

DIAMOND EXPLORATION

The chase is on: diamond miners continue to search the ends of the earth for the next big find.

2013 SNAPSHOT

AROUND US\$7 BILLION HAS BEEN SPENT ON EXPLORATION SINCE 2000

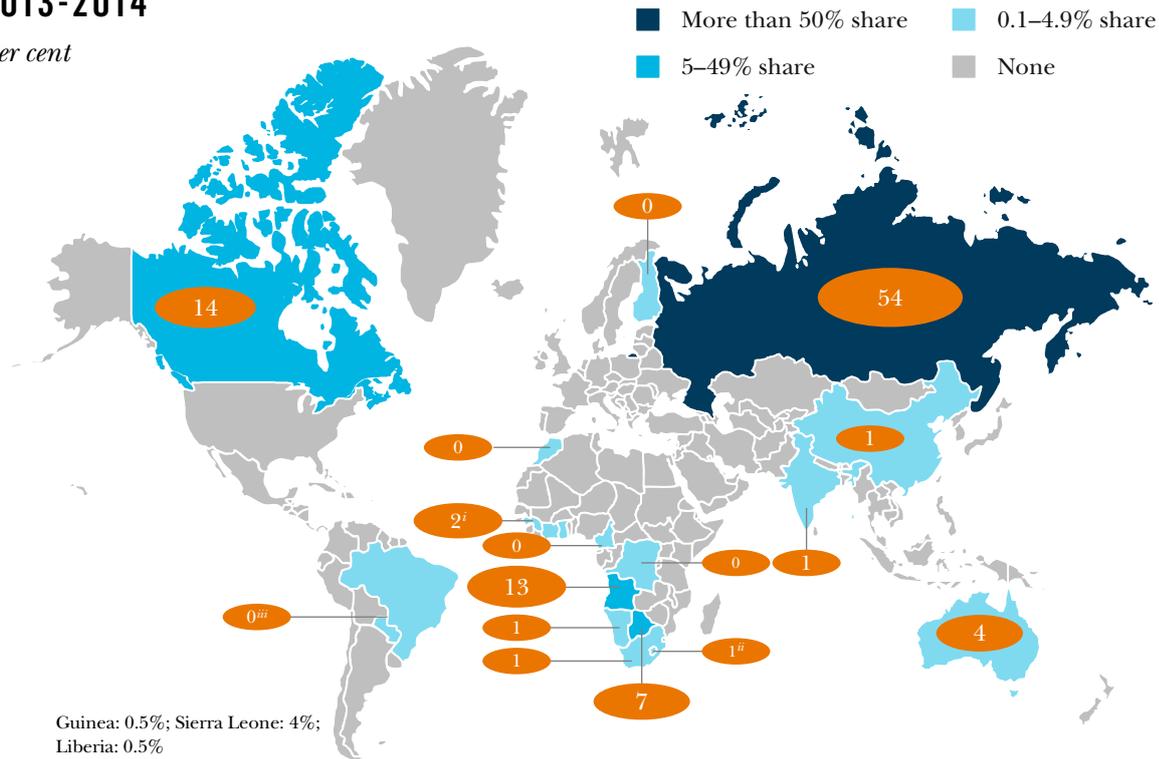
Diamond mineral systems occur in very specific cratonic target areas – these are well-known. With growing demand for diamonds and dwindling supplies from existing mines, the search for the next diamond mines is expected to continue. Since 2000, the diamond mining industry has spent almost US\$7 billion on exploration³⁰. To date, these efforts have yielded relatively meagre results: only one diamond deposit of significant size (Bunder, in India) has been discovered during this period³¹, in addition to other smaller deposits such as Orapa AK6 in Botswana (now the Karowe mine), owned by Lucara Diamond Corporation.

Today, the majority of diamond exploration spend takes place in relatively underexplored African countries such as Angola, the DRC and Zimbabwe, as well as the vast swathes of Arctic Siberia and Canada. Recently, there has been some change in the allocation of this spending: from 2011 to 2013 the share of global exploration spending that went to Russia increased from 27 per cent to 54 per cent, at the expense of countries such as Canada, South Africa and India³² (see Fig. 29).



