



South Africa

SUSTAINABILITY  
REPORT 2010



## OUR COMMITMENT TO THE USE OF PLAIN LANGUAGE

This report is designed to be easy to read, even where it deals with technical or scientific subjects. Wherever we have had to use technical, scientific or financial terms, they are explained, either in the text or in the glossary found on page 160 of this report. We have also tried to avoid using acronyms that may be unfamiliar to people outside the mining industry. The statistics we have included in the body of the report provide you with information on the most important aspects that can affect the sustainability of our business. If you would like more detailed information you will find it in the detailed sustainability information section provided on pages 99 to 187.

There is a loose leaf questionnaire included with the report. We would like your feedback so we can understand how easy it was for you to find information in this report, whether the information was relevant and easy to understand, and what other information you would like us to include in next year's report.

A full glossary of technical terms appears at the end of this report. We thought it would be useful to set out a few important terms that you will encounter in the report:

- We talk about sustainable development. A recognised definition of sustainable development is development that meets present needs without compromising the ability of future generations to meet their own needs.
- We also use the term sustainability. The *sustainability* of something refers to its ability to continue into the future. For example, the sustainability of a small business depends on its ability to be profitable and grow without always needing help.
- *Sustainability* reporting is a broad term used to describe reporting on economic, environmental and/or social impacts of an organisation.
- We also felt our use of the terms material and materiality in the context of this report needed explaining. When we talk about something being material, we are referring to something that is important to our business. When reporting on our sustainability we need to report on the things that can materially affect our economic, environmental and/or social performance.

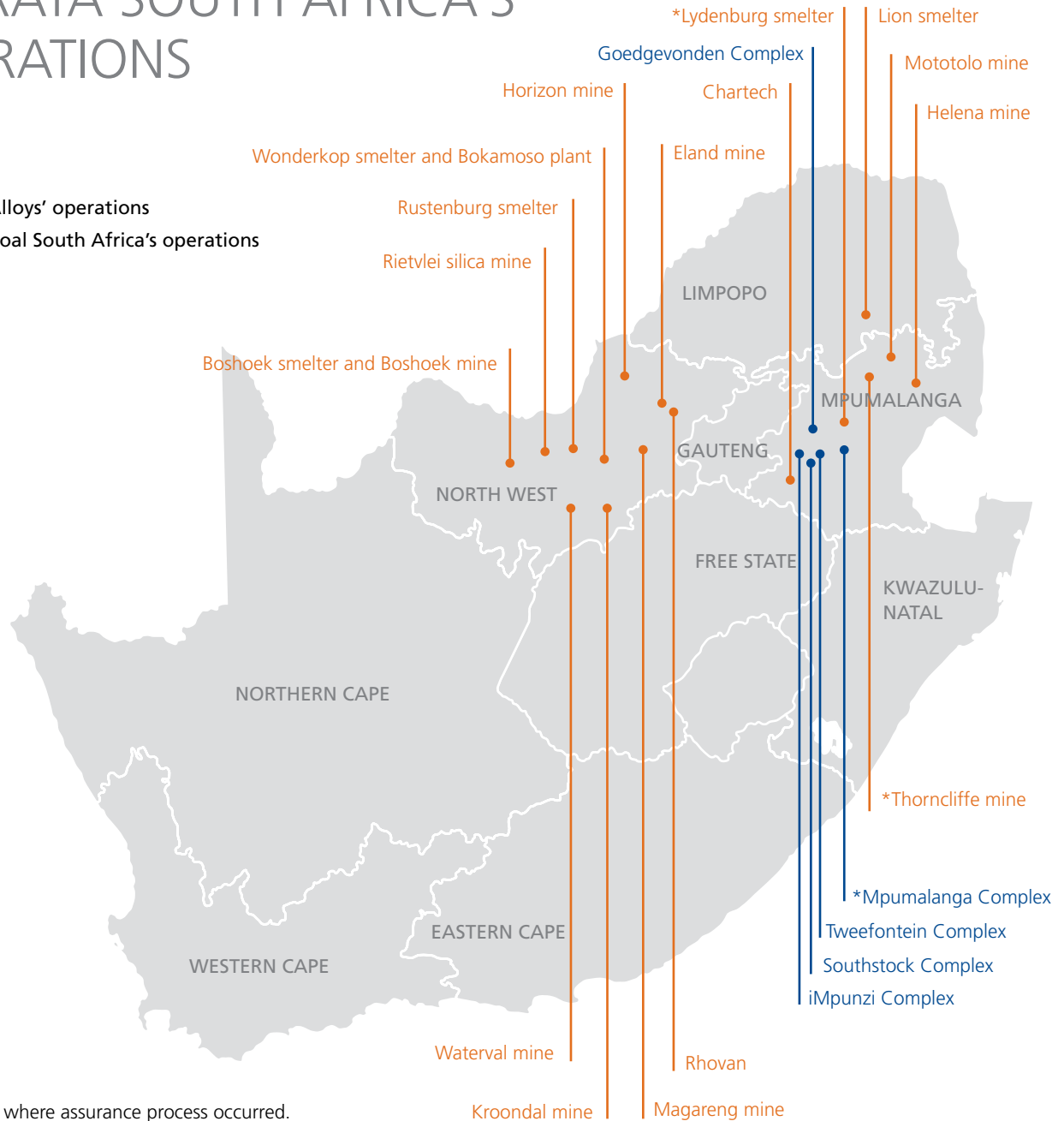
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# XSTRATA SOUTH AFRICA'S OPERATIONS

- Xstrata Alloys' operations
- Xstrata Coal South Africa's operations



\* Operations where assurance process occurred.

# ABOUT THIS REPORT

This report is intended to provide Xstrata South Africa's stakeholders with balanced and reasonable information on the financial and non-financial performance of our operations, which include Xstrata Alloys and Xstrata Coal South Africa. The report includes information on both our challenges and our successes.

To learn about how we identify and engage with our stakeholders, see page 147 to 154 of this report.

The Xstrata Group integrates its Sustainable Development Policy, 17 Sustainable Development Standards and its Business Principles into decision making and operations at all levels of our organisation. The information in this report reflects this integration and provides you with a comprehensive overview of our business and activities.

## Reporting guidelines

We apply the principles of inclusivity, materiality and responsiveness, as defined by the AA1000 AccountAbility Principles Standard 2008 (AA1000APS) in our reporting. (For an explanation of these terms please see the glossary on pages 160 to 167.)

This report has been prepared using the Global Reporting Initiative's (GRI) G3 Guidelines, its Mining and Metals sector supplement and the International Council on Mining and Metals (ICMM) Sustainable Development Principles. In addition, a table

shows our performance to date against the revised South African Mining Charter Scorecard (see pages 138 to 142).

Our financial year runs from 1 January to 31 December and this report covers the period 1 January to 31 December 2010. Our previous sustainability report covered the same period in 2009. (Web reference: for more information visit our corporate website: [www.xstrata.com/content/assets/pdf/xac\\_sustainability\\_2009\\_southafrica.pdf](http://www.xstrata.com/content/assets/pdf/xac_sustainability_2009_southafrica.pdf))

## Applying the Global Reporting Index Guidelines

This report meets application level A+ of the GRI G3 Sustainability Reporting Guidelines, including the Mining and Metals sector supplement.

## Independent assurance

Independent third party assurance in the form of a Type II assurance engagement, which consists of a combination of content-based assurance and indicator-based assurance, was conducted by SustainabilityServices.co.za. Content-based assurance assesses the report's completeness under GRI reporting requirements. This process reviews assertions made in the report for plausibility (that is, the likelihood that they are true) and/or supportability (whether there is evidence to support the assertions). The indicator-based assurance reviews the accuracy, completeness, consistency and reliability of data reported for selected sustainability indicators (see the assurance statement on page 156). The assurance engagement reviewed the reporting process and this report – to assess its application of AccountAbility's guiding principles of inclusivity, materiality and responsiveness.

## Determining materiality

Determining the importance (materiality) of issues is an essential step in sustainability reporting. To identify the issues that are important (material) to our business and our stakeholders and to decide on the structure we should adopt and the content we should include in the report, we reviewed many sources of information. These included:

- our Business Principles, Sustainable Development Framework, policies, procedures and audits (see [www.xstrata.com/sustainability/downloads/](http://www.xstrata.com/sustainability/downloads/))
- the results of our business risk assessment process ([www.xstrata.com/annualreport/2010/strategy/principalrisksanduncertainties.html](http://www.xstrata.com/annualreport/2010/strategy/principalrisksanduncertainties.html))
- feedback on our sustainability performance and reporting, including industry or company-specific issues raised by employees, contractors, customers, suppliers, business partners, communities, government, non-governmental organisations (NGOs) and the media
- key topics and challenges reported by peer companies or raised by industry associations
- a review of key issues covered in the media
- external initiatives and best practice guidelines including:
  - The Global Reporting Initiative (GRI) G3 Guidelines and its Mining and Metals sector supplement ([www.globalreporting.org/](http://www.globalreporting.org/))
  - The International Council on Mining and Metals SD Principles as on page 2 ([www.icmm.com](http://www.icmm.com))
  - The United Nations Global Compact ([www.unglobalcompact.org/](http://www.unglobalcompact.org/))
  - The Millennium Development Goals ([www.undp.org/mdg/](http://www.undp.org/mdg/))

- UN Universal Declaration of Human Rights ([www.un.org/en/documents/udhr/index.shtml](http://www.un.org/en/documents/udhr/index.shtml))
- The Voluntary Principles for Security and Human Rights ([www.business-humanrights.org/ConflictPeacePortal/Specialinitiatives/VoluntaryPrinciples](http://www.business-humanrights.org/ConflictPeacePortal/Specialinitiatives/VoluntaryPrinciples))
- International Labour Organisation Declaration Principles concerning Multinational Enterprises and Social Policy ([www.ilo.org/global/about-the-ilo/decent-work-agenda/lang-en/index.htm](http://www.ilo.org/global/about-the-ilo/decent-work-agenda/lang-en/index.htm))
- The King Code of Governance Principles (the Code) and the King Report on Governance for South Africa (King III) ([www.iodsa.co.za/](http://www.iodsa.co.za/))

### Material issues

We prioritise issues that we regard as material (i.e. things that are important to our business and our stakeholders), because they have the potential to affect the long-term success of our business, or the sustainability of the economy, the environment and the communities in which we operate, or they are important to our stakeholders.

The nature of our business means that social<sup>1</sup>, environmental<sup>2</sup> and ethical<sup>3</sup> issues are material to our future success and are also material to the interests of our local communities and other South African stakeholders.

Certain issues, such as climate change, energy, water, health and safety are material to all Xstrata South Africa's operations, while others are specific to certain operations.

The sustainable development issues we regarded as most material to Xstrata South Africa in 2010 are shown on pages 6 and 7.

>  
Goedgevonden Complex,  
Mpumalanga province



<sup>1</sup> When the term social is used in connection with sustainability, it is used to refer to the impact an organisation has on the social systems within which it operates. To assess these impacts we look at labour practices, safety and health, human rights, society and product responsibility

<sup>2</sup> When the term environmental is used in connection with sustainability, it is used to refer to the types of impacts organisations have on the environment in which they operate. These include any consumption (inputs) that could impact on the environment (e.g. use of water and energy) and its outputs of environmental significance (e.g. emissions, effluent and waste)

<sup>3</sup> The term ethical is used in this context in connection with an organisation's application of moral principles when conducting business

Most material sustainable development issues	See Page
<b>Economic sustainability</b>	29
<b>Financial performance</b>	100-102
<b>Value add</b>	
• Value of procurement spend including HDSA procurement spend	61
• Wages and other employee benefits	30
• Community investment	30
• Payments to government (royalties and taxes)	30
• Capital expenditure	30
• Economic value retained	30
<b>Social sustainability</b>	
<b>Safety and health</b>	37
Safety of employees and contractors	41
Health of employees and contractors	47
• Occupational illnesses	48
• Health epidemics: HIV/AIDS and tuberculosis	48
<b>Employees</b>	
Development and training of employees	52
Attraction and retention of critical skills	50
Diversity and equal opportunity	52
Labour peace	51
<b>Stakeholder engagement including community consultation</b>	147
<b>Community impacts and benefits</b>	
Social licence to operate (includes implementation of social and labour plans)	
Public health epidemics: HIV/AIDS and tuberculosis	48
Programmes benefiting society and communities	58
Safeguarding human rights	95
<b>Regulation and minerals legislation</b>	
Assuring tenure of mining rights	138-141
Compliance with revised Mining Charter targets	138-141
Implementation of social and labour plans	138-141
Compliance with regulations and minerals legislation, obtaining material licences and authorisations including environmental impact assessment (EIA) approvals and water use licences	138-141

Most material sustainable development issues	See Page
<b>Environmental sustainability</b>	
Access and allocation of resources	
Efficient use of resources	75
<ul style="list-style-type: none"> <li>• Impact of operations on climate change</li> <li>• Water use and protection</li> </ul>	75 85
Control of environmental impacts	83
<ul style="list-style-type: none"> <li>• Emissions to air</li> <li>• Waste</li> </ul>	76 79
Biodiversity and land management	83
<b>Product stewardship</b>	
Climate impact of thermal coal use by customers	79,87
<b>Governance</b>	
Sustainable development governance	92
Corporate governance	90
Risk management	94
Ethics	94
Human rights	95

## Data measurement

Data is measured at source (e.g. flow metres are used to measure water consumption, pump metres to measure diesel fuel, etc). External and internal controls are in place to ensure that data is collated and reported accurately. Indicator-specific descriptions of data measurement occur throughout the report. Where we believe that a GRI G3 indicator is “not applicable” we have stated this in the GRI G3 Content Index table on pages 168 to 188. For a thorough indicator-specific self-assessment contact [szibi@xstrata.co.za](mailto:szibi@xstrata.co.za).

In addition, data measurement is in accordance with Xstrata’s policies, procedures, codes and guidelines, which

were developed to meet international best practice for sustainability monitoring and measurement. Where possible, we have defined data measurement by means of units of measure. Additional information is available upon request. We have identified any restatement of information in this report.

## Restatements

Improvements in our reporting and verification systems have made it possible to restate some figures with greater accuracy. We have indicated where this has occurred.

There has been no significant change in the scope, boundary or measurement methods applied in this report from those applied

in previous reports. However, during 2010 Xstrata introduced additional definitions and changed some definitions in order to report accurately in accordance with the GRI sustainability reporting guidelines, the GRI G3 Indicator Protocol sets and the Mining and Metals sector supplement January 2009. Where this has happened we have reported these results separately for 2010 as they are not comparable with the 2009/2008 data.

## Contact us

For additional information on this report contact Songezo Zibi, Head: Corporate Affairs ([szibi@xstrata.co.za](mailto:szibi@xstrata.co.za)).

# WHO WE ARE AND WHAT WE DO

## INTERNATIONALLY

Xstrata plc, one of the world's largest mining companies, has ferrochrome, coal, copper, nickel, platinum, vanadium and zinc operations in Africa, Australasia, Europe, North America and South America. It also has interests in iron ore projects in Africa, recycling facilities<sup>4</sup> and a suite of global technology products, many of which are industry leaders. It is listed on the London and Swiss stock exchanges and has its headquarters in Zug, Switzerland.

In 2010 the Xstrata Group employed 38 445 people worldwide of which 25 661 are part of the Xstrata South Africa team (see page 49 for information on Xstrata South Africa's employees).

### A geographic breakdown of Xstrata assets



● Australasia	38%
● South America	30%
● Africa	17%
● North America	10%
● Europe	5%

### Xstrata employees by commodity business unit



● Copper	11 483
● Coal	10 473
● Alloys	8 337
● Zinc	4 645
● Nickel	3 340
● Technology services	167



For more information visit our corporate website: [www.xstrata.com](http://www.xstrata.com)

For more information visit [www.xstratatechnologyservices.com](http://www.xstratatechnologyservices.com)

<sup>4</sup> Electronic scrap is rapidly becoming a growing environmental concern, which Xstrata Recycling is addressing. This business is the world's largest recycler of electronic scrap including printed circuit boards, integrated processors and mobile phones. It operates two sampling and recovery plants focused on electronics recycling in San Jose, California, and East Providence, Rhode Island. Xstrata Recycling sources copper and precious metal-bearing scrap streams from electronics manufacturers in Asia, which are shipped to recycling facilities in California and Rhode Island for sampling, then sent as feed to the Horne smelter in Canada. The Horne smelter processed 107 800 tonnes of recycled material in 2010



**The Xstrata Group's revenue by commodity in 2010 (% of Group total)**



● Copper	46%
● Coal	26%
● Zinc	13%
● Nickel	9%
● Alloys	6%

**The Xstrata Group's revenue by region**



● Australasia	29%
● South America	29%
● North America	21%
● Europe	11%
● Africa	10%

> The plant at Goedgevonden colliery, Mpumalanga province

## IN SOUTH AFRICA

### How Xstrata South Africa is contributing to the South African economy

Over R50 billion has been invested in South Africa since 2002. Some of the major investments include:

## R5.7 billion

acquisition of Duiker Coal

## R1.7 billion

Lion ferrochrome plant

## R3.0 billion

Goedevonden complex

## R7.5 billion

Eland platinum mine

## R14.6 billion

on 24.9% stake in Lonmin

## R3.1 billion

ATCOM East complex

## R4.9 billion

Lion II expansion project (announced in 2010)

- Over 5 000 new jobs created since 2002 (including Lion II project announced in 2010)
- Over R300 million invested in training and skills development programmes
- Over R50 million invested in employee wellness and community health in the past two years, including leading HIV and AIDS programmes
- Over R200 million invested in community development over the past three years
- World class safety record in all local operations.

