Introduction

Over the last decades, development thinking has been profoundly changed by two different, albeit complementary, issues that emerged in the international literature: the concepts of human development (HD) and sustainable development (SD).

The definition of a widely known concept of human well-being based on the capability approach formulated by Sen, 1979, Sen, 1982, Sen, 1985 was the basis of the first Human Development Report published by UNDP in 1990.[1] The HD paradigm developed by UNDP focused its attention on how development could enlarge people's choices by expanding freedoms and capabilities.
Moreover, HD also means an expansion of the real freedom that individuals enjoy and attention must be shifted away from the means that allow liberties to expand such as economic growth, increased personal income, technological progress or social modernization towards the ends which are the liberties themselves (Sen, 1999).

Over the last years, a great deal of attention has also been given to the role of natural resources and the environment, fundamental aspects of human well-being and the quality of life. Attention has gradually shifted from a vision of environment as a limit to economic growth (Meadows et al., 1972) to its active role in reducing poverty, achieving higher living standards and increasing human development levels. As claimed by the Brundtland Report, the definition of SD requires the same level of well-being achieved for the present generation to be maintained for future generations (WCED, 1987).

The first Human Development Reports have not explicitly considered the role of the natural environment in enhancing people's choices but in more recent editions, the environment and more broadly sustainable development have been progressively introduced (UNDP, 1996). In the year 2000, the definition of the Millennium Development Goals by the United Nations definitively recognized the full integration of human development and the environment as mutually reinforcing development goals.

From a theoretical perspective, an integrated Sustainable Human Development paradigm has been defined as development that promotes the capabilities of people in the present without compromising the capabilities of future generations (Anand and Sen, 2000, Sen, 2000).[2]
Two different approaches seem to be the most appealing for this integrated paradigm. The effects of natural resources endowment on development are mainly analyzed through the so-called Resource Curse Hypothesis (RCH), whereas the effects of economic growth and development process on environmental quality are part of the Environmental Kuznets Curve (EKC).

There are many empirical contributions that analyze the role of natural resources endowments in the economic growth process and define the RCH. The scope of these analyses is to capture the positive or negative role of natural resources in enhancing or reducing economic growth rate.
The empirical models of RCH adopt both the convergence theory developed by Barro and Sala-i-Martin (1995) and the huge amount of literature that analyzes the causal relationships between trade openness (and more broadly globalization) and economic growth. Furthermore, the specific role of human capital accumulation (related especially to education) and the quality of institutions has been introduced as a further explanation of the resource curse.

It is worth noting that the role of trade and economic globalization – defined as a process of enlarging opportunities in terms of new technologies, such as information, communication and competitiveness (Bhagwati, 2004) – is particularly important in all the explanations proposed as the basis of the RCH. The influence of the exploitation of natural resources on economic growth must be linked to the export flows of such primary resources and the role of technological innovation and foreign direct investment is equally recognized. Most of the RCH contributions explicitly relate to the trade-growth literature which analyzes links between trade liberalization and economic growth (Frankel and Romer, 1999, Winters, 2004), with specific effects on poverty and income distribution (Dollar and Kray, 2004, Ravallion, 2001), or specific issues related to the role of institutions (North, 1990, Rodríguez and Rodrik, 2001, Rodrik, 1998, Sokoloff and Engerman, 2000) and the effects on developing countries (Acemoglu et al., 2001, Greenaway et al., 2002, Moseley, 2000). The RCH literature has made a further step forward by including natural resources endowment as a possible source of low economic growth rate together with trade restrictive policies, macroeconomic instability, low human capital accumulation rate, corruption and so on.

The opposite causal relationship – the effects of economic growth and development on the environmental quality – has been mainly analyzed through the so-called Environmental Kuznets Curve (EKC). Pioneering contributions stressed the importance of pure economic growth (in terms of income per capita) as a major source of environmental degradation (Grossman and Krueger, 1995, Shafik, 1994), whereas recent contributions have shown the important role played by further aspects related to globalization, health, education and other well-being dimensions (Hill and Magnani, 2002, Tisdell, 2001).

It seems clear that both the RCH and the EKC models are deeply influenced by human development dimensions and such a common element could be a useful link between the two causal relationships. Furthermore, the role of globalization is a necessary additional perspective that should be scrutinized and strictly connected to the quality of institutions and investments for human capital accumulation.

The rest of the paper is structured as follows. In Section 2 we specifically analyze the RCH while in Section 3 we underline the effects of institutions and measures of human well-being on the RCH. In Section 4 we describe the classic EKC contributions and we build a partially modified EKC that accounts for human development and sustainability. In Section 5 we test the possibility of building an integrated model linking the RCH with the modified EKC, which allows us to analyze the reciprocal causality links among economic growth, human development and sustainability with special attention given to the role of the globalization process and the quality of institutions. Section 6 concludes with some reflections on the policy actions proposed at international level.