FIG. 29: SHARE OF GLOBAL DIAMOND EXPLORATION SPEND BY COUNTRY 2013-2014

Per cent



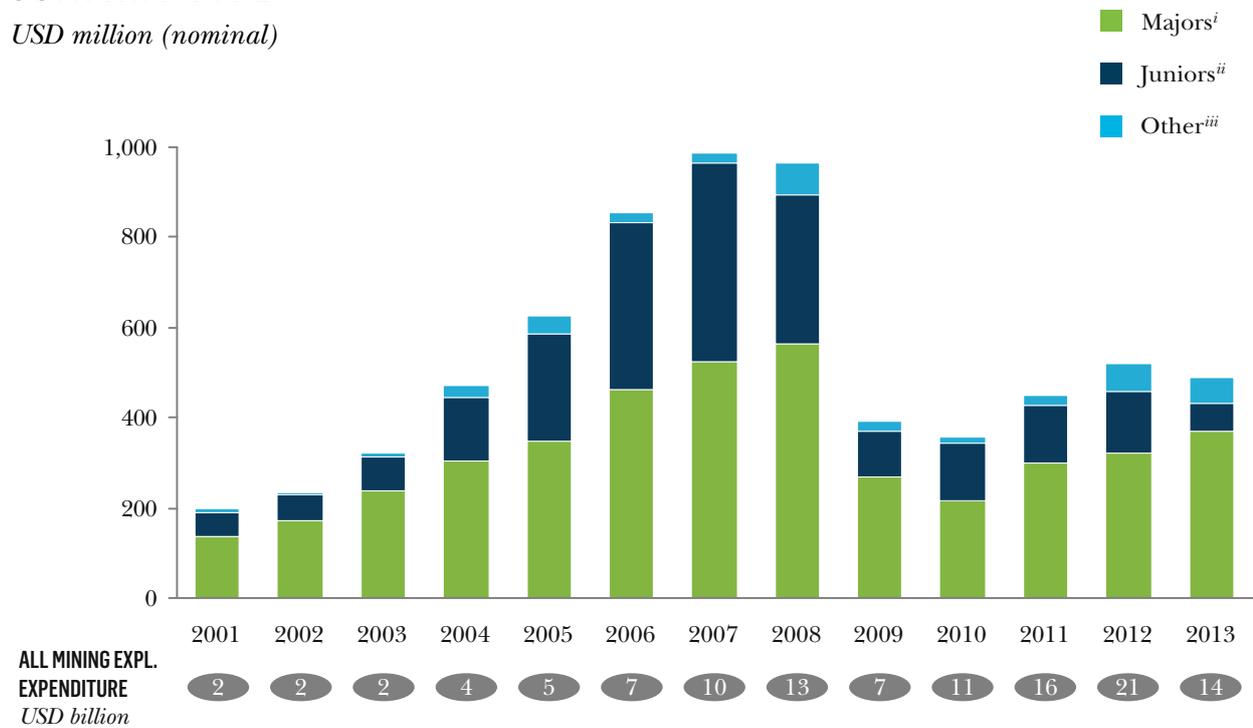
- i Guinea: 0.5%; Sierra Leone: 4%; Liberia: 0.5%
- ii Lesotho: 0.9%
- iii Paraguay and Brazil: 0.1%

Note: Total may not sum due to rounding

Source: De Beers estimates based on company publications and websites, SNL Metals & Mining's Corporate Exploration Strategies 2013; includes grassroots, late stage, and mine site exploration expenditures

FIG. 30: GLOBAL DIAMOND EXPLORATION BUDGETS, 2001-2013 BY COMPANY TYPE

USD million (nominal)



- i A company with adjusted annual nonferrous mining-related revenue of US\$500m or more
- ii A company whose principal means of financing exploration is through equity financing
- iii Entities not included in the above categories

Source: SNL Metals & Mining's Corporate Exploration Strategies 2013; includes grassroots, late stage, and mine site exploration expenditures



While the appetite for exploration remains high (2013 spending was 2.5 times that of 2001), overall spending has still not reached the record levels of 2007, when companies spent almost US\$1 billion on diamond exploration (see Fig. 30). The trend here differs from the mining sector in general, where 2013 expenditure, although lower than in 2012, remains well above 2007/2008 levels. De Beers and ALROSA represented almost 75 per cent of exploration spending in 2013³³.