Xstrata South Africa, a subsidiary<sup>5</sup> of Xstrata plc, comprises Xstrata Alloys and Xstrata Coal South Africa.

The Xstrata Alloys Ferroalloys division is the world's largest producer of ferrochrome and a leading producer of vanadium. It also produces char and paste, for use in its smelters and for sale to customers. Its platinum group metals (PGMs) division mines PGMs and produces PGM concentrates.

Xstrata Coal South Africa, a division of Xstrata Coal, which has its headquarters in Sydney, Australia, produces thermal coal for use in power stations.

For details of the operations of Xstrata Alloys and Xstrata Coal South Africa see the table on pages 11 and 12.

(Web reference: for more information visit our corporate website:

[www.xstrata.com/content/assets/pdf/xac\\_sustainability\\_2009\\_southafrica.pdf](http://www.xstrata.com/content/assets/pdf/xac_sustainability_2009_southafrica.pdf))

### Awards and recognition

In 2010 Xstrata plc retained its position as Mining Sector Leader for the fourth consecutive year in the annual Dow Jones Sustainability Index (DJS) review 2010/11. This year Xstrata was also named as the Global Super Sector Leader for Basic Resources Industries. The Dow Jones Sustainability Indices (DJSI) follow a best-in-class approach and include sustainability leaders from each industry on a global and regional level.

In addition, in 2010 the sustainability credentials of the Xstrata-Merafe Chrome Venture were recognised when Merafe Resources was identified as a Best Performer in the JSE Limited's Socially Responsible Investment (SRI) Index for 2010 and one of only seven companies to consistently rank among the Best Performers since the Index began identifying Best Performers in 2007. Xstrata Coal South Africa's joint venture partner, African Rainbow Minerals (ARM) qualified to participate in the JSE SRI Index in 2010.

Xstrata Coal South Africa's entry in the Water Care category of the Mail & Guardian Greening the Future awards was a finalist and it earned the company a special commendation for its commitment to taking water issues seriously and its efforts towards mitigating the impact of its operations.

<sup>5</sup> We use the name "Xstrata" to refer to both Xstrata plc and Xstrata South Africa

## BUSINESS PROFILES

### Xstrata Alloys

#### Ferroalloys division

Xstrata-Merafe Chrome Venture	World's largest producer of ferrochrome, accounting for about 20% of the world's annual ferrochrome production. Its attributable ferrochrome saleable production in 2010 was 1,165 kt**
Nature of business	Pooling and sharing venture Empowerment partner Merafe Resources participates in 20.5% of the earnings before interest, tax, depreciation and amortisation (EBITDA) with an option to increase its participation to 26%. Xstrata Alloys participates in 79.5% of the Venture's EBITDA
Operations	20 furnaces on five production sites with the capacity to produce 1 979 000 metric tonnes of ferrochrome a year, nine chrome mines and access to UG2 <sup>6</sup> ore from six UG2 facilities. Operations are located in the North West, Limpopo and Mpumalanga provinces
Product and uses	Ferrochrome (FeCr), which is a corrosion-resistant alloy of chrome and iron. Most of our ferrochrome is used in the production of stainless steel. Stainless steel is used in food production and storage, pumping and storage of acids, gas and oil production, the storage and desalination of water, architecture, medical applications, cutlery and building applications
Markets	The Venture supplies ferrochrome to stainless steel mills in Europe, America and Asia (including China, Japan, Taiwan and Korea)
<b>Rhovan division</b>	A leading producer of primary vanadium, mining a vanadium deposit within the world-renowned Bushveld Complex
Nature of business	Pooling and sharing venture Empowerment partners are the Bakwena-Ba-Mogopa Traditional Community, who share in 26% of Rhovan's EBITDA. Xstrata Alloys participates in 74% of Rhovan's EBITDA
Operations	Opencast vanadium mine and a processing plant with one DC <sup>7</sup> arc furnace. The plant, situated in the Brits area of the North West province, has the capacity to produce 22 000 lbs of vanadium pentoxide equivalent a year
Products and uses	Vanadium pentoxide (V <sub>2</sub> O <sub>5</sub> is the chemical formula for vanadium pentoxide by which it is also known) and value-added ferrovanadium (FeV) are our main products. Vanadium, which adds strength, toughness and resistance to metallic alloys, is used in high strength microalloyed steels and in catalysts that prevent pollution. V <sub>2</sub> O <sub>5</sub> protects eyes from ultraviolet rays
Markets	The joint venture supplies products to crude steel producers and titanium alloy producers in the aerospace industry in Europe, North America, South America and Asia (including Japan and India)

Xstrata Alloys also owns carbon and silicate operations. The Carbon division, made up of African Carbon Manufacturers, African Carbon Union, African Carbon Producers and Char Technology, produces char and electrode paste which it supplies to our ferrochrome operations and markets to other ferrochrome producers in South Africa and Zimbabwe.

<sup>6</sup> UG2 ore is explained in the glossary of terms in this report

<sup>7</sup> See the glossary for a description of a DC arc furnace

\* These figures reflect consolidated 100% of Eland platinum mine and 50% of Mototolo

\*\* This figure reflects Xstrata's 79.5% share of the Xstrata-Merafe Chrome Venture

<b>Xstrata Alloys</b>	
<b>Platinum division</b>	Our growing platinum group metals (PGM) division was established in 2007 with the purchase of Eland Platinum Holdings. In 2010 the division produced saleable platinum production of 117 659 oz*, saleable palladium production of 59 584 oz* and saleable rhodium production of 19 602 oz*
<b>Eland platinum mine</b>	
Nature of business	Pooling and sharing venture Empowerment partners Ngazana Consortium share in 26% of the mine's EBITDA Xstrata Alloys participates in 74% of Eland Platinum's EBITDA
Operations	Opencast platinum mine with production capacity of 200 000 tonnes a month, with an underground mine under construction and a concentrator plant with a designed capacity of 250 000 tonnes a month near Brits, North West province
<b>Mototolo platinum mine</b>	
Nature of business	Joint venture with Anglo Platinum. Xstrata Alloys formed a black empowerment partnership with Kagiso Trust Investments in respect of Xstrata Alloys' 50% interest in the Mototolo Joint Venture. Kagiso Trust Investments acquired a 26% stake in Xstrata's 50% interest in Mototolo, which effectively gives Kagiso a 13% stake in the Mototolo Joint Venture
Operations	Underground bord and pillar mining of platinum group metals
Products and uses	The production of platinum concentrate. PGMs include platinum, palladium, rhodium, iridium, ruthenium and osmium. By-products of PGM operations are nickel, copper, gold and other base metals. PGMs are used in auto catalysts and fuel cells, providing cleaner energy. Other key markets include jewellery and industrial and consumer products
Markets	Sole customer is Anglo Platinum, who refines the product supplied by Eland and Mototolo platinum mines
<b>Xstrata Coal South Africa</b>	
	Xstrata Coal South Africa is the third largest coal exporter in South Africa. Its sales of thermal coal in 2010 amounted to 17.7 million tonnes (11.1 million tonnes were exported and the remaining 6.6 million tonnes was sold on the domestic market)
Nature of business	XCSA has formed a participating coal business with African Rainbow Minerals (ARM) in which XCSA's participation is 79.8%. XCSA also has a 49% shareholding in ARM Coal which in turn has a 51% shareholding in the Goedgevonden mining complex. XCSA has a 20.11% shareholding in the Richards Bay Coal Terminal
Operations	Five mine complexes in the Mpumalanga province of South Africa, consisting of 11 operations, both opencast and underground. 75% of Xstrata Coal South Africa's thermal coal production is exported
Products and uses	Thermal coal, which is used to generate electricity in coal-fired power stations
Markets	Internationally the coal exported by Xstrata Coal South Africa is largely sold on the Atlantic thermal coal market, where Europe is the major export destination, and new emerging markets such as India and China. In South Africa our coal is mainly marketed for use in power stations

There have been no significant changes in the size, structure or ownership of Xstrata Alloys or Xstrata Coal South Africa during the reporting period.

# OUR APPROACH TO SUSTAINABILITY

What we do to maintain standards in our business and manage the issues that could affect the present and future needs of our business and the communities in which we operate

“I am proud of the corporate culture within Xstrata where our focus on value creation for the Group’s owners is linked inextricably to our commitment to the highest standards of integrity and transparency. Notwithstanding the different cultures, customs and laws within which we operate, our principles should never be compromised.” Mick Davis, Chief Executive of Xstrata plc

## OUR SUSTAINABLE DEVELOPMENT FRAMEWORK

	What makes up the framework	What it does	Where to find documents and detailed explanations
Standards	<b>Statement of Business Principles</b> <ul style="list-style-type: none"> <li>- we work ethically</li> <li>- we work responsibly</li> <li>- we work openly, and</li> <li>- we work together and with others</li> </ul>	While Xstrata believes in empowering its operations to act independently, our operations are provided with an ethical framework, our statement of Business Principles, within which they are expected to conduct business	See: <a href="http://www.xstrata.com/content/assets/pdf/x_bp_english_10.pdf">www.xstrata.com/content/assets/pdf/x_bp_english_10.pdf</a> or you can request a copy from any Xstrata operation
	<b>Sustainable Development Policy</b>	Our Sustainable Development Policy sets out the principles we apply to our management of health, safety, people, communities and the environment	See: <a href="http://www.xstrata.com/sustainability/ourapproach/policy/">www.xstrata.com/sustainability/ourapproach/policy/</a> or you can request a copy from any Xstrata operation
	<b>Sustainable Development Standards</b>	Our 17 Sustainable Development Standards provide our operations and projects with a comprehensive set of standards for sustainable development-related topics against which they are audited	See: <a href="http://www.xstrata.com/content/assets/pdf/x_sus_sdstandards2008.en.pdf">www.xstrata.com/content/assets/pdf/x_sus_sdstandards2008.en.pdf</a> or you can request a copy from any Xstrata operation
Measurements	<b>Independent assurance programme</b>	The independent assurance programme provides the Xstrata board and management with information on whether or not the Group’s policies and standards are being met in every operation and project	See the detailed sustainability information on pages 99 to 188 for an explanation of the assurance process and the results of the 2010 audits in Xstrata Alloys and Xstrata Coal South Africa

# STATEMENTS

## STATEMENT FROM THE EXECUTIVE DIRECTOR OF XSTRATA SOUTH AFRICA



We publish our second Sustainability Report at the end of the first five-year review period of the Mining Charter. The Mining Charter recognises the need to secure a social licence to operate from the communities that host our operations through commitments we make in respect of transformation and responsible corporate actions. This, however, is not the only instrument that guides our conduct. In addition to Xstrata's Business Principles we also have our 17 Standards for Sustainable Development which hold every employee of Xstrata accountable for their conduct in this respect. The 17 Standards have stood us in good stead all over the world and South Africa is no exception.

### Taking stock

The first five years of the Mining Charter have been a steep learning experience for us and our stakeholders in government, requiring both parties to combine their planning, resources and efforts to improve socio-economic conditions in our communities. The initial period was spent trying to agree to common priorities, resource allocation and targets for implementation. Notwithstanding the challenges, I am pleased to report that in the period under review, these working relationships have matured, resulting in a level of mutual understanding that has yielded better performance in implementation.

Despite this hard work, the challenges facing communities are still immense. Unemployment, poverty and inequality, in particular among the youth, continue to characterise the lives of millions of citizens, giving the country an immense responsibility to craft a response to all of these. The Mining Charter is one of those responses and the learning of the last five years gives us the insights needed to conceive and implement better interventions in the future.

We have also learnt that in order to give interventions the greatest chance of success, it is necessary for communities to take full ownership of that work. We have made significant progress in this regard by involving community members through community forums which represent the interests of the community. Nevertheless, there is room for improvement to meet changing expectations and conditions in

communities, a task we are absolutely committed to fulfilling as soon as possible.

### Meeting future challenges

The challenges we see today are likely to remain with us for the foreseeable future, but the extent thereof will be determined by the country's collective response to those challenges. The role of Xstrata is to make the best contribution it can towards meeting some of these. Our response will be predicated on the following pillars:

- skills development for our workers and communities
- facilitating greater participation in our procurement chain by designated groups
- investing in the development of enterprises that create more job opportunities
- closer cooperation and co-investment with government and all its development institutions.

Once again, our Business Principles and the spirit of cooperation we have built with our stakeholders in the past will guide us.

### Cooperating and building trust

While the level of cooperation between Xstrata and various local governments and structures has improved significantly in the past year, there is an urgent need to introduce a higher level of innovation in how we leverage our different development programmes. In addition to cooperating with local economic development (LED) plans, it is our desire that, where appropriate, we

also coordinate our work with provincial growth and development strategies, as well as the work of national and provincial development funding institutions. The work that we have to do to fulfil our Mining Charter and other obligations can greatly enhance programmes that are being pursued by the mining industry. It should be possible to combine resources between our peers in the sector and various arms of government to implement community development projects that have a larger footprint and social impact.

To be successful at this work, we have to continue entrenching the bonds of cooperation between Xstrata and its stakeholders. Over time, we hope to build a level of trust that will ensure continued cooperation well into the future.

### **Earning our social licence to operate**

At Xstrata we believe we need a two-pronged approach to ensure we retain our social licence to operate. As we address community needs through our community social involvement programme and the community engagement structures we have put in place, we also need to ensure that communities have the opportunity to participate in our ownership structures and to share in the economic benefits associated with the company's financial success. We are, therefore, particularly pleased to have finalised a transaction which gives the Bakwena-Ba-Mogopa Traditional Community in the Brits area of the North West province a 26% shareholding in our vanadium business.

### **Measuring performance**

While the revised Mining Charter has provided us with a scorecard with which to measure our performance, we will also establish social performance indicators that will allow us, as well as the communities in which we operate, to measure our performance against our commitments. This measurement is critical if we are to earn the credibility and trust we expect our work in the communities to deliver. In future, interventions will partly be approved on the basis of their potential impact on unemployment, skills development, poverty and the successful development of small, medium and micro enterprises. My colleagues at Xstrata Coal and at Xstrata Alloys remain very committed to making a lasting difference in the communities that host our operations, and are passionate about measuring themselves against indicators with real meaning to those communities. This, I believe is what will secure the social license I referred to earlier.

**Andile Sangqu**  
**Executive Director**  
**Xstrata South Africa**

## STATEMENT FROM THE CHIEF EXECUTIVE OFFICER OF XSTRATA ALLOYS



This report is a key component of our commitment to transparency and to providing our stakeholders with the information they require to assess our performance in South Africa as a responsible corporate citizen.

Previously, we reported separately on the sustainability performance of Xstrata Alloys' operations. This year the information covering the sustainability performance of all Xstrata's operations in South Africa has been combined into one report – the Xstrata South Africa Sustainability Report for 2010.

Our commitment to achieving operational excellence in a safe and responsible way benefits all our stakeholders, including

employees, government and the communities that host our operations. Our efficient use of resources, together with the provision of a safe and healthy working environment, contributes to the sustainability of our business and the environment.

### **Economic performance**

Xstrata Alloys substantially improved its financial performance during 2010. The general recovery in the global economy and restocking by our customers created increased demand for the commodities we produce and significantly higher prices<sup>8</sup>.

### **Workplace safety**

Sadly, we did not achieve our target of zero fatalities in 2010. I am very sorry to report that we lost one of our colleagues, Mr Kgokong Simon Malapane, a front end loader driver, who died at the Lion ferrochrome plant during night shift on 14 August 2010. I would like to once again extend my deepest sympathies to his family, friends and the rest of our colleagues at Xstrata Alloys. The incident was thoroughly investigated, and strict measures have been put in place to ensure a similar tragic accident does not occur again at any of our smelting operations.

The Xstrata Group's key performance measurement for injuries is the total recordable injury frequency rate (TRIFR) based on one million hours worked. While we did not achieve our target of 3.9 or less this year, our TRIFR of 4.79 is a 30% reduction on our TRIFR over the past four years.

Our most material sustainable development issues are listed on page 6 to 7 of this report.

Because many of our operations are energy intensive and therefore contribute indirectly to the production of greenhouse gas emissions (GHGs), we are working hard to reduce our consumption of electricity produced from fossil fuels. This year, despite increasing our ferrochrome production by 48% year-on-year, we achieved a 2.4% reduction in the amount of electricity used to produce a tonne of ferrochrome. We are optimistic that the Project Tswelopele pelletising and sintering plant, currently under construction at our Rustenburg ferrochrome plant, will still further reduce our electricity consumption per tonne of product.

We have also considerably reduced the quantity of water we use to produce each tonne of product in our ferrochrome and vanadium operations.

Sustainable development remains a core principle for Xstrata Alloys. I hope this report provides you with insight into our approach and commitment to sustainability. We look forward to receiving your feedback.

**Peet Nienaber**  
**Chief Executive Officer**  
**Xstrata Alloys**

<sup>8</sup> See the Detailed sustainability section on pages 99 to 102 for information on Xstrata Alloys' financial performance and its production for 2010

> Stephen Khosa, Kiln and Leach Manager (left) and General Works Manager, Adriaan Brugman of Rhovan with the plant in the background



## STATEMENT FROM THE CHIEF OPERATING OFFICER OF XSTRATA COAL SOUTH AFRICA



This is the second year that Xstrata Coal SA has provided its South African stakeholders with a report on various issues which may be of interest to them. This report covers our performance for 2010 in the sustainable development arena and our plans for the future.

