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Turning Rough Dreams into a Polished Reality? The Development of Diamond-Processing Capabilities in Botswana’s Diamond Cutting and Polishing Industry

Letsema Mbayi
Research Fellow, Botswana Institute for Development Policy Analysis

Botswana is the world’s largest producer of diamonds by value and since independence diamond revenues have contributed significantly to the country’s development. In light of imminent resource depletion, in 2005 the Government signed an agreement with the country’s largest diamond producer, DeBeers, to add value to diamonds by benefiting them locally. By June 2014, 20 cutting and polishing firms, known as Sightholders, had been licensed and were operating in Botswana. These firms receive regular rough diamond allocations on a number of conditions, including training locals with cutting and polishing skills. Traditionally the cutting and polishing skills was a craft that was learnt through long apprenticeships. However, the technological revolution that started in the industry in the 1980s has changed the nature and mix of skills used in cutting and polishing process. Technologies like laser, computer numerically controlled machines and computer-aided design have increased accuracy and improved the quality of the polished diamonds. These technologies have also simplified the skills needed by production workers and simultaneously enhanced the skills required in machine maintenance. This paper uses primary and secondary data collected in Botswana, Israel, India and the United Kingdom as part of the author’s doctoral research to argue that being a latecomer to the diamond cutting and polishing industry has provided

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the scope for Botswana to leapfrog to the most efficient technologies. This is aiding the country’s current ability to build diamond-processing capabilities. Competitiveness will however depend on a number of factors and the cost of production will be crucial, particularly productivity is crucial. The development of sophisticated diamond processing skills is crucial if the country is to secure some economic gains from the diamond sector beyond diamond mining, when diamonds could be imported for local processing.

8.1 Introduction

Botswana has been one of the most successful economies in Africa and its rapid growth has hinged upon its abundant diamond resources, which generated nearly half of fiscal revenues. Botswana is the largest supplier of gemstone diamonds, supplying about a quarter of world’s gemstone diamonds by value. However, unless a major diamond deposit is discovered the government expects diamond mining to become unprofitable in the country in the next two decades as a result of approaching resource depletion (Government of Botswana, 2007:6). To make the most of existing deposits and to prepare the country for ‘life after diamond mining’, the government has an ambitious plan to turn the country into a diamond centre with downstream capabilities that will add more value to diamonds. These skills can continue to benefit the economy when diamonds are no longer mined in Botswana. The first and most important part of this plan is to create an economically viable diamond cutting and polishing industry. To date 20 cutting and polishing firms have been started in Botswana and employed close to 4000 in 2014, the workers represent more than a tenth of the manufacturing sector’s employment. The Sightholders (DeBeers selected contract customers) are assured rough diamond supplies on a number of conditions including that they transfer skills to local workers.

Traditionally the skills used to cut and polish diamonds are craft skills that were developed over long apprenticeships, but as a result of a technological revolution that started in the industry in 1980s the nature and mix of the production and maintenance skills has changed significantly. This paper aims to investigate how the technological revolution in the diamond cutting and polishing industry has changed the skills needed in the industry and whether these changes provide an opportunity for Botswana to build diamond-processing capabilities. The paper starts by providing background on the role of diamonds in Botswana’s economy, the beneficiation strategy and the development of the local diamond cutting and polishing industry. The paper then reviews the literature on the nature and types of technological innovations. This is followed by a