LOOKING AHEAD

LARGE-SCALE PROFITABLE DISCOVERIES WILL MOST LIKELY REMAIN ELUSIVE

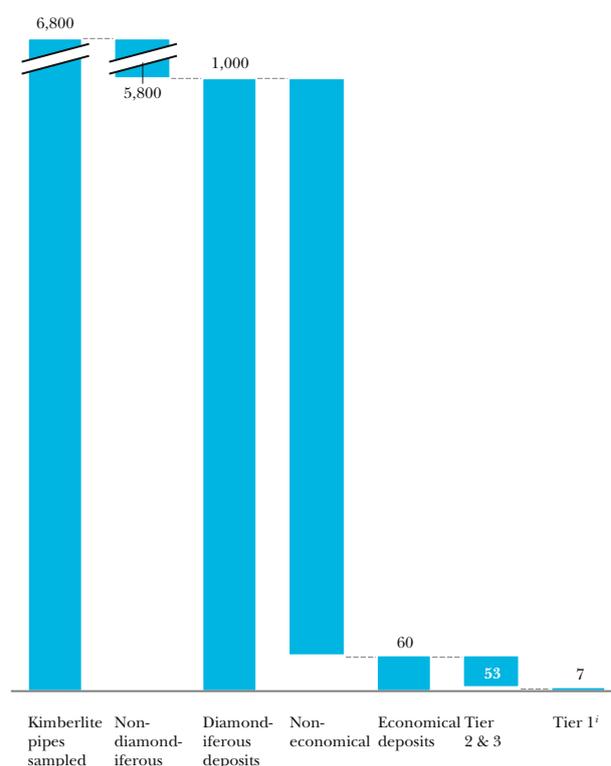
The large diamond mining companies are expected to continue to invest in exploration, but the probability of a major profitable new diamond discovery will remain relatively low. This is simply because finding economic diamond deposits is difficult: even spending billions of US dollars in exploration carries no guarantee of actually discovering economically viable deposits.

Over the last 140 years, almost 7,000 kimberlite pipes have been sampled by geologists, about 1,000 of which have been diamondiferous. However, only about 60 of these are sufficiently rich in diamond to be economically viable. Just seven mines (Jwaneng and Orapa in Botswana, Udachny and Mir in Russia, Premier (now Cullinan) and Venetia in South Africa and Catoca in Angola) are what miners refer to as 'Tier 1 deposits' with more than US\$20 billion worth of reserves (see Fig. 31).

Overall, the global mining industry is facing increasing pressure on capital expenditure, and in recent years many large-scale development projects have been placed on hold.

This also puts pressure on exploration spending. Across the mining sector, exploration expenditure fell by almost a third to about US\$14 billion in 2013³⁴.

FIG. 31: NUMBER OF DIAMOND DEPOSITS SUFFICIENTLY RICH TO WARRANT DEVELOPMENT



ⁱ Over US\$20 billion reserves. 7 'Tier 1' finds are: Jwaneng, Orapa, Udachny, Venetia, Catoca, Premier (now Cullinan), Mir
Source: De Beers

The geographical focus of diamond exploration will be likely to continue to be in those areas where the prospectivity potential is highest and where the least exploration has been conducted to date, such as Central Africa, Russia and Canada. In addition, South Africa and Zimbabwe are countries with potential: although they have a long tradition of diamond mining, high-resolution exploration technology has not yet been applied systematically here.