The health and safety of our people is of utmost priority and the loss of any life at our operations is unacceptable. I deeply regret that we did not achieve our target of zero harm this year. I would like to again extend my condolences to the families and colleagues of Mr Peter Mahlaba, a contractor security officer at the Impunzi East project, and Mr Titos Madala Siwela, a continuous miner operator at the Tavistock Colliery. All critical and high potential risk incidents which occur at Xstrata Coal SA are

thoroughly investigated so as to put controls in place to ensure that similar incidents do not result in harm to our employees.

The Xstrata Group's key performance measurement for injuries is the total recordable injury frequency rate (TRIFR) based on one million hours worked. We were very disappointed not to achieve our target of 1.94 in 2010. However, our TRIFR has consistently remained well below 3.00 for the past three years, and is one of the lowest in the Xstrata Group, the coal industry and the mining industry in general. We are committed to a process of continual improvement in our safety performance and have introduced a new safety initiative, known as SafeCoal. The aim of this initiative is to achieve a fatality-free workplace and a 50% reduction in our 2009 TRIFR performance by the end of 2011. Visible safety leadership is an important part of achieving our SafeCoal goals, as are our key twelve fatal hazard protocols and associated controls, which address the most common risks associated with potential fatalities and injuries in our business and the industry.

We are particularly proud of our efforts to address HIV and AIDS in the workplace as well as our community HIV and AIDS awareness and treatment programme, which has received international recognition. This programme has facilitated healthcare and access to ARV treatment for over 17 000 people who annually visit the six clinics that we built or assisted in upgrading. Via our community engagement forums we also work with communities and local authorities in identifying projects which have a positive impact on the lives of those who live near our operations. The main contributor to greenhouse gas emissions by Xstrata Coal South Africa is

from the diesel consumed by the vehicles we use at our mines. However, when our customers burn the coal they purchase from us to produce energy or steel, this also contributes to the creation of GHGs. We are committed to minimising GHG emissions and improving energy efficiency and recognise the magnitude and importance of this challenge. Xstrata Coal SA supports and invests in the research, development and commercialisation of low-carbon emission technologies that will reduce the impacts associated with our customers' use of the coal we produce, in partnership with other coal producers, governments and scientific and academic organisations.

The need to reduce our fresh water usage is of utmost importance to us. The reduction in our water usage during 2010 resulted in a 32% reduction in the freshwater intensity per Run of Mine (ROM) tonne of coal we produced in 2010. Likewise managing our mining footprint on the areas we disturb is a key focus area and the management systems around rehabilitation are designed to ensure that this remains up to date and to the required standard.

Xstrata Coal South Africa is committed to achieving operational excellence, ensuring the health and safety of our people, to supporting our communities and carefully managing the impact our business has on the environment. A sustainable business is the only road to ultimate success.







**Murray Houston**  
**Chief Operating Officer**  
**Xstrata Coal South Africa**

## OUR PERFORMANCE AGAINST OUR TARGETS FOR 2010 AND THE TARGETS WE HAVE SET FOR 2011

2010 targets	2010 performance		2011 targets
	Xstrata Alloys	Xstrata Coal	
<b>Assurance and strategy targets</b>			
Sustainable development improvement plans for all operations and projects reviewed by business unit management and a consolidated report submitted to the Group Executive and the Board Health, Safety, Environment and Community (HSEC) Committees in 2010	✓	✓	Site sustainable development improvement plans will be reviewed by commodity business management and consolidated reports will be submitted to the Group Executive and the HSEC Committee
Third party Sustainable Development Standards audits at least once every three years with findings presented to the Xstrata plc Board HSEC Committee	Scheduled for 2011	Scheduled for 2011	Third party Sustainable Development Standards audits at least once every three years with findings presented to the Xstrata plc Board HSEC Committee
Group Internal Audit to conduct annual in depth audits of prioritised sustainable development risks with findings presented to the Board's Audit and HSEC Committees	✓	✓ Conducted in 2010	Group Internal Audit to conduct annual in depth audits of prioritised sustainable development risks with findings presented to the Board's Audit and HSEC Committees
All operations to achieve more than 65% in their Sustainable Development Standards audits	✓	Not conducted in 2010	Health, safety, environment and community elements in individual standards to score >50% in third party SD standards audits.
All managed operations to review closure plans annually			All managed operations to document an annual review of site closure plans
			All managed operations to maintain risk-based internal and external audit schedules for major waste storage facilities.
<b>Safety targets</b>			
No fatalities	✗ One fatality at Lion ferrochrome plant	✗ Two fatalities: one at Impunzi East Project and one at Tavistock underground	No fatalities
No safety fines, penalties or prosecutions	✓	✓	No safety fines, penalties or prosecutions

2010 targets	2010 performance		2011 targets
	Xstrata Alloys	Xstrata Coal	
<b>Health targets</b>			
Ongoing target to reduce the number of employees exposed to material occupational health hazards	✓	✓	All businesses to complete annual reviews of site management plans for material occupational health hazards
Zero cases of occupational illness/disease from exposure to current occupational hygiene hazards	✗ Target not achieved. 24 occupational health illnesses/diseases reported in 2010	✓	Zero cases of occupational illness/disease from exposure to current occupational hygiene hazards
All sites to implement and/or maintain wellness or fit-for-work programmes	✓ All sites implemented wellness/fit-for-work programmes	✓ All sites implemented wellness/fit-for-work programmes. Code of practice for medical surveillance in place and process is on track	All sites to maintain and develop wellness or fit-for-work programmes
All businesses to continue to support and promote major community health programmes	✓	✓	All commodity business units to document an annual review of climate change strategy, targets and plans
<b>Climate change and energy</b>			
Annual review of businesses' climate change strategy and plans	✓	✓	Annual review of businesses' climate change strategy and plans
All managed operations to meet site energy and carbon intensity reduction targets	✓	✗	All managed operations to meet site energy and carbon intensity reduction targets
<b>Biodiversity conservation</b>			
No loss of International Union for the Conservation of Nature and Natural Resources (IUCN) Red list™/endangered species on operations or projects	✓	✓	No loss of International Union for the Conservation of Nature and Natural Resources (IUCN) Red list™/endangered species on operations or projects










2010 targets	2010 performance		2011 targets
	Xstrata Alloys	Xstrata Coal	
Review biodiversity conservation and land management plans annually	✓	✓	Xstrata Alloys has set new target requiring each site to have a rehabilitation project by end 2011 which will be implemented in 2012 and verified by 2013
<b>Water management</b>			
All operations in water scarce regions to maintain a water management plan with targets to reduce water intensity	✓ 100% of sites implemented and maintained water management plans during 2010. All sites established targets to reduce water intensity	✓ 100% of sites implemented and maintained water management plans during 2010. All sites established targets to reduce water intensity	All managed operations in water scarce regions to document a review of their water management plan including targets to reduce water intensity
<b>Environment</b>			
No Category 3, 4 or 5 environmental incidents	✓	✓	No Category 3, 4 or 5 environmental incidents The same as for previous year
No environmental fines or prosecutions	✓	✓	No environmental fines or prosecutions
All managed operations to maintain waste management plans with waste to landfill reduction targets	✓	✓	All managed operations to maintain waste management plans with waste to landfill reduction targets
<b>Social</b>			
Set aside a minimum of 1% of annual Group profit before tax for corporate social involvement	✓ 1.2% of Group profit set aside in 2010 (US\$ 84 million)	✓	Set aside a minimum of 1% of annual Group profit before tax for corporate social involvement

2010 targets	2010 performance		2011 targets
	Xstrata Alloys	Xstrata Coal	
Stakeholder engagement plans reviewed annually	 76% of sites reviewed their stakeholder engagement plans during 2010. Sites which have reviews outstanding include Boshhoek, Eland, Horizon mine and Boshhoek mine	 Process completed	All managed operations and projects to document an annual review of their stakeholder engagement plans
<b>Security and human rights</b>			
All business units to report on the implementation of the Voluntary Principles for Security and Human Rights	 Voluntary Principles for, see p4 Security and Human Rights implemented		All businesses to document an annual review of their compliance with the Voluntary Principles for Security and Human Rights
All operations in human rights risk areas to complete training for third party security personnel	 100% of sites completed training for third party security personnel	 Training included in induction	All managed operations in high human rights risk areas to provide human rights training to all new third party security personnel prior to deployment

>  
Alina Sekhoakane, Group Safety  
Manager at Xstrata Coal South Africa













## XSTRATA ALLOYS' PERFORMANCE AGAINST THE TARGETS IT SET FOR ITS OPERATIONS

2010 targets	Performance against target	2011 targets
<b>Safety</b>		
10% reduction in total recordable injury frequency rate (TRIFR*) – 3.9 or less	4.79 	19% reduction on 2010 TRIFR (3.9 or less)
10% reduction in lost time injury frequency rate (LTIFR**) – 1.0 or less	1.09 	17% reduction on 2010 LTIFR (0.98 or less)
86% reduction in disabling injury severity rate (DISR***) – 65 or less	102.80 	42% reduction on 2010 DISR (65.11 or less)
<b>Health</b>		
100% of HIV-positive employees registered in treatment; 2010 target: 90% of HIV-positive employees	62% of HIV-positive employees registered in treatment programme during 2010 	100% of HIV-positive employees registered in treatment; 2010 target: 90% of HIV Positive – employees
Include TB awareness and prevention in wellness programme at all operations	100% of sites have included TB awareness and prevention in wellness programmes 	Continuation of awareness programmes at 100% of operations
No employees exposed to more than 0.05mg/m <sup>3</sup> vanadium	No employees exposed to >0,05mg/m <sup>3</sup> vanadium in 2010 	No employees exposed to more than 0.05mg/m <sup>3</sup> vanadium
100% personal dust exposure less than 2mg/m <sup>3</sup>	Target not achieved. Cases of personal dust exposure above 2mg/m <sup>3</sup> recorded at Lydenburg, Eland and Wonderkop for 2010 	100% personal dust exposure less than 2mg/m <sup>3</sup>
Achieve full compliance with hearing conservation programmes	Although hearing conservation programmes were implemented we have seen an increase in historic noise-induced hearing loss cases approved by the Compensation Commissioner 	Achieve full compliance with hearing conservation programmes
<b>Climate change and energy</b>		
5% reduction in carbon intensity (per tonne of product) over 2005 performance by 2010 with specific targets at each operation	18% of sites achieved the 5% reduction in carbon intensity over 2005 performance by 2010 	All managed operations to have site energy and carbon intensity reduction targets






2010 targets	Performance against target	2011 targets
<b>Climate change and energy (continued)</b>		
5% reduction in energy intensity (per tonne of product) over 2007 performance by 2012 with specific targets at each operation	✔ 41% of sites have already achieved a 5% reduction in energy intensity over 2007 by 2010	Xstrata plc identified opportunity for Xstrata Alloys to set more challenging targets – 10% reduction by 2013
Conduct annual review of climate change strategy	✔	Conduct annual review of climate change strategy
<b>Water management</b>		
Achieve a 5% reduction of fresh water intensity (per tonne of material produced) on 2007 performance by 2010 All operations have set site targets	✔ 76% of sites met the 5% reduction in fresh water intensity. Sites which have not achieved the reduction include: Rustenburg, Horizon, Boshhoek mine and Kroondal mine	Xstrata plc identified an opportunity for Xstrata Alloys to set more challenging targets – suggested target of 10% reduction by 2013
<b>Environment management</b>		
10% improvement in waste recycling and reuse	✘ Target not achieved. Only 47% of sites achieved 10% improvement in waste recycling and reuse	10% improvement in waste recycling and reuse
<b>Social</b>		
CSI plans measured annually against established parameters such as: alleviate hunger and poverty (target 11%); improve education (target 27%), public health (target 7%), enterprise development (target 19%), capacity building (target 9%), economic growth (target 12%)	✔ CSI achievements – alleviate hunger and poverty: 12%; improve education: 31%, public health: 10%, enterprise development: 25%, capacity building: 15%, economic growth: 15%	CSI plans measured annually at a CBU level against established parameters: alleviate hunger and poverty (target 15%); improve education (target 35%), public health (target 10%), enterprise development (target 25%), capacity building (target 15%), economic growth (target 15%)
<b>Security and human rights</b>		
No infringement of human rights	✔ No infringement of human rights during 2010	No infringement of human rights

- \* *The total recordable injury frequency rate (TRIFR) = the number of lost time injuries (LTIs) + the number of restricted work injuries (RWIs) + the number of medical treatment injuries per million hours worked*
- \*\* *A lost time injury is an occupational injury or illness that results in days away from work on any rostered shift after the shift on which the injury occurred. The lost time injury frequency rate (LTIFR) = the number of lost time injuries per million hours worked*
- \*\*\* *The disabling injury severity rate (DISR) = days lost to disabling injuries per million hours worked*

## XSTRATA COAL SOUTH AFRICA'S PERFORMANCE AGAINST THE TARGETS IT SET FOR ITS OPERATIONS

2010 targets	Performance against target	2011 targets
<b>Safety</b>		
Total recordable injury frequency rate (TRIFR) of 1.94	2.91 	50% reduction on 2010 TRIFR (1.29)
Lost time injury frequency rate (LTIFR) of 1.25	2.19 	33% reduction on 2010 LTIFR (0.83)
Disabling injury severity rate (DISR) – 70.1 or less	89.05 	15% reduction on 2010 DISR (70.1)
<b>Health</b>		
HIV-positive employees registered for treatment 2010 target: 60% of HIV-positive employees	63% of HIV-positive employees registered for treatment programme during 2010 	65% of HIV-positive employees in treatment
90% of employees and contractors participate in VCT	90% 	+90% of employees know their status
90% of personal dust exposure among employees less than 2mg/m <sup>3</sup>	91% 	90% of personal dust exposure among employees less than 2mg/m <sup>3</sup>
90% compliance with exposure monitoring plan	More than 90% achieved 	Full compliance with exposure monitoring plan
HSEC legislative review every three years	n/a	To be done in 2011
Develop and implement HSEC assurance matrix	100% 	Complete HSEC assurance matrix
<b>Climate change and energy</b>		
Develop regional climate change strategy aligned to Xstrata Coal strategy Climate change strategy and plans for the business will be reviewed	60% of target achieved. Workshop held with Xstrata Coal and part of Chamber of Mines working group. Strategy still to be developed 	Develop a regional climate change strategy aligned to Xstrata Coal strategy Energy intensity plans and targets will be reviewed
Annual review of energy efficiency action plans	Efficiency plans developed and review of plans to be done 	

2010 targets	Performance against target	2011 targets
<b>Climate change and energy (continued)</b>		
Contribute and participate in greenhouse gas abatement and research projects	✓	Support GHG abatement research projects
2% reduction in energy intensity, based on 2009 data – 92.6 (MJ/ROM tonne)	✗ 101.64 MJ/ROM tonne (megajoule per run of mine tonne of coal) achieved as a result of increase in diesel usage	Energy intensity plans and targets will be reviewed
<b>Water management</b>		
Develop water strategy and annual plan as per LOM process	✓ Included as part of LOMP (life of mine plan)	
Achieve a 10% reduction of fresh water intensity based on 2006 performance – 43 litres per ROM tonne	✓ 42.3 litres per ROM tonne of material produced	Continue the five-year water reduction target to end of 2011
<b>Environment general</b>		
3% reduction in waste to landfill (4 621 tonnes)	✓ 3 769 reduction of tonnes achieved	3% reduction in 2010 performance (3 656 tonnes)
No Category 3, 4, or 5 environmental incidents	✓	No Category 3, 4, or 5 environmental incidents
Zero fines, penalties or prosecutions	✓	Zero fines, penalties or prosecutions
<b>Social</b>		
Implement Xstrata Coal social involvement plan	✓ Implemented plan	Plan to be reviewed
Set aside a minimum of 1% of earnings before interest and tax (EBIT) for corporate social involvement	✓	Set aside a minimum of 1% of earnings before interest and tax (EBIT) for corporate social involvement
Stakeholder engagement plans reviewed annually	✓ Process completed	Review stakeholder engagement plan
Annual review of social involvement plan including communication of community social investment	✓ Review completed	The CSI programme will be implemented and maintained
Conduct community surveys every three years (completed in 2010)	✓ Included in budget and action plan	Conduct community survey in 2013
Conduct community complaints awareness campaign	✓ Included as part of community days held at complexes	Conduct community complaints awareness campaign

2010 targets	Performance against target	2011 targets
<b>Social</b>		
Procurement expenditure from BEE suppliers >50%	60% 	Procurement expenditure from BEE suppliers >60%
<b>Biodiversity conservation</b>		
No loss of IUCN Red List or endangered species	No loss recorded 	No loss of IUCN Red List or endangered species
Review biodiversity conservation and land management plans	Completed 	Review biodiversity conservation and land management plans
Third party rehabilitation reviews	Completed 	Compliance with rehabilitation targets for levelling, topsoiling and seeding
<b>Security and human rights</b>		
Implement the Voluntary Principles for Security and Human Rights	Action plan implemented 	Implement the Voluntary Principles for Security and Human Rights
Commission human rights training for third party security personnel		Commission human rights training for third party security personnel

&gt;

Kroondal underground chrome mine, North West province



# ECONOMIC PERFORMANCE

Creating value for all our stakeholders

## OUR APPROACH TO BUSINESS

Xstrata's commodity business units are responsible for all aspects of their business. This decentralised business model focuses accountability and responsibility at the local level, ensuring that decisions are made where the best information is available. The model creates a strong sense of ownership and empowers our operational management, working within a clearly defined governance structure, to take proactive and prompt decisions on operational, community, environmental and people issues and to build meaningful partnerships with local stakeholders at a site or divisional level.

