

Mohammad Dastbaz · Ian Strange
Stephen Selkowitz *Editors*

Building Sustainable Futures

Design and the Built Environment

 Springer

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Mohammad Dastbaz
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Part I
Sustainable Construction and
Measurement

Chapter 1

Building Sustainable Futures: An Ever Changing Policy Agenda

Mohammad Dastbaz and Ian Strange

1.1 Introduction

The rapid growth of population in the twentieth century and its continuation in the twenty-first century (pushing the world population to over 7 billion), together with ever-increasing demands on our planet's dwindling natural resources, has created a crisis of enormous magnitude that can no longer be denied. Numerous global initiatives led by the United Nations (UN) and other international and national agencies, aimed at the growing impact of environmental damage on every aspect of our lives, have created a sense of urgency to act (and to act now) before it is too late.

The UN "Climate Summit" in September 2014, where 120 world leaders attended, started its deliberations with the assumption that "climate change" is not a problem for tomorrow but is here today, and is the one which is disrupting our lives and every aspect of our development. Sustainable use of our natural resources, sustainable production, use of low carbon and renewable energy sources, sustainable transport and a planned approach to the controlled urbanisation were among some of the key challenges discussed at the summit.

Perhaps the most worrying and disappointing aspect of the 2014 summit was to note that despite early initiatives and declarations signed by world leaders, little progress had been made to halt the tide of further large-scale environmental damage to our planet in advanced industrial as well as developing countries. It is also worth mentioning that it was almost exactly a decade ago that the International Conference on Population and Development (ICPD), held in Cairo, Egypt in 1994, placed humans at the centre of development and stated that:

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Sustainable development as a means to ensure human well-being, equitably shared by all people today and in the future, requires that the interrelationships between population, resources, the environment and development should be fully recognized, appropriately managed and brought into harmonious, dynamic balance. To achieve sustainable development and a higher quality of life for all people, States should reduce and eliminate unsustainable patterns of production and consumption and promote appropriate policies, including population related policies, in order to meet the needs of current generations without compromising the ability of future generations to meet their own needs. ICPD Programme of Action, Chap. II, Principle 6 (UN 1994)¹.

1.2 Historical Context

A large portion of the existing literature seems to suggest that the idea of “sustainable development” first surfaced in the early part of the twentieth century and was put on various national and international agendas following the “Earth Day” held on 22nd April in 1970, where millions gathered (organised by G. Nelson in the USA), and then the first international conference on “the human environment” held in Stockholm, Sweden in 1972.

A more comprehensive exploration of historical events suggests that as early as the fourteenth century, processes were being put in place to safeguard our environment. Among these, one can name the English Parliament Sanitary Act, passed in 1388, which prohibited the throwing of filth and garbage into waters and rivers. However, it is in the nineteenth century that the majority of our contemporary sustainability challenges have their origin. The dawn of the Industrial Revolution and the growth of machine-based industries changed the face of our planet for good. The replacement of the farming/cottage-type production industry with large factories changed our world, and signalled the beginnings of monumental change, innovation and immense scientific discoveries. The Industrial Revolution also fundamentally changed Earth’s ecology and humans’ relationship with their environment. One of the most immediate and drastic repercussions of the Industrial Revolution was the explosive growth of the world’s population.² According to Eric McLamb, with the dawn of the Industrial Revolution in the mid-1700s, the world’s population grew by about 57% to 700 million, would reach 1 billion in 1800, and within another 100 years it would finally grow to around 1.6 billion.

A 100 years later, the human population would finally surpass the 6 billion mark.³ This phenomenal growth in population put enormous pressure on the planet, forcing it to cope with a continuously expanding deficit of resources.

It is clear from Fig. 1.1 that between the 1950s and 2000, the planet’s population doubled in size, and it is also important to state that at this stage for the first time in our history, there are more people living in the cities and urban areas than outside the cities.

