence is found in many domains, including military conflict, homicide, genocide, torture, criminal justice, treatment of children, homosexuals, animals and racial and ethnic minorities. In his book *The Better Angels of Our Nature* the Canadian psychologist Steven Pinker reports on this in detail, after having spent many years in collecting data and statistics.

Pinker points to six processes which have reduced violence:

- The Pacification Process
- The Civilizing Process
- The Humanitarian Revolution
- The Long Peace
- The New Peace
- The Rights Revolutions

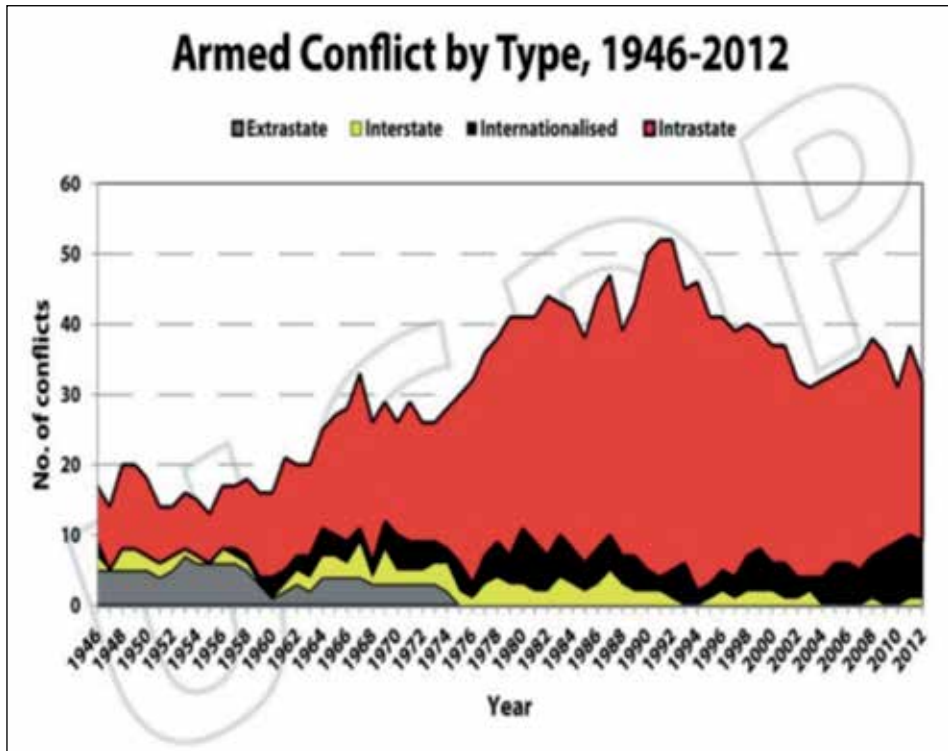


Figure 1.8 Armed conflicts 1946-2008. (Source Conflict database, Uppsala University 2013).

The first organized movements to abolish slavery, duelling, judicial torture, superstitious killing, sadistic punishment, and cruelty to animals, together with the first stirrings of systematic pacifism he calls the Humanitarian Revolution. It started in large scale not until early 1900s.

After the end of World War II the great powers and the developed states in general, have stopped waging war on one another. This Singer calls the *Long Peace* (Figure 1.8). In fact for some years there was no “classical war”, wars between states, on the planet. Today we have the Russian-Ukrainian conflict. Since the end of the Cold War in 1989, organized conflicts of all kinds – civil wars, genocides, repression by autocratic governments, and terrorist attacks – in spite of setbacks have declined throughout the world. This is called the *New Peace*. It is the result of a growing revulsion against aggression on smaller scales, including violence against ethnic minorities, women, children, homosexuals, and animals.

Singer is careful to point out that this development does not prove that it will not be different in the future. The very long term perspective he has and the sta-

tistics provided still gives the hope that human society is very different today than some years back, and will continue to be so. There are after all reasons for hope. The development we see in the world today is far from pointing to any country as sustainable. However some areas in the world show that it is possible to develop a society with respect for human rights, with well-functioning states with little corruption and where rule of law dominates over rule of power, where the inhabitants can feel reasonable secure for their future and personal life, thereby approaching a culture of sustainability.

Chapter 1 sources:

Section 1.1 Lars Rydén The Baltic University Programme on–line course on Sustainable Development Chapter 8a. Demography and population change <http://www.balticuniv.uu.se/index.php/8a-demography-and-population-change>

Section 1.2 Based on Keith Montgomery The Demographic Transition. <http://pages.uwc.edu/keith.montgomery/Demotrans/demtran.htm>

Section 1.3 – 1.4 Lars Rydén

Section 1.5 Lars Rydén based on <http://www.un.org/millenniumgoals/>

Section 1.6 Lars Rydén The Baltic University Programme on–line course on Sustainable Development Chapter 9a. Governance and democracy <http://www.balticuniv.uu.se/index.php/9a-governance-and-democracy>

Section 1.7 Lars Rydén based on Steven Pinker The Better Angels of Our Nature. A history of violence and humanities. Pinguin Books 2011