Our philosophy is to achieve operational excellence by continually making small improvements that reduce our operating costs, extend the life of our mines and improve our productivity. We also operate in line with leading practice social and environmental standards.

## OUR PERFORMANCE IN 2010

Following the global financial crisis, which had a very negative effect on the performance of mining companies, the pace of the world economic recovery in 2010 was better than expected. This was due to growth in developing markets like China and India and restocking in more mature markets, such as the United States

of America and Europe. Overall, the outlook for commodity demand in 2011 remains positive, although economic growth is likely to be more moderate than in 2010.

The amount of income we earn from the ferrochrome and coal we produce depends largely on the prices we are paid for them. They are both globally traded commodities and as a result we do not control their prices. These are affected by global economic conditions, in particular industrial production, which drives demand for both these commodities and the availability of the commodity.

> Ferrochrome being stockpiled at the Xstrata-Merafe Chrome Venture's Lion ferrochrome plant, Mpumalanga province

## OPERATING PROFIT/LOSS

	2010 operating profit/loss	2009 operating profit/loss
Xstrata South Africa	R3.3 billion	R741 million
Xstrata Alloys	R2.6 billion	-R193 million
Xstrata Coal South Africa	R747 million	R934 million

The operating profit of Xstrata South Africa's businesses was adversely affected by the strengthening of the South African rand against the US dollar.



## VALUE ADDED BY XSTRATA SOUTH AFRICA IN 2010



● Payments to government (royalties and taxes)	R22 085 874
● Employee wages and benefits	R3 642 588 377
● Payments to providers of capital (dividends, cash distributions and interest)	R102 354 757
● Community investment (cash spent)	R153 902 483
● Capital expenditure	R4 895 769 665
● Economic value retained	R4 069 287 609

A stream of molten ferrochrome is tapped from a furnace at the Lion Ferrochrome plant, Limpopo province >



## HIGHLIGHTS

# 48%

**increase in ferrochrome production year-on-year**

# 46%

**increase in the average European benchmark price for ferrochrome**

# 21%

**increase in demand for ferrochrome**

- Vanadium pentoxide volumes were 90% higher and ferrovanadium production increased by 89% in comparison with 2009
- Operating profit for the Platinum division increased by 67% because of a 24% increase in the platinum group metals (PGMs) prices realised in 2010
- Xstrata Alloys achieved real cost savings of R564 million by further improving our electrical energy efficiencies (see the case study on energy efficiencies on page 78 of this report), scheduling maintenance during the higher cost electricity tariff months and reducing the use of high cost metallurgical coke in our reductant<sup>9</sup> mix
- Xstrata Coal South Africa achieved real cost savings of R257 477 447. These were achieved through the ramp up of Goedgevonden mine and the ongoing process of transforming our operations into three large-scale lower cost, primarily opencast mining complexes
- Xstrata Coal South Africa achieved higher average prices per tonne by increasing its export sales and by selling a significant portion of our export coal into the stronger Asian market

## CHALLENGES

- Disappointing safety performance with fatalities at three of our operations
- Platinum group metals volumes were 11% lower because of a reduction in head grade at Eland platinum mine. This was a result of the opencast mining operations progressing eastwards into a lower grade resource block
- Eland platinum mine experienced challenges due to poorer than expected ground conditions
- Xstrata Coal South Africa's production was down 11% and profit was down by 8% because of rail infrastructure constraints, production issues that included flooding at our opencast operations and industrial action at the Southstock colliery

<sup>9</sup> Reductants are the reducing agents used in our furnaces in the production of ferrochrome

**Average prices we obtained for our commodities**

Commodity	2010 prices	2009 prices
The prices for ferrochrome and vanadium are indicative average prices published in the Metal Bulletin		
Ferrochrome	124.3 (cents/lb)	85.0 (cents/lb)
Ferrovanadium	30.1 (\$/kg)	25.0 (\$/kg)
Vanadium pentoxide (V <sub>2</sub> O <sub>5</sub> is the chemical formula for vanadium pentoxide by which it is sometimes known)	6.9 (\$/lb)	6.0 (\$/lb)
Platinum – Average price on the London Platinum and Palladium Market	1 611 (\$/oz)	1 205 (\$/oz)
Palladium – Average price on the London Platinum and Palladium Market	527 (\$/oz)	264 (\$/oz)
Rhodium – Average price (Johnson Matthey)	2 406 (\$/oz)	1 559 (\$/oz)
South African thermal coal	74.4 (\$/tonne)	68.1 (\$/tonne)

**Production**

Commodity	2010	2009
<b>Ferroalloys division</b>		
Ferrochrome (kt) <sup>10&amp;11</sup>	1 165	786
Ferrovanadium (k kg)	4 311	2 284
Vanadium pentoxide (V <sub>2</sub> O <sub>5</sub> )	21 874	11 492
<b>Platinum group metals division</b>		
Platinum in ounces (oz)	117 759	132 969
Palladium (oz)	59 584	67 435
Rhodium (oz)	19 602	21 182
<b>Xstrata Coal South Africa*</b>		
Thermal export sales (million tonnes)	11.1	11.9
Thermal domestic sales (million tonnes)	6.8	8.0

\* These figures show an 11% drop in sales during 2010. This drop was the result of rail infrastructure constraints, production issues that included flooding at opencast operations and industrial action at Southstock Complex

<sup>10</sup> A kilotonne is equal to 1 000 metric tonnes and a metric tonne is equal to 1 000 kilograms

<sup>11</sup> This figure is for Xstrata's 79.5% share of the Xstrata-Merafe Chrome Venture



> Men at work at Lion ferrochrome plant, Limpopo province

## Developments

The Horizon chrome mine development remains on schedule to reach a production capacity of 40 000 tonnes a month by the end of 2013. Xstrata Alloys completed the Magareng mine development in Limpopo province during the year.

The Xstrata-Merafe Chrome Venture approved the construction of Project Tswelopele, a new 600 000 tonnes a year pelletising and sintering plant at the Rustenburg ferrochrome plant. The plant, with a capital cost of approximately R834.5 million, is expected to be fully operational in 2013.

The Xstrata board approved the second phase of our Lion ferrochrome plant in Limpopo province in October 2010. Work on the construction of this smelter, which will have the capacity to produce 360 000 tonnes of ferrochrome a year, began in the first quarter of 2011.

At Eland platinum mine the development of the underground mine is progressing. Some challenges have been experienced due to poorer than expected ground conditions. The initial product from the first mining level is expected during the first quarter of 2011.

The ATCOM East project was 57% complete at the end of December and its coal preparation plant is on schedule to be


commissioned in 2011. The plant has the capacity to produce 4 million tonnes of coal a year.

The feasibility study into the expansion of our Tweefontein mine, which is expected to increase production by 4 million tonnes a year is scheduled to be completed during 2011. This project includes large scale opencast mining and a new coal handling and preparation plant, which will increase yields and reduce train handling times.

(See the detailed sustainability information section on pages 99 to 102 for more detailed information on our financial performance in 2010).

>

The t-shirts provided to children attending a holiday school programme run by the South African Business Coalition on HIV and AIDS which was funded by Xstrata Alloys



**I am Responsible, South African  
Business is taking Responsibility**

# SOCIAL SUSTAINABILITY

## THE WORKPLACE

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### **SAFETY**

Material issue:

- The safety of our employees and our contractors

### **HEALTH AND WELLBEING**

Material issue:

- Health of our employees and contractors; the main concerns being occupational illnesses and health epidemics, in particular HIV/AIDS and tuberculosis

### **EMPLOYEES**

Material issues:

- Attraction and retention of critical skills
- Development and training
- Diversity and equal opportunity
- Labour peace

## COMMUNITY

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Material issues:

- Community impacts and benefits
- Public health epidemics: HIV/AIDS and tuberculosis
- Community consultation
- Programmes benefiting society and communities
- Safeguarding human rights

# THE WORKPLACE

## Our approach

- We aim to operate a safe and healthy workplace, based on mutual respect, fairness and integrity
- Our most important objective is to operate with no fatalities or injuries. We believe that every work-related illness and injury is preventable
- We support initiatives that address major community health issues and enhance the wellbeing of our employees
- We value diversity in the workplace and support the aims of South Africa's revised Mining Charter
- We uphold the rights of our employees to freedom of association and we do not tolerate any form of discrimination
- We treat all employees and contractors fairly, providing equal opportunities at all levels of our organisation
- We follow local and international employment guidelines and employment legislation, including the South African Basic Conditions of Employment Act (1997) and the International Labour Organisation's guidelines



>  
Students busy with an electrical trade test at Steelpoort Development Centre, Steelpoort, Limpopo province

# SAFETY

## CHALLENGES

- Eliminating fatalities and serious injuries
- Understanding the root causes of near misses and actual incidents and using the learning from this understanding to prevent fatalities and serious injuries
- Continuing to reduce the frequency of injuries, particularly in operations that have already achieved low injury frequency rates

## PROGRESS

While we have managed to achieve a reduction in fatalities, injuries and high potential risk incidents, we are disappointed that neither Xstrata Alloys nor Xstrata Coal South Africa achieved the targeted reduction in their total recordable injury frequency. We will be working hard to change this in 2011.

### 57%

reduction in Xstrata South Africa's fatalities since 2005

### 49%

reduction in our total recordable injury frequency rate (TRIFR) since 2005

### 46%

reduction in our high potential risk incidents since 2005

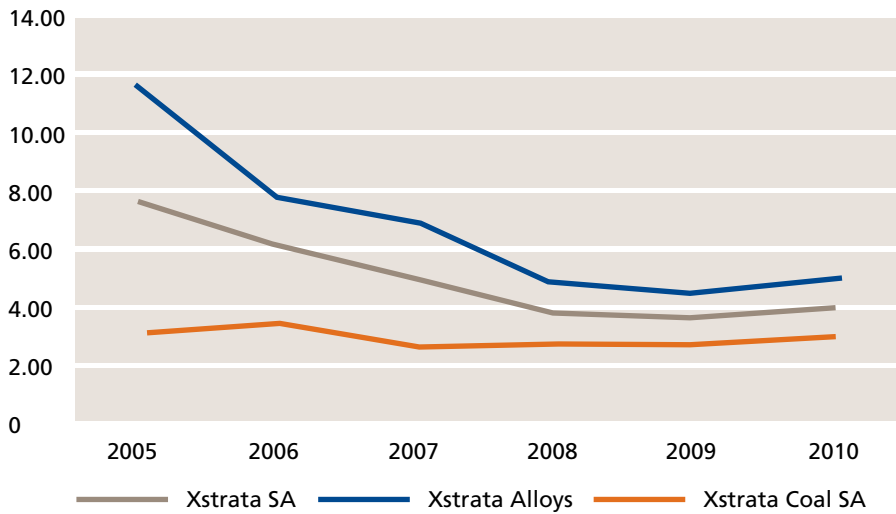


### In honour of our colleagues who lost their lives in 2010

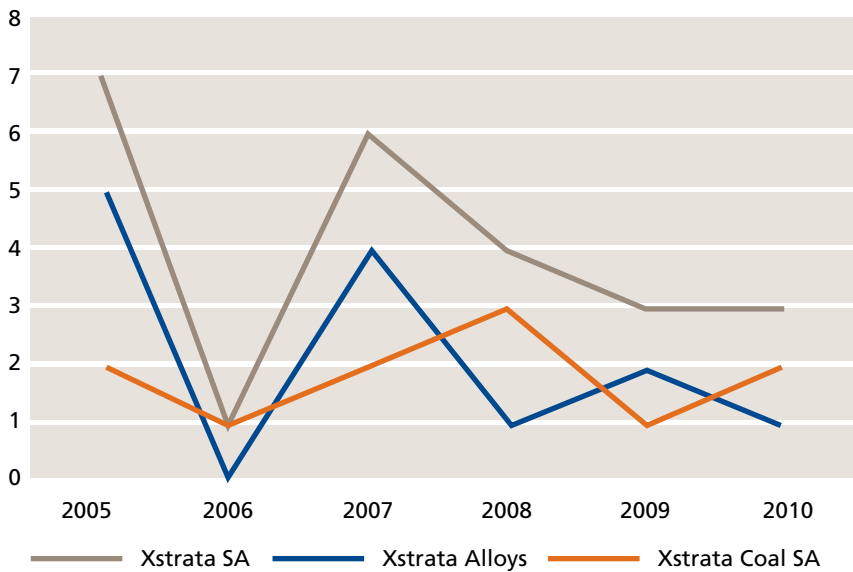
Xstrata Alloys extends its deepest sympathies for their tragic loss to the family and colleagues of Mr Kgokong Simon Malapane, a front end loader (FEL) driver who died at the Lion ferrochrome plant during night shift on 14 August 2010.

Xstrata Coal South Africa extends its deepest sympathies for their tragic loss to the families and colleagues of Mr Peter Mahlaba, a contract security officer at the Impunzi East project, and Mr Titos Madala Siwela, a continuous mine operator at the Tavistock colliery.

**Xstrata South Africa Total recordable injury frequency rate**



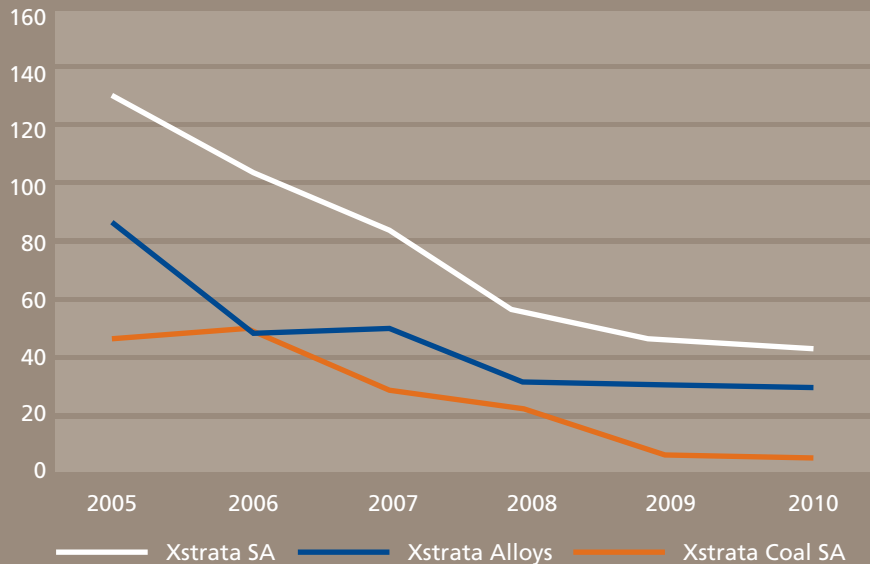
**Fatalities in South Africa since 2005**



Blaster Nomaswazi Maluleka,  
Goedgevonden Complex

The word "fatality" is used to describe death as a result of an accident, in war or from disease

## High potential risk incidents



# 49%

reduction in our total recordable injury frequency rate (TRIFR) since 2005

# 46%

reduction in our high potential risk incidents since 2005

### The mining and processing environment

To mine and process the minerals and rock (in the form of coal) that we extract from the earth, we need to work underground, up high, or in confined spaces, using explosives and chemicals, operating high voltage equipment, heavy machinery and large mobile equipment such as front-end loaders, trucks, etc. These are all hazardous activities and we need to do everything in our power to make our operations as safe as possible.

### What we are doing to make our operations safer

#### Policy and approach

Safety is always the direct responsibility of Xstrata's senior management. We recognise that our senior leaders are ultimately responsible for providing the leadership, systems and processes for the prevention of incidents and the elimination of fatalities. Our formal management structure documents responsibility for safety from the Xstrata plc board down to each individual employee and contractor.

Health and safety agreements have been concluded between the trade unions and Xstrata Alloys and Xstrata Coal South Africa.

The sustainable development policies in place in our South African operations are adapted from of the Xstrata Group Sustainable Development Policy. They set out our commitment to zero injuries or fatalities. We would refer you to the Xstrata Sustainable Development Standards: 3. Behaviour, awareness and competency, 4. Communication and engagement, 5. Risk and change management, 6. Catastrophic hazards and 15. Incident management. For more detailed information on our approach to safety management, see:

[www.xstrata.com/sustainability/ourapproach/standards/](http://www.xstrata.com/sustainability/ourapproach/standards/)

See the diagram explaining the formal management structure which documents responsibility for safety from the Xstrata plc board down to each individual employee and contractor in the Detailed sustainable information section on page 142

## SAFECOAL

The SafeCoal initiative is moving safety in Xstrata Coal to the next level of safety performance. Globally, Xstrata Coal sites are seeing positive results from the implementation of the SafeCoal initiative. SafeCoal was introduced in 2009 after Xstrata Coal fatalities and a slowdown in progress on reducing injury rates. Its Chief Executive, Peter Freyberg, demonstrated his commitment to SafeCoal by travelling to every region where the business unit operates to roll out the initiative.

**The four elements making up SafeCoal are:** Reduction of total recordable injury frequency rate (TRIFR) by 50% over a two-year period with the baseline being the 2009 performance. Zero fatalities is also part of this goal.

**Focus on fatal hazards.** All employees are trained to understand the fatal hazards associated with their workplace. Xstrata

Coal has developed 12 fatal hazard protocols which apply across the business unit. These protocols establish the minimum requirements for managing these hazards.

**Streamlining sustainable development systems.** All sites are reviewing and streamlining their sustainable development management systems to find ways of reducing office time for key employees. The purpose is to give these employees more time in the field observing safety behaviour and intervening when they observe unsafe behaviour.

