Putting Africa First

The Making of African Innovation Systems

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Towards an African National System of Innovation

Lessons from India

Angathevar Baskaran and Mammo Muchie

Introduction

India and Africa share a common history of colonisation and struggle for independence. India’s independence influenced many national liberation movements across Africa. Further, both India and Africa have been facing some common post-independent political and socio-economic problems towards achieving development and modernisation. Because of this shared colonial history, India’s economic development policies and its achievement have been keenly watched and to some extent followed in many African countries. After attaining independence, India was trying to find a right development model. Indian political leaders feared neo-economic colonisation by the Multinational Corporations (MNCs), as the memory of colonisation of India by the East India Company was still fresh. At the same time, the rapid industrialisation achieved by the Soviet Union through five-year plans appears to have made a big impression on them. As a result, Indian leaders, while following a Western democratic political system, decided to follow a ‘mixed-economy’ model where the public sector played a predominant role. India’s science, technology and economic policies were tuned to achieve ‘self-reliance’ which until the mid-1980s was ‘inward-looking’. This led to a very different experience compared to those of East-Asian countries such as South Korea and Taiwan. However, the experiences of the Indian innovation system over the last five decades are more relevant to Africa because of common socio-economic problems such as large rural population, illiteracy, health, food and poverty. In this chapter, first, we discuss the evolution of the Indian national innovation system (Phase I – inward looking and Phase II – outward looking) and then, we draw some lessons from India’s experiences for making an African national system of innovation.
Phase I (1950s-mid 1980s): Inward Looking National System of Innovation

Figure 1 Three Major Features of the Indian Innovation System

Figure 1 illustrates the three major features of the evolution of the Indian innovation system: (i) Inward looking Phase I; (ii) Outward looking Phase II; and (iii) the phenomenon of ‘duality’. The Indian innovation system that evolved between the 1950s and mid-1980s was driven by two major factors; (i) ‘blind faith’ in science and technology; and (ii) an inward-looking policy of ‘self-reliance’. Jawaharlal Nehru, India’s first Prime Minister declared that ‘science alone… could solve these problems of hunger and poverty’ (Nayar 1983: 252). In 1958, the Scientific Policy Resolution committed the government ‘to foster, promote, and sustain, by all appropriate means, the cultivation of science, and scientific research in all its aspects’ (Nayar 1983: 288). Immediately before and after independence in 1947, India established a basic science and technology (S&T) infrastructure that included a network of public R&D organisations, universities, science and engineering institutions.

The principal policy objective behind India’s industrialisation effort has been ‘self-reliance’. Nehru said that India could not be economically or politically independent unless it strengthened its scientific and technological capacity (Eisemon 1984: 269). Indian leaders feared the domination and influence of foreign firms if free and unrestricted entry was allowed. Therefore, India’s ‘self-reliance’ policy was defensive and inward looking rather than outward looking. India aimed to create local technological capabilities to meet mainly the domestic demands and reduce foreign dependency rather than developing an industry that should be competitive in the global market. This fundamental factor determined the shape and efficiency of the Indian system of innovation in Phase I. The ‘self-reliance’ policy influenced the...