

Chapter 12

Harnessing Knowledge for Sustainable Development: Challenges and Opportunities for Arab Countries

Abdelkader Djeflat
Université de Lille 1, France

ABSTRACT

Arab countries face two major challenges resulting from increasing competition from the rest of the world and persistent reliance on mineral resources for their growth. At the same time, sustainable development is increasingly becoming a major concern for world development. In this respect, and from a sustainability point of view, knowledge economy opens up new and more accessible opportunities through the ‘substitution’ of physical resources by immaterial resources. This situation raises two fundamental questions: the first one relates to the opportunity of ensuring sustainable development while the knowledge base remains rather weak and policies often short-sighted. The second one is how an integrated approach based on knowledge can strengthen existing knowledge bases and create new ones to further sustainable development. Looking at a sample of advanced countries and Arab countries, this chapter argues that sustainability of growth rests fundamentally on the capability of properly harnessing knowledge.

INTRODUCTION

Sustainable development is becoming increasingly a major concern for world development since the Rio Summit in 1992 and one of the major challenges on the international agenda in the face of bad indicators of most resource-use and worsening environmental impact. The 1987 Brundtland Report, of the World Commission on Environment and Development, (WCED 1987) defined sustainable development as “the development that meets the needs of the present without compromising the ability of future generations to meet their own needs.” The new regulatory principle, “pollution prevention pays,” aims at promoting competitive and environmentally sustainable industrial production. While many of the work and resolutions are centred on costs and pricing both in terms of understanding and as a policy instruments, it is

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only in the last few years that science and technological capabilities issues are recognised as deserving to be given top priorities. It is gradually recognized that sustainability relies more and more on innovation capabilities and on harnessing the necessary knowledge.

In Less Developed Economies (LDCs), the situation is more challenging: while GDP growth of 6% to 8% per year is needed in the next three or four decades to meet all their needs, they have to comply with sustainability requirements while developing the necessary knowledge assets and capabilities, they often lack. The transition to a global, networked knowledge economy will be one of the most important social and economic challenges of the next decades. Knowledge is known, to be sometimes difficult to access and its price is distorted by world market, under intellectual property rights and other restrictive practices which do not benefit LDCs. This is the case of Arab countries where the level of innovation performances remains weak and where major investments made in education, training and research have yielded only limited results. This situation raises two fundamental questions. The first one relates to the opportunity of insuring sustainability of growth while competitive pressures drive these countries to maximum use of natural resources, over-crowding of cities, and the acquisition of packaged, ready to use technology, produced elsewhere. The second one relates to the relatively weak knowledge base and the difficult integration of knowledge economy approach in most economic policy agendas (Djefflat 2006b). We will argue, in this chapter, that sustainability of growth rests fundamentally on the ability to properly harness knowledge. In other words, “sustainable knowledge” remains paramount to sustainable development. This raises important theoretical and conceptual issues on the linkages between sustainability of development and knowledge. From an empirical point of view, we will try to analyse the difficulties met in the process of putting knowledge to work for sustainability while stressing some of the new opportunities. In this endeavour, we will look, in a first section, at the relationship between knowledge systems, knowledge economy and sustainability from a conceptual and theoretical point of view. The second section will raise the issue in relation to Arab countries with the objective of highlighting the effects of low knowledge base on sustainability. A third section will examine from an empirical point of view this relationship and its measurement, using data from both advanced and Arab countries.

1. SUSTAINABLE KNOWLEDGE FOR SUSTAINABLE DEVELOPMENT: CONCEPTS AND ISSUES

There is an increasing belief that science, technology and knowledge play an important role in sustainable development (Dayan, 2005). Consequently knowledge systems and knowledge economy seem to open up new and varied avenues to be explored in the direction of sustainability. How can knowledge enhance sustainable development? This is the main issue we will address in this section.

1.1. Knowledge Systems and Sustainable Development

In an organised economy, according to the loops of re-using resources and the quality of information, development and efficiency are not dependent anymore on salaries and large scale of production. The critical resources become practical knowledge, local entrepreneurial dynamism, and trust, cooperation over the fence among organisations, human intelligence and know-how. This leads to an “economy of human intelligence” (Dayan, 2005). Knowledge can make substantial and essential contributions to

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