**Consistent communication.** The purpose of the SafeCoal 'brand' is to reinforce the safety message and provide workers with a common language around safety that they all understand.

If you stop a worker at any of Xstrata Coal South Africa's operations and ask them what SafeCoal is, the answer comes out as easily as their first names. Each worker carries a card which highlights fatal hazards of which they should be aware.

Alina Sekhoakane, Group Safety Manager at XCSA, has been at the forefront of ensuring that goals which SafeCoal has set are implemented and achieved.

"SafeCoal is achieved when everybody at every level in our business fully applies themselves to the goal. To enable and empower people to do this, we need to ensure that they are well led and that they have the best possible systems, tools, knowledge and skills," said Sekhoakane.

Every month a safety topic is chosen by management and discussed in workgroups to evaluate employees' knowledge of fatal hazards and the controls within their workplace. Feedback from those discussions is then distributed through a daily newsletter.

*"This is one way of keeping our goal alive and making sure that no one forgets to put safety at the top of their priority list,"* said Sekhoakane.

### How we applied learning to see danger before it happens

A fall of ground resulted in fatalities in one of the Xstrata-Merafe Chrome Venture's underground chrome mines. We hired leading experts to study and advise on the geological structure of the Bushveld Igneous Complex to help us improve strata<sup>13</sup> control and prevent roof falls. We collaborate with an equipment manufacturer who adapted ground-penetrating radar (GPR) to give our rock engineers 'x-ray vision'. The GPR allows us to identify potential danger and change the layout of mines to avoid these dangers. The technology is now being used in all Xstrata Alloys' operations.



<sup>13</sup> Strata are the layers of which sedimentary rock is formed

<sup>14</sup> See the glossary for an explanation of high potential risk incidents and near misses

### How we measure injuries in our operations

Our key performance measure for injuries is the total recordable injury frequency rate (TRIFR) which measures injuries per one million hours worked. This measure includes employees' and contractors' lost time injuries, medical treatment injuries and restricted work injuries. It is a more complete measure of safety performance than lost time injuries alone. As part of our business processes, we analyse the root causes of incidents causing injury and develop appropriate programmes to understand, address and eliminate the underlying causes.

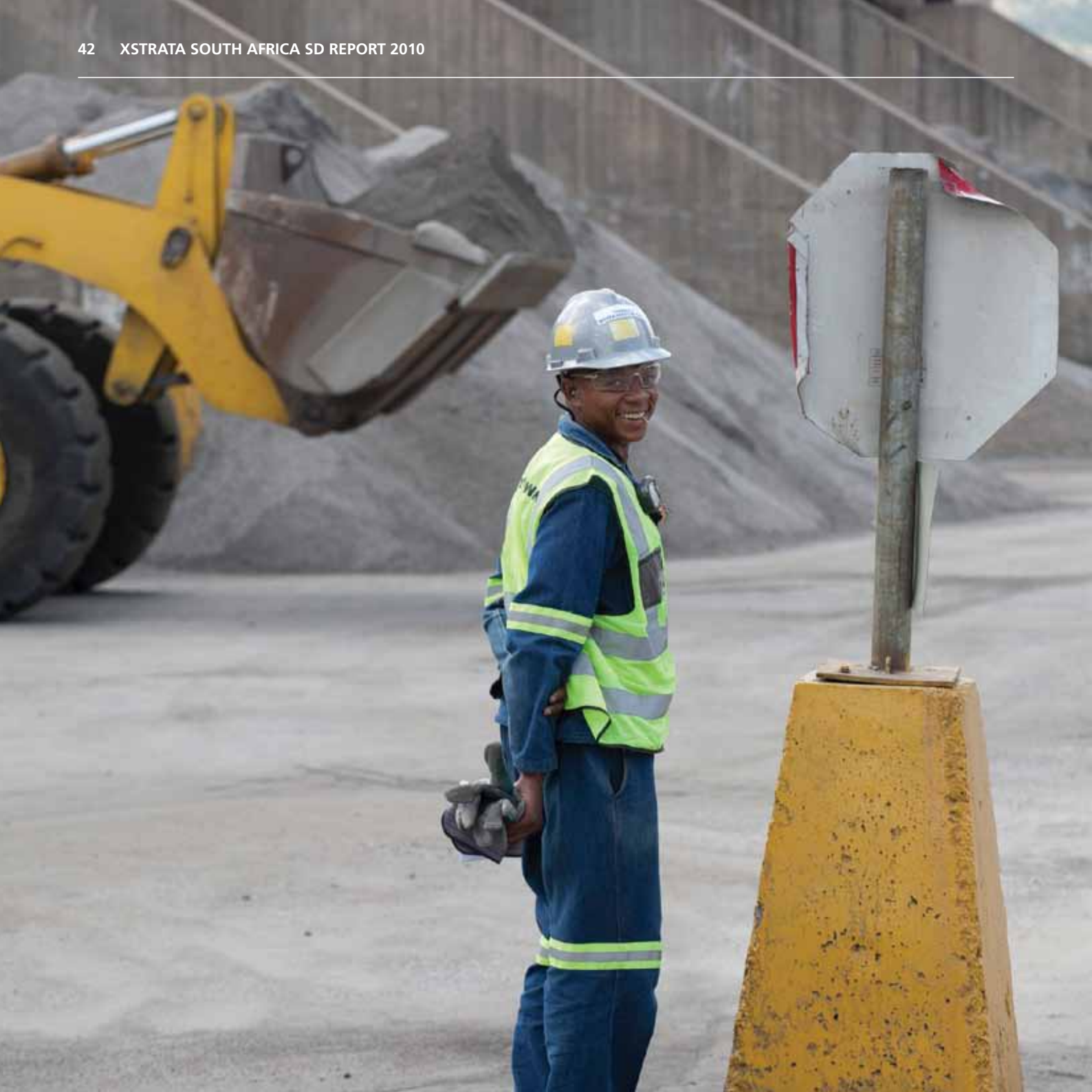
### Making our operations safer by sharing knowledge and learning from others

Our board and Executive Committee strongly encourage transparent reporting and pro-active knowledge sharing across the Xstrata Group. By making it compulsory to report high potential incidents<sup>14</sup> and actively encouraging the reporting of these incidents, including near misses, we have developed a global reporting culture that provides management with a clear indication of the effectiveness of our controls. It also allows us to implement improvements that could prevent future incidents. All incidents, including near misses, are investigated. They are reported to the Group Executive Committee and discussed by the Committee every month. Lessons learnt are shared across the Group during monthly sustainable development conference calls and through the Group-wide circulation of good practices.

We use external experts to advise us on our control of major hazards and, where necessary, commission research into hazards that are not well understood.



The plant at Goedgevonden complex, Mpumalanga province



## Rewarding safety performance

Our reward systems are structured to focus on key safety performance indicators. Our succession planning and promotion criteria include key safety elements. Safety performance can affect the variable remuneration<sup>15</sup> of all employees from executive management to mineworkers.

## The impact of culture and behaviour on safety

Safe behaviour depends on many different things including corporate culture, leadership and management styles, employees' personal circumstances and beliefs, training, systems and procedures and the nature of relationships between employees, contractors and management.

Xstrata realised that it had a particular challenge in its South African operations, because the majority of the Group's fatalities and high potential risk incidents were occurring here. We needed to find out why this was the case and find ways to reduce these incidents. Our research showed that while there were physical hazards we could reduce to improve safety performance, cultural and behavioural factors played a major role in the poor safety performance of our South African operations.

These included the fact that most South Africans live in a high-risk environment

which tends to reduce their responses to the potentially harmful situations that can be found in a mining environment. The over-eagerness of our supervisors and operators to complete the job was another contributing factor.

The behavioural training programmes we use to train people in safe behaviour have been designed to address cultural and behavioural issues. Our adult basic education and training (ABET) programmes are helping to improve literacy levels and understanding in the workplace.

## Establishing a safety culture

We have put considerable effort into embedding a safety culture in our operations. Our leaders know that it is their responsibility to demonstrate their commitment to safety. For example, they are expected to put safety before production or other considerations and they are expected to personally endorse safety initiatives and engage with employees at all levels to discuss safety issues and priorities.

Creating a safety culture depends on the establishment of a just culture (as opposed to a blame culture). This will make it easier for people to come forward and report incidents, errors and mistakes, knowing they will be treated fairly. We also want to facilitate a culture in which employees and contractors feel they can challenge

unsafe behaviour and where our people take personal responsibility for their own safety and that of their colleagues. As part of this process we assess accountability, responsibility and consequences in the context of each situation and determine the underlying causes of incidents.

## Management systems

Xstrata's operations maintain formal safety and risk management systems which are aligned to the international standards OHSAS<sup>16</sup> 18001 and ISO 31000<sup>17</sup>.

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**Maintain formal safety and risk management systems which are aligned to the international standards**

# OHSAS 18001 and ISO 31000



<sup>15</sup> Variable remuneration is remuneration received over and above an employee's basic salary. This can be based on individual performance, the safety performance of the business unit of the employee, the profitability of the business unit, etc

<sup>16</sup> OHSAS (Occupational Health & Safety Advisory Services) 18001 is an internationally recognised assessment specification for occupational health and safety management systems. It was developed by a selection of leading trade bodies, international standards and certification bodies

<sup>17</sup> ISO (International Organisation for Standardisation) 31000 provides principles and generic guidelines on risk management

# Case Study

## What happens when there is a fatality in Xstrata Alloys

Xstrata's Sustainable Development Standard 15 sets out the requirements and expectations for incident management and reporting in the Xstrata Group<sup>18</sup>.

After a fatality in one of Xstrata's operations the Chief Executive of the commodity business concerned has to make a detailed presentation to both the Executive Committee of the Xstrata Group and the board's Health, Safety, Environment and Community (HSEC) Committee. This presentation includes information on how the fatality occurred, what immediate corrective action was taken, and what actions have been taken to prevent a similar incident occurring elsewhere in the business. In Xstrata Alloys the presentation includes a virtual reality simulation of the incident.

### Immediately after the fatality:

- The site's Emergency Preparedness and Response procedure is activated, which includes an incident notification being distributed to all operations
- A full investigation using the incident cause analysis method (ICAM<sup>19</sup>) is undertaken and information is collected using a PEEPO<sup>20</sup> chart to find out how the fatality happened and what can be done to prevent it happening again
- The operation also investigates current practices and decides which should stay in place and which practices need to change as a result of lessons learned from the incident investigation
- The operation communicates with its employees and all our other operations

regarding the incident. The purpose of this communication is to pass on information that might prevent a similar incident happening on another operation

- When there is a fatality the operation concerned holds a memorial service onsite for the deceased. Family and friends are invited to attend
- The virtual reality simulation of the incident, based on the ICAM investigation, is used throughout Xstrata Alloys to train people doing similar jobs, by showing them how the fatality happened and what they can do to avoid a similar incident. The simulation training also reinforces the training already in place
- Follow-up audits check the implementation and effectiveness of measures to prevent a similar incident in any of Xstrata Alloys' operations

### Preventative measures in action

In 2009, a driver employed by the transport contractors at Eland platinum mine was fatally injured when the truck he was driving went over a berm. He jumped out of the vehicle when he realised he was going to have an accident and as a result was critically injured by the vehicle he was driving.

The investigation into this incident indicated that drivers needed to be better equipped to react appropriately in driving emergencies. They needed to understand how to follow their safety training on a theoretical and practical level. The only way to provide this sort of practical experience was to use a simulator in the same way as airlines use simulators to train their pilots. So that's exactly what Eland did.

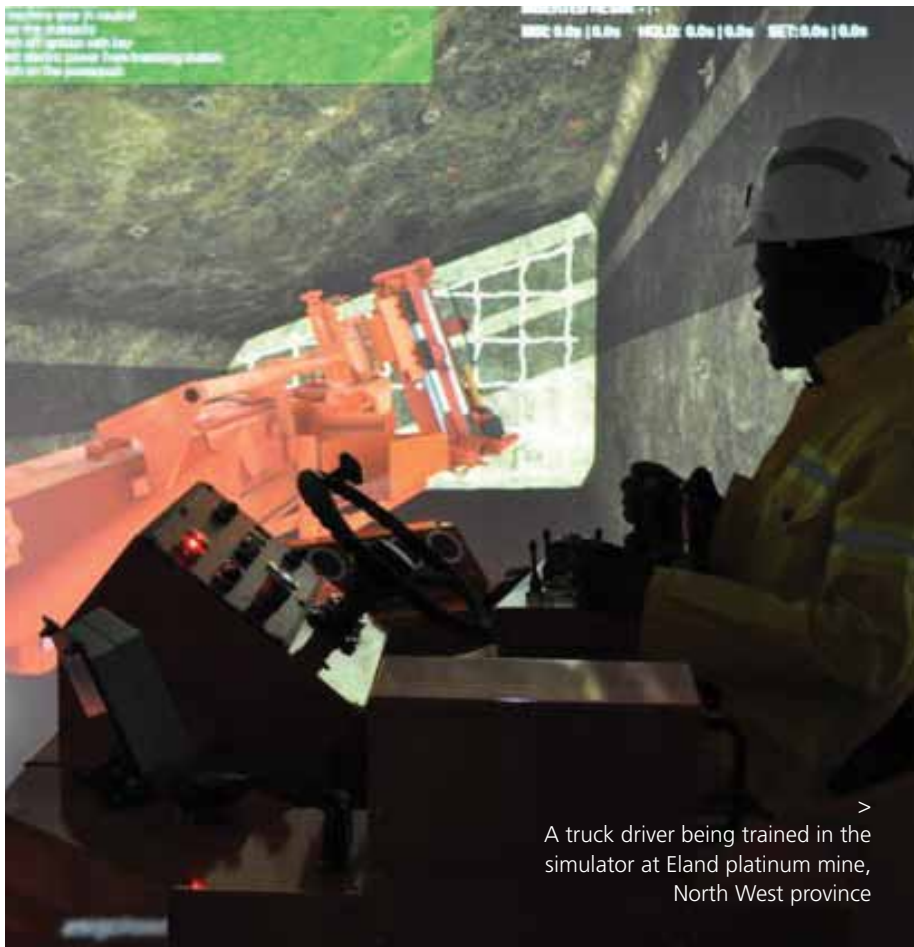


## How the simulator training works



Simulator training, which is divided into two components, started at Eland mine during 2010. The components are computer-based training, which provides the theoretical training, and simulator training, which provides the practical training.

Different machine consoles can be fitted to the simulator's motion base. These consoles are identical to the machine cabs used at Eland and include vehicles ranging from load haul dumpers to drilling rigs.

A wide variety of training scenarios and possible operator errors are included in the simulations. Some typical training scenarios include emergency situations, such as a burst tyre or a fire in a machine. The terrain database of the simulator training programme can generate mine specific landscapes, as well as mine specific drill patterns.



>  
A truck driver being trained in the simulator at Eland platinum mine, North West province

-  <sup>18</sup> See [www.xstrata.com/sustainability/downloads/standards/](http://www.xstrata.com/sustainability/downloads/standards/) (page 21)
-  <sup>19</sup> ICAM is used widely for the investigation of incidents throughout the aviation, rail, mining, marine, medical and petroleum industries
- <sup>20</sup> PEEPO standards for people, environment, equipment, procedures, organisation – see the glossary for a description of how this chart helps with the collection of information during an investigation into an accident

### Recreating the experience improves safety

The simulator training at Eland recreates the real life experiences drivers have. Real life experiences are also recreated using virtual reality in the Xstrata-Merafe Chrome Venture's underground mines. This has improved the ability of employees and contractors working in these mines to identify and react appropriately to hazards. The training works like a computer game - if a trainee chooses the wrong answer to a question, he/she immediately finds out what would have happened had they made the same mistake in real life. We have not had a fatality underground since 2007 when one of our employees was killed by a rock fall at the mining face. Our use of ground penetrating radar has helped improve our management of rock falls and falls of ground and made our mines safer.

**VEHICLES LOADING  
NOISE**

**BEWARE  
FALLING OBJECTS**



**GEVAAR  
VALLENDE VOORWERPE**

**WEARING PROTECTION  
NOISE**

# HEALTH AND WELLBEING

## CHALLENGES

- Noise-induced hearing loss, which is the most common occupational health issue for our businesses
- The impact of HIV and AIDS and tuberculosis on our workforce
- The link between tuberculosis (TB) and AIDS emphasises the need to significantly increase our TB programme to provide the highest quality of prevention and care for our employees and contractors
- A lack of public healthcare facilities and, in particular, access to HIV and AIDS prevention, treatment and care for communities in the areas in which we operate

## PROGRESS

- Zero occupational illnesses recorded by Xstrata Coal South Africa for the past three years
- The Xstrata Alloys Chrome Mining division was not satisfied that the medical examination process it used was accurately identifying noise-induced hearing loss cases among its employees. Following the introduction of an improved medical examination a further 24 cases were identified, which resulted in a 243%

increase in occupational illnesses in Xstrata Alloys during 2010. None of these cases resulted from current working conditions. The division believes that it has now identified all historic cases of noise-induced hearing loss among its employees

- Xstrata Alloys has included TB awareness and prevention, testing and treatment in the wellness programme available to employees and contractors at all Xstrata Alloys operations

### +60%

**More than 60% of the HIV-positive employees working for Xstrata Alloys and Xstrata Coal South Africa have registered with the treatment programmes available to them. We are working to increase this percentage in 2011**

### ±90%

**About 90% of Xstrata Alloys' and Xstrata Coal South Africa's employees participated in HIV voluntary counselling and treatment (VCT) programmes**

## POLICY & APPROACH

A healthy workforce is an advantage to our business, as it means fewer sickness absences and employees who are fit to work at their full potential. Our health programmes address occupational illnesses, public health issues and overall wellbeing.

