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# **Exxaro Resources Ltd: Mining and Water Risk Management Case Study**

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## Mining & Water Risk Management Case Study Exxaro Resources Ltd.

### **The Challenge**

Freshwater scarcity threatens numerous industries across the globe, yet nowhere is it felt as pervasively as the metal and mining sector. Water is used in numerous activities in mining, from processing and dust suppression to transport. The sector is therefore highly dependent on a consistent supply of good quality water. Yet, the need for high volumes of water and resulting pollution from operations expose the sector to numerous water-related risks. Further, many of the world's mining reserves are located in water-scarce regions, like Chile, South Africa, and the Middle East, where corporations compete with municipal, agricultural, and industrial demands. The risk of public and regulatory scrutiny sometimes result in stranded assets when companies lose their license to operate.

According to the CDP, a third of reporting companies had operations in regions of high water-scarcity.<sup>1</sup> In 2013, 92% of respondents reported exposure to water risks that have the potential to impact their business now or within the next five years.<sup>2</sup> Already, companies are experiencing physical, regulatory, and reputational risks related to water that threaten their growth and license to operate. In 2015, almost two-thirds of companies in the materials sector reported experiencing detrimental water-related impacts. The top reported impacts were higher operating costs, transport disruption, and plant/production disrupt that led to reduced output. These result in financial impacts, such as reduced CAPEX, lower revenues, increased operating costs, and reduced shareholder value.<sup>3</sup> In fact, companies reported losses as high as 6.5% of EBITDA (FY 2011).<sup>4</sup> As one of the most water-intensive industries, future growth depends on securing a stable supply of this resource.

Along with other large mining companies like Anglo American and Rio Tinto, Exxaro Resources has experienced significant detrimental impacts related to water risks. Exxaro is one of South Africa's largest diversified resource groups, producing over 39 million tons of coal annually and operating base metal and mineral sand mines throughout South Africa, Botswana, Australia, and the Republic of the Congo.<sup>5</sup> In their 2015 CDP Water Report, Exxaro cites the availability of a sufficient amount of freshwater and recycled water as "vital to their operations." Yet, the company primarily operates in water-stressed geographies and has reported numerous incidents related to water in the past few years, including flooding, droughts, and regulatory challenges. In 2010, Exxaro reported 17 out of 30 "Level 2"

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<sup>1</sup> Metals and Mining Sector Under Water Pressure

<sup>2</sup> Metals and Mining Sector Under Water Pressure

<sup>3</sup> CDP Global Water Report 2015

<sup>4</sup> Metals and Mining Sector Under Water Pressure

<sup>5</sup> Exxaro Resources CDP Water Report 2015.

environmental incidents were water-related.<sup>6</sup> Half of Level 2 incidents in 2011 were also water-related, primarily caused by flooding and groundwater pollution issues. The total financial impact of all water-related incidents in FY2011 amounted to \$0.55 million or \$531 million EBITDA,<sup>7</sup> while just one reported flooding incident that closed operations for one day in 2014 amounted to over \$2 million in damages.<sup>8</sup> The “unavailability of water” ranked 6th (out of 20) in Exxaro’s top risks in 2014.<sup>9</sup>

Exxaro currently operates 13 facilities throughout South Africa exposed to water risk that could generate a substantive change in business operations. With mining operations in water-stressed regions around the world, water is a key strategic resource for Exxaro that has forced them to develop a comprehensive water management strategy.

### **Strategy**

Exxaro recognizes that water is key to their business operations and also an important natural resource for South Africa. The company therefore introduced a major water management strategy in 2010 that takes a holistic approach to water governance aiming to strategically manage water-related risks and optimize water use efficiency.

Exxaro implemented a company-wide water policy aimed at increasing efficiency through reuse and recycling that is aligned with the environmental legislative framework laid out by the National Water Act 36 1998. Exxaro has also implemented a Water Management Standard that states their commitment to developing a comprehensive Integrated Water and Waste Management Strategy applied to the whole life-cycle of a mine and adhere to the Department of Water Affairs best practice guidelines on storm water management, pollution control dams, water use and reclamation, etc. In 2010, the company also introduced a Water Management Program that assesses water-related risks and opportunities and develops mitigation and communication strategies to address them. Since water is a material risk to Exxaro, the program aims to implement responsible water management across the company’s operations. Water performance is reported to the Sustainability, Risk, and Compliance Committee quarterly. Through board-level participation, Exxaro has integrated water management into their business strategy. Exxaro introduced water management goals and KPIs that measure water use, intensity, and recycling/reuse on a monthly, quarterly, and annual basis. Exxaro also publicly discloses water management information through participation in the CDP and annual integrated reports.

