

# Introduction

IGNACIO AYESTARÁN and MIREN ONAINDIA

The University of the Basque Country (UPV/EHU)

In 1987, the World Commission on Environment and Development (better known as the Brundtland Commission) published its famous report *Our Common Future*, in which, for the first time, the concept of *sustainable development* was internationally defined as development that meets the needs of the present without compromising the ability of future generations to meet their own needs. In 2007, the United Nations Environment Programme (UNEP) published the assessment report *Global Environment Outlook: Environment for Development* (GEO-4), to determine how our planet had changed after two decades of concern over sustainable development. According to the UNEP, the world has radically changed on a social, economic, and environmental scale since 1987: the world population grew from 5 billion to 7 billion people, trade is nearly three times greater, and the average per capita income increased by almost 40 percent. But it did so unequally and with broad margins of environmental degradation of ecosystems within several indicators (water management; loss of biodiversity; urban development and population; climate change of anthropogenic origin; agrarian, livestock, and fishing overexploitation; among others). The degradation of ecosystem services may considerably worsen on the planet during the first half of this century, according to the United Nations' reports on *Millennium Ecosystem Assessment*. This would be a major obstacle in achieving the Millennium Development Goals of reducing poverty, hunger, and diseases, for which environmental sustainability is fundamental.

On the global scale, changes have clearly accelerated across the entire planet. From a global point of view, ecological and social sustainability are two facets of the same changing reality. On the one hand, social sustainability depends on ecological sustainability: If we continue degrading nature's capacity to produce the ecosystems' services (water filtration, climate stabilization, etc.) and resources (food, materials), both individuals and nations will be affected by growing pressures and increasing conflicts, as well as by threats to public health and personal safety. On the other hand, ecological sustain-

ability depends on social sustainability: With a growing population living in a social system that does not make the fulfillment of its needs possible, it is increasingly difficult to protect the natural environment. The forests are felled for agriculture, the pastures are overexploited, the aquifers degraded, the rivers and seas overused, although some of nature may be conserved in small reserve areas or natural parks. In addition, human behavior and the social dynamic often lie at the heart of social and ecological problems. It must be, therefore, assumed that there will not be sustainable development if sustainable societies do not first exist.

A sustainable society has the challenge of developing human capital in the areas of education, health, job creation, and innovation. This process has ethical implications both in the areas of transgenerational solidarity (with future generations) and intragenerational solidarity (with current generations from the most disadvantaged places), as well as on issues related to gender equality and opportunities in a complex and global world.

It is within this context that the present text is meant to be a contribution toward sustainability, integrating different thematic issues related to sustainable development in its threefold consideration (economic, social, and environmental). Because reality always appears to us as a complex and transdisciplinary connection, the present effort is part of a multidisciplinary approach that includes methodology, knowledge and the complexity of values.