Many of the areas in which we operate lack adequate public health facilities for both our employees and the community. Wherever possible we supplement the existing health facilities, usually through public private partnerships.

We aim to eliminate occupational illness by providing a workplace free from health and hygiene hazards and improving the wellbeing of our employees and contractors. We identify the main health issues affecting our workforce and the local communities. This allows us to address their specific health needs.

## Occupational illnesses

Occupational illnesses like noise-induced hearing loss and musculoskeletal illness are typically diagnosed some time after the event or events that caused the illness. As a result, the occupational illnesses currently being identified in our operations are frequently the result of past management practices.

We conduct regular occupational health assessments during which we assess the chemical, biological, physical and ergonomic risks at our operations. These assessments help with the early identification of occupational illnesses, assist with the prevention of occupational illnesses and support the effective management of occupational health risks.

We work with our employees and contractors to address health issues. Our total workforce is represented in formal joint management-worker health and safety committees, which monitor and advise on occupational health and safety programmes.

Because our businesses have identified noise-induced hearing loss as a major occupational health risk for our employees, we have implemented hearing conservation programmes. It is compulsory for any of our workers who are exposed to the internationally accepted noise level limit of 85 decibels (A), or above, to wear hearing protection. This equipment includes variphones which are custom-made for comfort and are 100% leak tight. Xstrata Alloys employees are trained in the use and care of this equipment.

Our hearing conservation programmes include personal monitoring and regular testing of all employees and contractors

who may be exposed to noise that could damage their hearing.

Wherever possible, we reduce the noise from equipment in our operations to levels below internationally recommended standards using design modifications, exclusion zones and “buy quiet” programmes for new or upgraded equipment. Our operations are committed to reducing machinery noise to less than 110 decibels by 2013.

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**Reduce machinery noise by 2013 to less than**

**110dB**

## HIV and AIDS

### Policy and approach

HIV and AIDS is a human rights issue, which Xstrata South Africa’s business units address through their HIV and AIDS-related policies and programmes. To ensure the policies are accessible to our employees and contractors they are available in all the languages spoken by our employees.

Employees can choose to receive HIV and AIDS counselling and care and support. Our HIV-positive employees receive the treatment they need free of charge together with the support and education that will make it possible for them to stick to their antiretroviral (ARV) treatment programme.

### Our HIV and AIDS policies commit us to:

- providing employees and contractors with the knowledge they need to protect themselves and their families from HIV and AIDS through workplace education programmes that explain clearly how HIV can be contracted, what

can be done to prevent contracting and transferring HIV, and what should be done to enhance the quality and length of life of those who are HIV-positive

- encouraging employees and contractors to know their HIV status and providing counselling and testing facilities for them
- running HIV and AIDS campaigns that involve employees at every level of the organisation
- ensuring that every employee attends an HIV and AIDS education session during working hours, followed by an individual wellness counselling session with a healthcare provider
- ensuring that testing for HIV is voluntary and that employees are only tested for HIV and AIDS after giving their informed consent
- guaranteeing the confidentiality of employees’ medical information
- providing pre- and post-test counselling for employees or contractors wishing to be tested for HIV and AIDS
- forming public private partnerships with local, provincial and national government structures in joint projects to fight HIV and AIDS in the communities in which we operate
- facilitating the training of peer educators and establishing and training home-based care workers through our corporate social investment programme

# EMPLOYEES

## CHALLENGES

- Maximising local employment<sup>21</sup>
- Making careers in mining more accessible to women
- Achieve employment equity that is supported by everyone in the workplace
- Engaging with our employees and the trade unions through open communication channels to achieve labour peace
- Providing a workplace that is free of discrimination.

## PROGRESS

25 661

people (employees and contractors) worked in Xstrata South Africa's operations in 2010 (12 992 employees and 12 669 contractors)<sup>22</sup>

60%

of Xstrata South Africa's workforce (employees and contractors) are local people

93%

of the new jobs created by Xstrata South Africa were awarded to local people

8%

increase in Xstrata South Africa's workforce in 2010 - creating 2 189 new jobs

15.6%

of Xstrata South Africa's workforce was female in 2010

76%

of Xstrata South Africa's employees are covered by collective bargaining agreements

2.8%

rate of employee voluntary turnover in Xstrata South Africa in 2010

11.9%

of Xstrata South Africa's management was female in 2010<sup>23</sup>



<sup>21</sup> Local people are defined as people who were already residing in the same geographic region as the operation prior to being offered a position with Xstrata

<sup>22</sup> A breakdown of employees by employment type and contract can be found in the Detailed sustainability information section of this report

<sup>23</sup> Please refer to page 124 of the Detailed sustainability information section of this report

## Policy and approach

Xstrata South Africa complies with the South African Basic Conditions of Employment Act No 75 of 1997 and the Labour Relations Act No 66 of 1995, which govern labour relations and conditions of employment in South Africa. We are committed to upholding the United Nations Universal Declaration of Human Rights and the International Labour Organisation's Declaration on Fundamental Principles and Rights at Work.

### We are committed to providing a workplace based on:

- mutual respect
- fairness
- integrity
- non-discrimination
- equal opportunity at all levels
- open and two-way engagement with our employees and their representatives.

The Xstrata Sustainable Development Policy sets out the principles applied to the management of our people. Sustainable Development Standard 3 of our 17 Sustainable Development Standards<sup>24</sup> describes our aim of attracting and retaining the best people at every level of our business and of providing industry-leading career development opportunities and competitive remuneration. Our policies clearly state that we do not tolerate any form of discrimination and that all employees are to be treated with dignity and in a manner that is culturally appropriate, irrespective of gender, background or race.

In line with our Sustainable Development Policy we consult, communicate and provide appropriate support to employees during significant organisational changes including closures, acquisitions, mergers and divestitures.

### Employee relations

Notice periods are specified in workplace agreements and both Xstrata Alloys and Xstrata Coal South Africa consult with employees in advance of any significant operational changes. Consultation is always undertaken in an attempt to reach agreement with the union.

When hiring employees Xstrata South Africa, where possible, gives preference to members of the local community and, in some cases, offers training opportunities to community members that will allow them to develop the skills they need to be employed by us.

### Employee remuneration

We provide well-structured employment contracts and fair and competitive remuneration. Xstrata South Africa offers an equal rate of pay to male and female employees of equal experience. Our employment equity policies provide all potential and existing employees with equal opportunities in terms of recruitment, promotion, transfer, employee benefits, training and conditions of service.

Our minimum wages are based on union agreements and all employees are paid according to the standard minimum, or above.

### Employee benefits

The benefits that we provide our full-time employees, over and above the legally mandated employment benefits, include retirement benefits in the form of provident funds, medical scheme benefits and assistance with housing loans. These additional benefits are not offered to temporary or part-time employees.

### Labour relations

- 76% of Xstrata South Africa's employees are covered by collective bargaining agreements

Xstrata South Africa upholds the rights of its employees to collective bargaining and freedom of association and does not tolerate discrimination. Potential employees are advised of this. We adhere to collective bargaining agreements with due regard to the relevant legislation. Collective agreements are the product of negotiation between the parties. The trade unions negotiate terms and conditions of employment for their members. Xstrata South Africa settles wages with the unions annually, for implementation in July each year.



<sup>24</sup> See [www.xstrata.com/assets/pdf/x\\_sus\\_sdstandards2008.en.pdf](http://www.xstrata.com/assets/pdf/x_sus_sdstandards2008.en.pdf)



<sup>25</sup> In South Africa the only legally required benefit employers are obligated to maintain is workers' compensation insurance - or they need to be self-insured

## Industrial action

During 2010 there were two protected strikes in Xstrata Alloys' operations. At the Xstrata-Merafe Chrome Venture's Thorncliffe and Helena mines in Mpumalanga province there was a 14-day strike concerning

organisational rights (the Association of Mineworkers and Construction Union (AMCU) failed to achieve its demand to be recognised as the majority union). The second strike was a 30-day protected strike over wages at Xstrata Alloys' Platinum division. One-day secondary strikes,

in support of this strike, took place at our Thorncliffe and Helena mines. The Lydenburg ferrochrome plant had a three-day strike which was also in support of the strike in our Platinum division.

Year	Operation	Duration	Number of employees involved	Cause of action
<b>Xstrata Alloys</b>				
2009	Lion ferrochrome plant	66 days	318	Disagreement over bonuses (interpretation of a collective agreement over production incentive/bonus scheme)
2010	Mototolo mine	30 days	About 800	Wage dispute
	Thorncliffe and Helena mines	14 days	541	Protected strike regarding organisational rights
	Lydenburg ferrochrome plant	3 days	53	Secondary strike
	Thorncliffe and Helena mines	1 day	200	Secondary strike
<b>Xstrata Coal South Africa</b>				
2009	South Witbank Underground	9 days	288	Lockout as a result of employees refusing to work because they wanted a change in shift arrangements
	ATCOM North	15 days	394	Wage dispute
2010	Tavistock Underground	21 days	308	Shift change

## Job creation and local employment

Breakdown of Xstrata South Africa's workforce by province (employees and contractors)



● Mpumalanga province	61%
● North West province	35%
● Limpopo province	4%

## Maximising local employment

### Hiring policies

When hiring employees Xstrata South Africa, where possible, gives preference to members of the local community and, in some cases, offers training opportunities to community members that will allow them to develop the skills they need to be employed by us.

While Xstrata South Africa mainly avoided retrenching employees during the economic downturn in 2009 we created very few new jobs in 2009.

### Diversity and equal opportunity

Xstrata South Africa's Transformation Committee<sup>26</sup> monitors and helps both Xstrata Alloys and Xstrata Coal South Africa to find innovative and effective ways of addressing transformation within their organisations .

Management and the site employment equity committees monitor employment equity in the operations every month and report these results to their business units and the Xstrata South Africa Transformation Committee, which in turn reports to the Xstrata plc board.

We offer an equal rate of pay to male and female employees of equal experience and our employment equity policies are based on providing equal opportunities to all potential and existing employees.

A detailed report on the progress of Xstrata Alloys and Xstrata Coal South Africa towards achieving employment equity can be found in the Mining Charter Scorecards of Xstrata Alloys and Xstrata Coal South Africa on pages 137 to 142.

### Our progress

In Xstrata South Africa in 2010:

**27%**

**of the members of top management in Xstrata South Africa were historically disadvantaged South Africans (HDSA)<sup>27</sup>**

**71%**

**of the members of middle management in Xstrata South Africa were HDSAs**

**12%**

**of Xstrata South Africa's managers were female**

**94%**

**of people employed by Xstrata South Africa who have core and critical skills were HDSAs**

**16%**

**of Xstrata South Africa's workforce were female**

### Development and training

Xstrata South Africa provides:

- development and training opportunities for HDSAs that will allow them to further their careers
- career development opportunities, identifying, developing and retaining high potential employees
- effective training that addresses risk-tolerant or ingrained behaviours that impact negatively on our operations
- training in our Business Principles, Sustainable Development Policy and 17 Sustainable Development Standards.

**Xstrata South Africa's investment in training in 2010**

**60%**

**increase in Xstrata South Africa's investment in training in 2010 to R89.6 million – 2.5% of the total wage bill**

**134%**

**increase in Xstrata Alloys' spend on training and development to R64.5 million**



<sup>26</sup> See the Governance section of the report for details of the Xstrata South Africa Transformation Committee

<sup>27</sup> The definition of HDSA applied in the Revised Mining Charter includes white women as HDSAs



### Development and training (continued)

- An average of R4 252 was invested in training for each member of Xstrata South Africa's workforce (employees and contractors)

#### Training hours<sup>29</sup>

- 100% increase in the training provided to Xstrata South Africa's employees (1 180 211 hours)
- 54% increase in training provided to our contractors (417 984 hours of training - 271 253 hours in 2009)
  - An average of 44 hours of training was provided to each Xstrata South Africa employee (570 134 hours to 12 992 employees)
  - An average 33 hours of training was provided to each contractor by Xstrata South Africa (417 984 hours to 12 669 contractors)

#### Type of training provided

Workers received environmental, health, human rights and safety issues in both Xstrata Alloys and Xstrata Coal South Africa. Xstrata Alloys also trained 347 members of the community in environmental, health, human rights and safety issues. The following training sessions were held for workers in Xstrata South Africa in 2010: 9 431 in environmental issues, 18 141 in health issues, 15 474 in human rights issues and 50 968 in safety issues.

#### Our approach

The long-term interests of our business depend on our ability to attract and retain the best people and to transform our workforce. We identify employees with high potential at every level and we are committed to providing them with the support and tools they need to develop into

our future senior management team.

In 2010 36% of the Xstrata South Africa workforce received performance and career development reviews. All employees have job descriptions and action plans. They can use these action plans to set career objectives for themselves and to measure their own performance. Managers are trained to conduct performance reviews and give effective feedback.

Each operation has a workplace skills planning committee, which is responsible for identifying the operation's specific training requirement. Training is structured to meet these specific needs. This includes providing training in skills that will allow operations to employ members of the local community.

Xstrata Alloys and Xstrata Coal South Africa are jointly accredited as training providers.

Xstrata Coal South Africa, which has all its operations in Mpumalanga province, has a centralised training facility that provides training for all its employees and contractors<sup>30</sup>.

Xstrata Alloys, whose operations are widely spread and in three different provinces, has training centres at most of its operations. The Steelpoort Development Centre in Limpopo province provides training facilities for the Lion ferrochrome plant, Lydenburg ferrochrome plant, Thornccliffe mine, Helena mine and Magareng mine. It also provides training to employees of other mining companies in the area. The Centre trains members of the community not only in skills that will equip them to work in our operations, but also offers training in marketable skills including bricklaying,

welding and household electrical skills. During 2010 the Centre expanded its programmes to include a bridging programme that prepares local students for tertiary education. The success of the model applied at the Steelpoort Development Centre, Limpopo province, at addressing skills development, will be applied in the North West province where Xstrata Alloys is building a training centre that will specialise in artisan training.

#### Apprenticeships, learnerships, bursaries and scholarships

In Xstrata South Africa in 2010 there were:

- 4 443 learnerships/apprenticeships
- 507 graduate trainees
- 991 student work placements
- 863 scholars on Xstrata bursaries

To address the shortage of mining, engineering and related skills Xstrata South Africa offers bursaries for full-time university and technikon studies in the mining, electrical, metallurgical and mechanical engineering fields, geology, occupational hygiene, financial management, information technology, science and commercial accounting.

We also offer graduate trainee positions, work placement for students and financial assistance. This assistance focuses on members of the communities in which we operate.

A mentorship and coaching programme supports employees who receive educational assistance, those who have entered into learnership agreements, fast tracked employees and those identified for accelerated development.



<sup>29</sup> See Detailed sustainability information section for more detailed information on training hours

<sup>30</sup> See the Case Study "Dreams can come true" for details on the training offered by Xstrata Coal South Africa's Group Training Centre

Both Xstrata Coal and Xstrata Alloys provide full time adult basic education training (ABET) for employees.

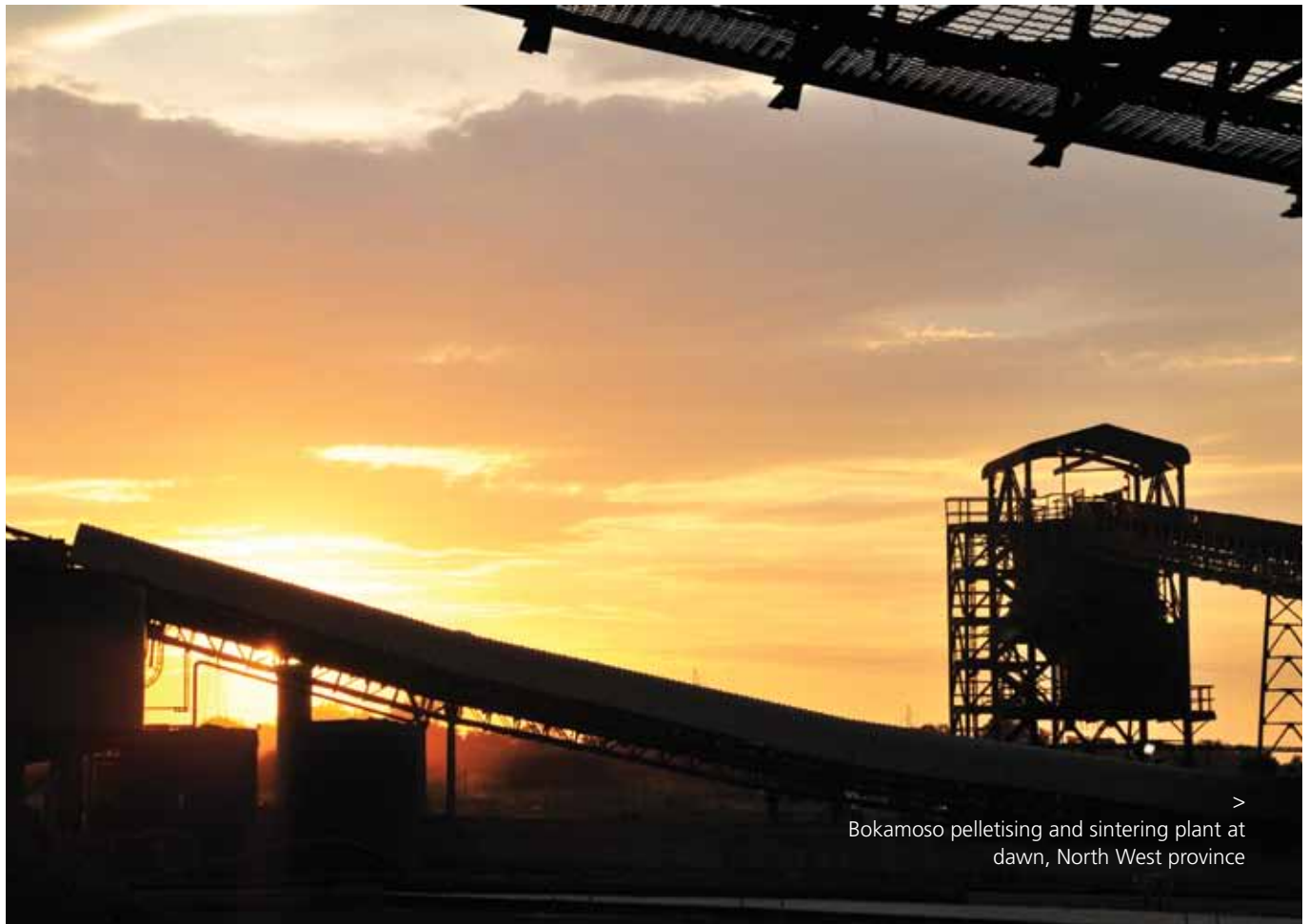
### Leadership development

When we identify managers as having leadership potential, they are invited to participate in a leadership programme. Members of our senior management team mentor participants in the programme. They

are also given additional training, support and career development opportunities. Over 80% of the managers participating in our leadership development programmes are historically disadvantaged South Africans.