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<sup>6</sup> Level 2 - Environmental incidents with reversible on-site and immediate surrounding impacts, will involve more than 48 hours in clean-up activities and a negative impact on shareholder value (eg R50 000 - R500 000 in damage has definitely occurred).

<sup>7</sup> Metals and Mining Sector Under Water Pressure

<sup>8</sup> Exxaro Resources CDP Water Report 2014.

<sup>9</sup> Exxaro Integrated Report 2014.

Beyond optimizing water use, Exxaro also aims to protect and improve water quality for surrounding communities by ensuring the water they discharge is of the same or better quality than the original input. As part of their long-term water strategy, Exxaro is implementing three water treatment plants near their operations in the Mpumalanga region of South Africa that will have the capacity to treat 17.5 mega liters of water per day.

Further, Exxaro is collaborating with the University of the Free State to evaluate innovate passive water treatment systems as long-term solutions to water management.

### **Impacts**

Exxaro achieved their target of 5% savings in absolute water withdrawals by 2014.<sup>10</sup> In their 2015 CDP Water disclosure, the company reported that total water withdrawals and discharges were lower than the previous year and they significantly increased water reuse and recycling. Beyond quantitative measures, Exxaro has worked on watershed remediation and habitat restoration by preserving and reconstructing wetlands near their Matla mine.

Additionally, the wastewater treatment plant at the Matla mine in the Mpumalanga region will reduce the safety risk for workers and provide potable water for surrounding communities. This mine has been subject to flooding in the past and the released water has the potential to contaminate water sources in the surrounding environment. The plant will treat 10.5 megaliters of water per day; 6.5 of that will be discharged back to the Olifants river for downstream use while the rest will be used for mine operations and potable water needs. Construction of the plant created 200 temporary jobs and will have 14 permanent jobs once completed.<sup>11</sup>

Exxaro's comprehensive sustainability strategy has earned the company numerous accolades, including the Nkonki Top 100 Integrated Reporting Award in 2014, the top 10 EY Excellence in Integrated Reporting 2014, the RobecoSAM 2015 Sustainability Yearbook bronze medal, ranked the number one mining company in the Top Employers Institute and is included in the JSE's Social Responsibility Index. Lastly, the Boston Consulting Group named Exxaro one of the top ten global mining companies to deliver the highest shareholder returns between 2001 and 2011.<sup>12</sup>

### **Lessons Learned**

Since 2010, Exxaro Resources has taken a proactive approach to water stewardship by measuring, mitigating, and disclosing water-related information that has allowed

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<sup>10</sup> [http://www.exxaro.com/ar/2014/Exxaro\\_IR\\_2014.pdf](http://www.exxaro.com/ar/2014/Exxaro_IR_2014.pdf)

<sup>11</sup> <http://www.exxaro.com/index.php/new-r250m-exxaro-water-treatment-plant-set-to-improve-safety-benefit-the-environment-and-local-water-users/>

<sup>12</sup> [http://www.nkonki.com/images/integrated-reporting/FM\\_Nkonki\\_Integrated\\_Reporting\\_Awards\\_15\\_Aug\\_2014.pdf](http://www.nkonki.com/images/integrated-reporting/FM_Nkonki_Integrated_Reporting_Awards_15_Aug_2014.pdf)

the company to recognize the true value of water to their business. After experiencing numerous, costly water related incidents, Exxaro performed a thorough water accounting and risk assessment that calculated the financial impact of water risk throughout their global mining operations. Measuring risk informed them that a holistic approach with board-level participation was necessary to implement a water strategy. Exxaro has successfully met or is on track to meet water reduction targets by implementing strategies to decrease withdrawal and increase reuse and recycling. Through this process, Exxaro now recognizes the opportunities for cost savings, protecting brand value, and ensuring business continuity by strategically managing water.

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