¹ UN Publication. (2012)

² Dastbaz et al. 2015

³ McLamb 2011

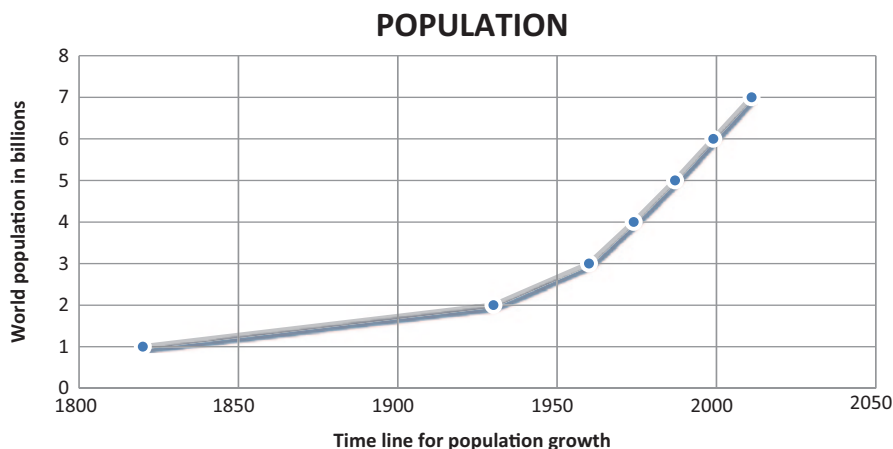


Fig. 1.1 Population growth timeline

In a report by Stuart Hart, published in the *Harvard Review* in 1997⁴, it is stated that the total “environmental burden” (EB) emerging from our impact on the planet is the function of three key factors. These are: population (P), affluence (A —proxy for consumption) and technology (T —proxy for how wealth is generated). According to this report, the total EB can then be expressed as:

$$EB = P \times A \times T$$

1.3 Sustainable Development

In 1983, the UN set up the “World Commission on Environment and Development” (WCED) headed by Harlem Brundtland, the Prime Minister of Norway. The aim of this commission (that came to be known as the “Brundtland Commission”) was to focus on looking into environmental and developmental problems and to suggest possible solutions to the UN and its members. In 1987, the Brundtland Commission published its first major report titled: “Our Common Future”, which had a major impact on the “sustainable development” debate and significantly influenced the Earth Summit in Brazil in 1992 and the third UN Conference on Environment and Development in South Africa in 2002.

“Our Common Future”—Chap. 2⁵, “Towards Sustainable Development”, provides a comprehensive and insightful debate covering the key aspects of sustainable development and the key challenges facing human society. The report stated:

⁴ Hart 1997

⁵ Brundtland Commission. (1987)

The satisfaction of human needs and aspirations is the major objective of development. The jobs—are not being met, and beyond their basic needs these people have legitimate aspirations for an improved quality of life. A world in which poverty and inequity are endemic will always be prone to ecological and other crises. Sustainable development requires meeting the basic needs of all and extending to all the opportunity to satisfy their aspirations for a better life...

Following the Brundtland Commission report, the “Earth Summit” in Rio in 1992 was viewed as a turning point in the debate about sustainable development. For the first time since the end of World War II, over 100 heads of state and government together with delegations from over 170 countries attended the “Earth Summit” to chart the course of human sustainable development into the next century. As part of this summit, world leaders discussed and signed an international convention on “environment and development” and an “agenda” for the twenty-first century (which was later called Agenda 21). The secretary general of the United Nations Conference on Environment and Development (UNCED), Maurice Strong, summarised Agenda 21 as, a “program of action for a sustainable future for the human family and a first step towards ensuring that the world will become a more just, secure and prosperous habitat for all humanity”.⁶

1.4 Current Agenda

The “Millennium Summit” of the United Nations in 2000 established a number of “Millennium Development Goals” (MDGs) which highlighted areas of concern and the agenda for developing the sustainability debate across the world. Eight MDGs were identified which are listed below:

- Eradicate poverty and hunger (MDG1)
- Achieve universal primary education (MDG2)
- Gender equality and empowering women (MDG3)
- Reduce child mortality (MDG4)
- Improve maternal health (MDG5)
- Combat HIV/AIDS, malaria and other diseases (MDG6)
- Environmental sustainability (MDG7)
- Global partnership and development (MDG8)

The main issue of focus for this book of course is MDG7, which is “environmental sustainability” with particular attention on sustainable design and the built environment.

One of the challenges identified in the literature dealing with “sustainable design and built environment” is the different viewpoints and approaches between industry, business and environmental campaigners and researchers and academia, and how to bridge the gap between the differences and, more importantly, how to

⁶ For more information see <http://yosemite.epa.gov/r10/oi.nsf/Sustainability/History>.