Xstrata is based on a devolved business model – this means that it delegates responsibility and authority to its business units and expects its management teams

to run independent businesses. Managers new to this type of culture can find it challenging. Xstrata Alloys wishes to nurture the devolved business model in its business by developing the kind of leaders that will support and reinforce a business model of this type. We are working with leading South African academic institutions to develop a leadership development programme that will support our leadership requirements.



>  
Bokamoso pelletising and sintering plant at dawn, North West province

# Case study

Dreams can come true

Arthur Balata's dream of becoming a surface miner is slowly taking shape with each class he attends at Xstrata Coal South Africa's Group Training Centre.

The 34-year-old truck driver from Ogies in Mpumalanga enrolled for a course in surface mining a year ago and was studying for his exams when we interviewed him.

"Surface mining is not easy to get into, I have a long road ahead of me but one day it will be worth it," says Balata who is also a Maths and Science whiz.

Balata's journey towards becoming a surface miner began with the adult basic education (ABET) programme which has been offered at the training centre since 1998.

By the time Balata joined the ABET programme in 2000, it had moved on from offering only literacy and numeracy training to assisting employees to further their careers through a range of ABET courses.

Students can complete the ABET programme at their own pace and according to their own abilities. This means that students like Balata can continue working to feed their families without the pressure of school deadlines.

"I'm a truck driver who gets to study for free while feeding my family. It's a good deal which no one can afford to miss," says Balata.

## Rapid growth

Since Xstrata Coal South Africa took over the training centre in 2002 it has developed from an institution with a very limited budget into one with an annual budget of R139 million.

## Wide range of training offered

Among the wide range of training offered in the mining and engineering fields by the Group Training Centre is dragline operator training. This training is also available to community trainees. In 2010, three operators received their dragline certificates. Willie Goosen, a veteran dragline operator who has been operating these massive machines for 22 years, says all it takes is dedication to tackle the machine also known as "Inkunzi"<sup>31</sup>.

It takes six months to learn to operate the dragline, but according to Goosen, it takes a further two years to be really confident behind its wheel.

Goosen said the challenges and risks dragline operators face can be fatal and that is why the services offered by the Group Training Centre are so important. "There are only two people per shift. One is inside operating the machine and the other is on the ground watching the cable. It's all about trust and being very alert and having each other's backs," said the veteran.

## From belt operator to rock engineer

Another employee who owes his success to the Centre is rock engineer Dewald Swanepoel. He juggled his studies at the training centre while working as a belt operator in one of Xstrata's mines. He went on to graduate top of his class and was named miner of the year in 2006.

"It's been a long and stressful road and I had to sacrifice time with my family to make this work. But I'm very happy now because the hard work is paying off," said Swanepoel. He speaks highly of the Group Training Centre and the work ethic it instilled in him early on in his career.

## The value of investing in training and skills development

The Xstrata Coal South Africa's Group Training Centre, which was recognised for good practices in skills development by the Mining Qualification Authority in 2009, is an excellent example of how investing in training and development can change lives.

<sup>31</sup> Inkunzi means to attack



> Driver simulator training at Xstrata Coal South Africa's Group Training Centre

# COMMUNITY

## Social investment in 2010



Enterprise development and job creation	R22 946 270
Education	R40 513 132
Environment	R817 168
Health	R10 761 438
Socio-economic development	R29 421 104
Culture/Art	R1 027 572
Other	R48 415 801
<b>Total</b>	<b>R153 902 485</b>

## Social investment in 2009



Enterprise development and job creation	R16 484 921
Education	R17 750 592
Environment	R921 502
Health	R12 191 569
Socio-economic development	R20 452 459
Other	R1 565 858
<b>Total</b>	<b>R83 119 840</b>

## Social investment for the long term

Issue	Social and economic opportunities	Social and economic risks
Public health	Contribution to improved access to healthcare	Emissions, noise, dust, introduction of disease
Corporate social involvement	Ongoing support for initiatives that add value to both our neighbouring communities and Xstrata	Risk of dependency on company funding
Socio-economic development	<p>Royalties and taxes paid to local, provincial and national government</p> <p>Returns to shareholders, interest paid to funders, contributions to employee provident funds</p> <p>Improving local infrastructure</p>	<p>Dispute regarding social licence to mine</p> <p>Increase in crime rates as a result of influx of people in connection with our operations</p>
Procurement and enterprise development	<p>Economic benefit from procurement, specifically HDSA procurement and local procurement</p> <p>Development of sustainable local enterprises</p>	<p>Disputes over Xstrata's spending decisions</p> <p>Change of focus of local economic activities to depend on our operational activities</p>
Job creation and skills development	<p>Employment opportunities for local people</p> <p>Wage and benefits paid to our employees and contractors</p> <p>Improved skills for local people gives them the ability to find jobs in the mining industry or in other sectors of the economy</p> <p>Indirect job creation, for example in the provision of services to our operations and its employees</p> <p>Attracting additional business to the area which would increase employment opportunities</p>	<p>Rising housing, food and service costs as a result of increased demand and ability of our employees to pay more</p> <p>Negative impacts of mine closure such as loss of employment and further investment in the community</p> <p>Risk of dependency on operations with a limited life</p>

## CHALLENGES 2 255

- Community engagement
- Increasing procurement from small and medium enterprises, black economically empowered enterprises (BEE) and enterprises local to our operations
- Job creation and skills development
- Enhancing the socio-economic capacity, prosperity and sustainability of the communities in which we operate
- A lack of public healthcare facilities and, in particular, access to HIV and AIDS prevention, treatment and care for communities in the areas in which we operate.

## PROGRESS

Community engagement (For detailed information on stakeholder engagement, including community engagement, see page 147 to 154 and the detailed sustainability data section of this report on page 99 to 155)

**stakeholders attended 144 stakeholder meetings held at our South African operations during 2010**

**28**

**complaints were received at our South African operations. They included two complaints about dust and one about blasting at Xstrata Coal South Africa's operations. Xstrata Alloys received seven complaints about fumes and one each about water, noise, dust, blasting and access to property**

### Our approach

Standard 12 of our 17 Sustainable Development Standards sets out our approach to social and community engagement<sup>32</sup>. Consultation with communities is an essential part of our approach to doing business, managing risk and addressing the future sustainability of our business and the communities in which we operate.

We identify our impacts on the communities in which we operate, both positive and negative, using social and human rights baseline studies and risk assessments. We work closely with communities to maximise the positive impacts of our activities and to minimise or avoid any potential negative effects. We involve communities in developing solutions that will benefit both the community and our business.

Our community investment is aimed at developing self-sufficiency over time. We have invested in monitoring programmes designed to track and assess the impact of our investments.

## Procurement

Every year we set ourselves targets for our discretionary<sup>33</sup> procurement from historically disadvantaged South Africans (HDSA), which exceed the targets set in the Mining Charter scorecard. We also aim to purchase as much locally from local suppliers as possible.

Suppliers have been reluctant to set up local businesses to supply to the mining industry in the Sekhukhune region of Limpopo province, which has meant that the economic benefit from much of the mining procurement was going to other provinces (mainly Gauteng province). Xstrata wanted to bring suppliers closer to the mines and smelters in the area, to reduce the need for mining companies to carry large inventories and allow the local economy to benefit from mining companies' procurement. The Limpopo mining supplier park will give a massive boost to local procurement in the province, creating black economic empowerment opportunities and creating employment for members of the local community.

Xstrata regularly engages with its top previously advantaged suppliers with a view to encouraging them to become black-empowered. In addition, we identify services that can be switched to HDSA companies.

## Impact

# 61%

(R4.7 billion) of Xstrata Alloys' discretionary procurement in 2010 was from black empowered companies

# 42.79%

(R2.6 billion) of the discretionary procurement of Xstrata Coal South Africa's participating coal business (PCB)<sup>34</sup> in 2010 was from black empowered companies, as was 35.99% (R60.9 million) of the discretionary procurement of the Goedgevonden complex (in which ARM Coal has a 51% interest)

# R60 million

investment in world's first Mining Supplier Park in Limpopo province

## Enterprise development

# R22.9 million

15% of our social investment in 2010 went to enterprise development and job creation



> The mining supplier park under construction

<sup>33</sup> Discretionary procurement is the term used to describe purchases a company/person chooses to make from a particular supplier. The term non-discretionary expenditure describes the purchases where we have no choice of supplier, e.g. the purchase of electricity from Eskom who is currently the only company from whom we can purchase electricity in South Africa

<sup>34</sup> The PCB includes all operations under the ownership and control of Xstrata Coal South Africa, excluding Goedgevonden colliery

Enterprise development is an important part of Xstrata South Africa's investment in the socio-economic<sup>35</sup> capacity of the communities in which we operate. We support enterprise development through various initiatives. Small businesses often have difficulty in obtaining loans from financial institutions because they do not meet their stringent requirements for the granting of credit.

We assist companies in this position with start-up and bridging capital and loans with preferential terms. We also

offer management expertise in areas such as project management, business planning, cash flow management and legal compliance. We also provide appropriate skills training.

### **The challenge of enterprise development**

The greatest challenge with enterprise development is to find ways and means to help micro and very small businesses move beyond the subsistence level to become profitable and self-sustaining. One

approach that has worked for Xstrata Alloys is the ring-fencing<sup>36</sup> of portions of tenders for small enterprises, who then work with an established business that undertakes to mentor the small business. In some cases, where the arrangement has worked well, the established business has offered the HDSA business the opportunity to purchase a shareholding and become its black empowerment partner.

### **Measuring the impact of ring fencing – four years on**

Xstrata Alloys believes that the practice of ring fencing a portion of tenders gives small, medium and micro enterprises the opportunity to be mentored by a well-established business, that has been awarded the bulk of a tender, and become self-sustaining.

We included a case study in our 2009 Sustainability report on Sizani Security Services, who started providing security services on one Xstrata Alloys site four years ago, as part of a ring fenced tender. Today, Sizani has more than 36 employees providing security on nine Xstrata Alloys sites. It has upgraded its fleet of vehicles, is engaged in advanced surveillance in addition to providing guarding services and has a number of smaller contracts for providing security services. Jan Mabaso, CEO of Sizani, is hopeful that the company may soon secure a contract with another large mining company for which they have tendered.

### **Job creation and skills development**

The section on job creation and local employment on page 51 provides information on the positive impact our operations have had on job creation in our areas of operation.

In addition to the employment our operations create, our investment in

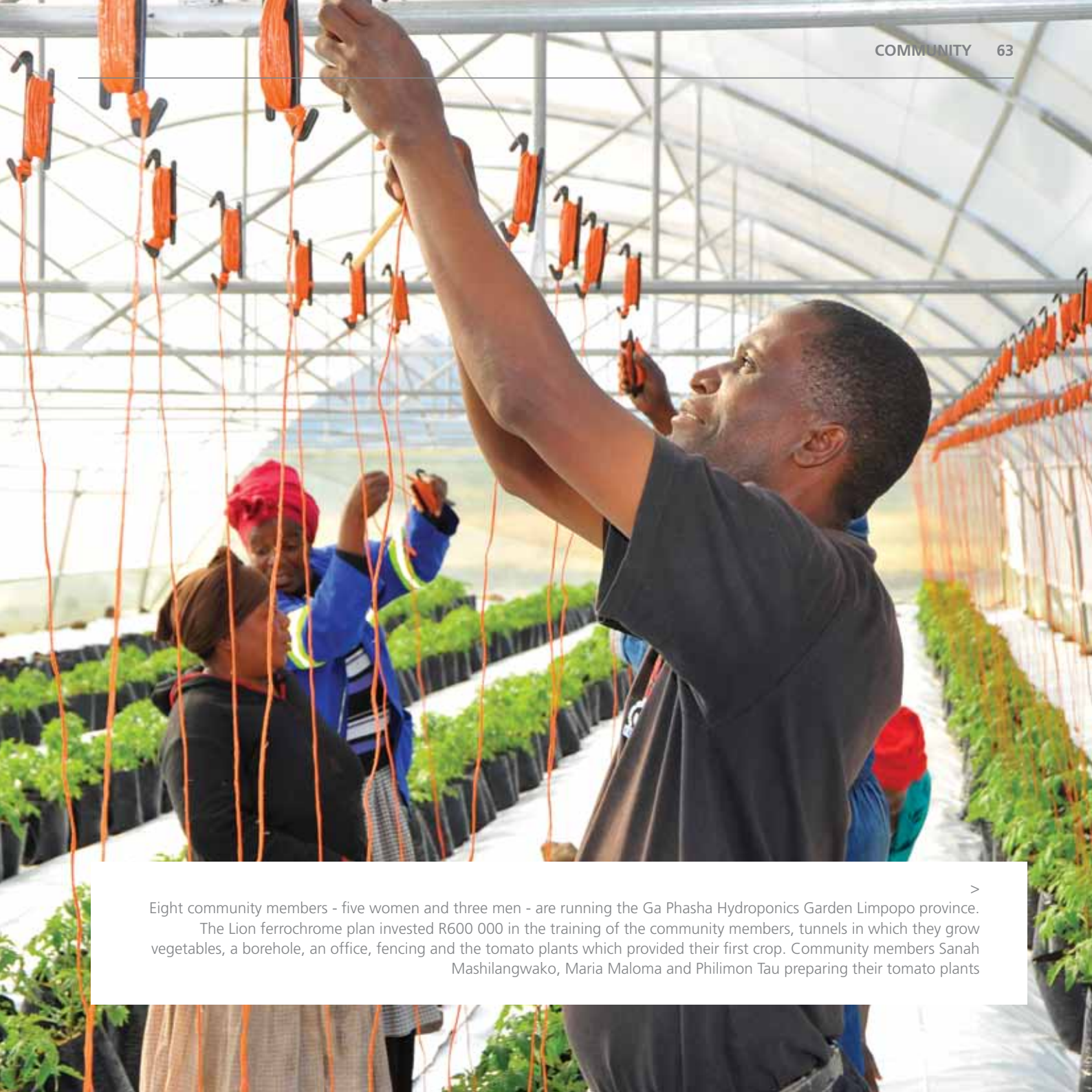
infrastructure development also creates jobs. While these jobs may only be temporary, those employed often learn portable skills such as bricklaying, welding and carpentry, that provide them with an opportunity to gain further employment.

Both Xstrata Alloys and Xstrata Coal South Africa offer adult basic education training (ABET), computer literacy training and

training in portable skills to community members. At the Steelpoort Development Centre in Limpopo province, community education projects run by the Centre include teacher training (in technology education), ABET facilitator training, science teacher training, engineering workshop training for further education and training (FET) lecturers.

<sup>35</sup> The term socio-economic is used here to describe the interaction between social (way of life/living conditions) and economic factors (how rich or poor a community is)

<sup>36</sup> To "ring-fence" is a term borrowed from the ring-fencing of land which means to enclose a piece of land completely. In this case it means to close off a part of a tender.



Eight community members - five women and three men - are running the Ga Phasha Hydroponics Garden Limpopo province. >

The Lion ferrochrome plan invested R600 000 in the training of the community members, tunnels in which they grow vegetables, a borehole, an office, fencing and the tomato plants which provided their first crop. Community members Sanah Mashilangwako, Maria Maloma and Philimon Tau preparing their tomato plants

# Case study

## Investing in future engineering

Professor Piet Human left Stellenbosch University in 1995 to devote his life to empowering young people with skills that would help them make a positive contribution to the country.

As he puts it, “We live in an enormously rich country in terms of mineral resources and people, but we are not yet managing to use these resources properly”.

His contribution towards further enriching the country’s potential and resources can be seen in the work he has done in the past seven years at Ukuqonda Tertiary Bridging Programme in Rustenburg.

The programme, which was officially launched in 2004, has had a pass rate of above 80% with most of its graduates enrolling into universities to further their studies.

This achievement has made Ukuqonda one of the most successful post matric programmes in the country with a high demand for enrolment each year.

Along with a tough selection process, the students who finally get selected into the programme are guaranteed a distinction and a wealth of knowledge when they graduate.

Ukuqonda not only focuses on Mathematics and Science, but also provides other subjects, which are incorporated with life skills training that will help the students once they leave the programme.

“We are helping these young people become the writers of their own stories,” said Professor Human when explaining the life skills lesson provided at the college.

With so many future engineers and scientists at Ukuqonda, it’s not surprising that Xstrata Alloys came on board to fund the programme.

Steve Makgoba, Group General Manager Community Social Responsibility, explained that one of the reasons Xstrata got involved with this programme is because they were not happy with the number of black engineers in the country.

Professor Human emphasised that the programme seeks to close the gap between schools and universities by making sure that students do not drop out during their first year at tertiary.

Ukuqonda’s database shows that of the 150 of their graduates who went to university, 80% of them who majored in Engineering and Science managed to complete their degrees in record time.

“We run a very strict programme which ensures that an A student stays an A student and can handle the load of work that is thrown at them at universities,” said Human.

An aspiring civil engineering student from Rustenburg, Busisiwe Phinda speaks highly of the programme which she joined while she was in Grade 10.

Besides the knowledge she has gained academically, Phinda says she’s more thankful for the life skills lessons she has learned, which has made her a more confident person.

“More than anything, Ukuqonda has taught me that I can do anything and be whoever I want to be through believing in my talents and myself,” said Phinda.

“I now know that I have leadership qualities that I never knew existed, and one day I will run my own company and give back to my community the way that they are doing right now,” she added.

Though Phinda still does not have a bursary, she is hopeful that her good grades and determination will work in her favour to secure a full bursary.

She plans to study and work part-time to increase her chances of getting a job once she completes her degree.

“I joined Ukuqonda because I didn’t want to throw myself in the deep end by rushing to university. I will leave here as a powerful person and the people at university will be shocked,” said Phinda.

Fellow student Thabang Mohlala, also an engineering student, said it feels good to be part of a programme that helps them engineer their own careers.

“Our teachers don’t spoonfeed us, we are taught to do things for ourselves and tackle challenges like big boys and girls. This has helped me to see the great potential that I have,” said Mohlala.

## Impact: Students who succeed at university



# Case study

## Investing in teacher skills in the North West province



> A teacher learning computer skills through E-skills4teacher, funded by Xstrata Alloys

E-Skills4Teachers, an initiative by Xstrata Alloys and Kagiso Active, has brought hope and confidence to teachers around Rustenburg through computers.

The programme is aimed at transferring necessary computer skills to teachers in rural areas so that they can be more productive and efficient educators.

With the help of the North West province's Department of Education, 50 schools have been selected for the project that has seen a dramatic growth in teachers' abilities to operate a computer.

The first phase, which was launched in August 2010, also involved job creation through the recruiting of trainers from the communities to assist with the project.

The project currently has 13 trainers who have dedicated their afternoons to travelling to schools around Rustenburg and teaching computer literacy to educators.

Xstrata has set aside R2 million for the training phase of the project which includes making sure that all the necessary hardware requirements are available for the project to proceed without a hitch.

Dieketseng Mofokeng from Kagiso Active, who has been at the forefront of the training process, says the first phase of the project has been a success.

She is looking forward to the second phase of the project. The second phase with a

budget of R4.3 million, includes testing of the teachers at selected schools. It will commence in June 2011.

"We have learned a lot in terms of scheduling our time properly so that we don't clash with the activities of the department and how to maintain and manage the labs so that everything is functional," said Mofokeng.

The most important part of the project, which is the E-Skills training itself, focuses on these elements:

- using the keyboard and mouse
- disk and file management
- software theory
- word Processing 2007
- Excel and PowerPoint presentation
- internet/email, and computers in teaching practice.

"When we first started with this programme, most of the teachers didn't even know how to hold or use a mouse. We needed to start from scratch," said Mofokeng.

With the help of mock assessments and the dedication of the teachers and the department, Mofokeng says most of them can now type their own question papers – something which none of them had ever done before.

"It is great to see the wonderful and positive difference that this programme has brought to the schools," said Mofokeng.

## Impact: Improved quality of teaching

The Department of Education has also come on board by offering its support and monitoring the progress of the project. The department has offered its facilities for training purposes and they keep a record of attendance to make sure that the selected schools participate.

The project currently provides a total of 27 sessions per teacher for three hours a day. At the end of the programme, the teachers will be expected to write an exam, and those who pass will be awarded a certificate accredited by the British Computer Society.

The programme is offered in both English and Setswana to help simplify the understanding of the concepts for the teachers.

"The reason for this is to make sure that we reach the target we set of 85% pass rate of teachers who enter the programme," said Mofokeng.

Bontle Katane is one of the programme's passionate trainers who travel from village to village every week to promote computer literacy in schools.

Since joining the programme in January, Katane now offers training to 81 teachers and principals from schools around the Modikwe village.

"When I first began with the training, the teachers were very discouraged, Some of them were even scared to touch the computer, it was a foreign concept to them," said Katane.

But with her friendly and fun approach to teaching, she has managed to replace their fears with confidence and positive thinking. "I made them confess their fears and face them head on. They all took a vow that by the end of the programme they will be computer fundis and that approach worked miracles," said Katane.

Her biggest challenge, she said, has been trying to teach old people to let go of their insecurities and accept that they need help to improve their teaching methods.

Her ultimate goal is to see all her students type their own question papers and use technology to make teaching fun for their learners.

"I've taught them how to use projectors and do PowerPoint presentations to make learning easier and fun. Some of them didn't even know that such programmes were available," said Katane.

Thato Mohibidu, who trains a much younger group than Katane's, says she attributes her success to promoting the culture of teamwork.

"I don't stand there and bark instructions, we all work as a team and that helps eliminate the chances of someone getting lost during the class," said Mohibidu.

She says the programme has not only helped improve the quality of teaching in classrooms, but has contributed to the society at large.

"Some of these teachers are community leaders and church elders, so learning how to do presentations and organise documents has helped them in other aspects of their lives," said Mohibidu.

This falls in line with Kagiso Active's objective of ensuring that the teachers be taught computers for various functions in order to make them more efficient and productive in their daily lives.

With the second phase approaching, the trainers are hoping that all their hard work will be seen in typed exam papers in June 2011.



Teachers practising their newly acquired computer skills

## Education

In Mpumalanga province Xstrata Coal South Africa's Kwa-Guqa Learning Centre in Emalahleni, Witbank, offers ABET, and a range of other programmes, including computer literacy, to residents of Kwa Guqa. To accommodate shift workers its doors are open from 07:00 to 20:00. An additional four classrooms were constructed in 2010 to accommodate the growing demand for training from the community.

Future plans for the Centre include adding a multi-purpose skills centre that will offer training in building industry skills, including plastering, bricklaying and plumbing.

The Centre is registered with the Department of Basic Education who pays the salaries of the principal and eight of the Centre's educators. It is also used as a regional examination centre by the Department of Basic Education.

# R40.5 million

**26% of our social investment went to education**

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Forty two community members have reported to the Centre that they have been able to secure employment as a result of the skills they have learned and the certificates they have earned.

## Our impact in communities

During 2010 Xstrata Alloys conducted a survey that assessed the impacts of our operations on the communities in which Xstrata Alloys operates. The results show that we are making a significant socio-economic contribution to the areas from which we draw our employees and that Xstrata Alloys is a significant driver of economic growth. While these areas are not wealthy their economic development profile has improved dramatically. The study concluded that the implementation of Social and Labour plans has probably contributed to the positive experience of Xstrata Alloys of stakeholders in these areas.

We partner with government, international organisation and non-governmental organisations, particularly in the area of public health to get the best possible value out of our investment for the community.

# R48 279 156

**spent by Xstrata South Africa on public health between 2006 and 2010**

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# R10.7 million

**7% of our social investment in 2010 went to public health**

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## Public health and HIV/AIDS

Xstrata Alloys and Xstrata Coal South Africa have formed public private partnerships through which communities have access to prevention, treatment and care for HIV and AIDS, as well as other communicable and associated diseases. Both businesses have funded clinics and hospices in the communities in which they operate. These include six HIV/AIDS wellness centres in the townships of Phola, KwaGuqa, Ermelo, Breyten and Delmas and an HIV/AIDS clinic in Lydenburg in Mpumalanga province. There is also a clinic at the Rhovan vanadium operation in Brits in the North West province

and a clinic at the Lion ferrochrome plant in Limpopo province. Xstrata Coal South Africa, partnering with Re-Action and the Department of Health, are also building a 24-hour health care centre at Kriel in Mpumalanga, which will provide primary healthcare to over 15 000 people.

Xstrata Alloys is also funding two hospices and a trauma centre in North West province.

Both Xstrata Alloys and Xstrata Coal South Africa supported the government's HIV counselling and treatment (HCT) campaign, both through funding and providing testing sites. At one testing site provided by Xstrata

Alloys over 2 000 community members volunteered to be tested for HIV.

Since 2009 Xstrata Alloys, partnering with the Regency Foundation, has invested in an HIV and AIDS education and prevention programme for pupils between the ages of 12 and 15 called HIV & Me. In 2010 this partnership brought the programme to 10 schools in the North West province, reaching 1 653 pupils and 43 teachers. The programme will continue in the Limpopo and North West provinces in 2011.



>  
The Klarinet Thusong Multipurpose Community Centre in the Klarinet Township in Emahlahlani in which Xstrata Coal South Africa invested R7.5 million

# Case study

## Investing in public health infrastructure

Thandiwe Ngxola is a sickly 74-year-old woman who is unsteady on her feet. Every month she makes the dreaded journey to a make-shift clinic which caters for hundreds of people in Thubelihle, a small community in Kriel, Mpumalanga province. Ngxola was diagnosed with high blood pressure more than ten years ago, a condition which relies on medication to keep it in check.

Her monthly routine includes waking up at 04:00, walking 10 kilometres and crossing a busy intersection where hundreds of trucks and motorists pass each day.

If she leaves her house a minute late she may come back without her medication. That is a risk she cannot afford to take. Ngxola, who lives alone in a one-bedroom house, is one of many South Africans who still struggle to gain access to convenient and quality healthcare.

The R14 million clinic which Xstrata Coal South Africa is building less than two kilometres from her home means she and hundreds of other residents in Thubelihle can finally breathe a sigh of relief.

The clinic will be open 24 hours a day, catering for maternity cases and emergencies, in and around Rietspruit and Ga-Nala.

“As an old woman who lives by herself, one can only imagine the positive impact that this new clinic is going to have in my life. It’s really a dream come true for me,” said Ngxola.

Xstrata’s decision to build the multipurpose clinic was in response to the Department of Health and Social Development’s plea to strengthen primary health care in remote communities.

Thubelihle was chosen because its current clinic is old and dilapidated and can no longer cope with the increasing patient population in the surrounding areas. Currently, the clinic, which has a high influx of patients closes at 12:00, which means hundreds of people who need medical care are turned away every day.

“All we are hoping for from this new clinic is speedy and better service for all,” said Ngxola.

The building of the 1 600 square metre clinic began in October 2010. Xstrata Coal South Africa expects to be able to hand over the completed clinic to the local municipality in June 2011. Site Manager Goodman Skhosana is confident that their deadline will be met due to the smooth running of the operation so far.

“Besides the heavy rains, which slightly delayed the building of the clinic’s foundation, we haven’t had any major setbacks. Everything is running in order and the community is anticipating the completion of the clinic,” said Skhosana.

The clinic, whose services will be free, will include a maternity ward, a pharmacy, a dentist, three doctors, emergency services,

youth community development services, nurses quarters, consulting rooms and its own ambulance.

Natalie Maseko, a young mother with a sick child, could not hide her joy at the prospect of having a clinic a stone’s throw away from her home.

“As a mother you feel helpless when your child is sick and you cannot do anything to help them. More than anything this clinic is going to benefit our children,” said Maseko. In a community where public transportation is also an issue, Maseko says by the time she makes it to a clinic with her sick baby, there’s always a huge possibility that she will find it closed.

“It has been a very depressing time for us, being sick is almost a death sentence. We are grateful for this lifeline,” says Maseko. The construction of the clinic has also created job opportunities for the locals and business owners in surrounding areas are happy for the boost this initiative is going to bring to their businesses.

More than 60 people were employed for the project, including a 53-year-old labourer Constance Noxolo, whose job includes plastering and cleaning tools.

## Impact: Public healthcare available to the community of Thubelihle 24 hours a day

"I am so happy that I was given a chance to work in this predominately male environment. The money that I get here has helped my family in a big way, this development has been a blessing to us all," said Noxolo.

Another grateful community member is small business owner, Connie Skhosana. She opened her spaza shop in August 2010, selling fish and chips, pap and steak, and providing a pay phone service on the side.

Builders at the clinic have been supporting her business and she cannot wait for the increase in her profits once the patients start rolling in.

"I couldn't have chosen a better time to start a business. My location will mean more customers for me and a healthy bank balance for my family and me," said a visibly excited Skhosana.

Twenty-three year old Sarah Mayisela, the community liaison officer for the project, says the general feedback from the community has been positive.

In the last community meeting they had, she says the majority of the residents were happy about the size of the clinic, the life skills and variety of services it will bring to the community. They are also pleased about the jobs the project has helped create so far.

"We have made it a priority to inform the community about any developments that are happening regarding the clinic. After all it's theirs," said Mayisela.

She says though everyone is happy, there's an expectation from community members that they are going to get jobs once the clinic has been completed. According to Mayisela, this expectation could become a problem if these jobs do not materialise.

>  
A baby being weighed at the clinic which serves the residents of Thubelihle



### Infrastructure development

Most of our operations are in relatively undeveloped areas. In order to improve living conditions for our employees and the communities in which we operate, we partner with government and local communities to repair infrastructure, provide roads, running water, community centres and business parks. Infrastructure projects are usually part of our social and labour plan's local economic development commitments.

Among Xstrata South Africa's infrastructure development projects in 2010 were two multipurpose community centres: the Klarinet Thusong multipurpose centre

in the Klarinet township in Emalahleni, Mpumalanga province and the Sekhukhune multipurpose centre in Limpopo province. Xstrata's investment in these centres was over R14 million. These centres bring key services such as pension payout points, satellite police stations, post offices, Home Affairs offices, ATMs, primary healthcare facilities and Department of Labour offices to these remote communities. They also accommodate skills training initiatives.

### Disputes relating to land use

Xstrata Alloys is currently in discussions regarding land claims instituted by communities over the farms on which the Lion ferrochrome plant is situated and the

farms where the Thornclyffe, Mototolo and Magareng mines are situated. A further land claim has also been instituted over portions of the property comprising the Eland platinum mine operations.

Landowners in the vicinity of the Xstrata-Merafe Chrome Venture's Horizon mine instituted legal action against Xstrata, Merafe Resources and the Minister of Mineral Resources to set aside the conversion of mining rights granted to Merafe by the Minister and for the conversion process to start again. Xstrata on behalf of the Venture is defending the action and counsel is of the opinion that prospects of defending the claim are good.



# ENVIRONMENTAL SUSTAINABILITY

We aim to preserve and restore the natural environment throughout the life cycle of our mining and smelting activities

## MATERIAL ISSUES

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### ACCESS AND ALLOCATION OF RESOURCES

#### EFFICIENT USE OF RESOURCES

- Impact of operations on climate change
- Water use and protection

#### CONTROL OF ENVIRONMENTAL IMPACTS

- Emissions to air
- Waste

#### BIODIVERSITY AND LAND MANAGEMENT

#### PRODUCT STEWARDSHIP

- Impact of thermal coal use by customers on climate

# CHALLENGES

- Climate change and energy management, particularly in the Xstrata-Merafe Chrome Venture's smelters
- Resource management – particularly water and energy
- Waste, emissions, sulphur dioxide (SO<sub>x</sub>) and particulate matter in Xstrata Alloys and the combustion of diesel fuel and dust emissions in Xstrata Coal South Africa associated with surface operations, materials handling and mine ventilation fans, and tailings management
- Biodiversity and landscape functions

## Management and strategy

We manage the environmental risks and impacts of our operations through a Group-wide environmental risk and performance management framework. Each commodity business tailors its approach to environmental management to fit with its operational and business management processes. However, the approach to the environmental management of each commodity business remains consistent with the commitments and specifications of our Group-wide sustainable development and risk management frameworks<sup>37</sup>.

## An integrated approach

Management accountability is central to our integrated approach. Every year we review our environmental risks and opportunities as part of our business strategy and planning process. Our environmental risks are captured and integrated into our site, division, commodity business unit and Group-level risk registers. This approach involves the whole management team in the analysis and treatment of environmental risks and performance, not just the environmental specialists.


Our sustainable development assurance programme, which aligns with ISO 14001<sup>38</sup> and the International Council of Mining and Metals (ICMM)<sup>39</sup> Sustainable Development Principles, requires independent site audits every three years. These audits, undertaken by specialists, include assessments of both environmental management systems and risks. The findings from these audits are used by each site when they prepare their annual sustainable development improvement plans. These plans are tracked and reviewed by the business unit's executive team. Site specific environmental compliance and system audits are used to identify opportunities to improve environmental management at the site.


Our employees are trained in risk management and environmental awareness. (For details on training in environmental awareness and risk management, see page 54 of the Training and development section of this report.)

## Minimising impacts

We are committed to minimising our impacts throughout the life of our operations and rehabilitating land once our operations have ceased. The Group's Sustainable Development Policy outlines our commitment to identifying, understanding and mitigating the negative environmental impacts of our activities. We focus on identifying and using opportunities to help protect and improve the environment by, for example, creating protected areas for biodiversity-rich habitats on the land that we own or lease<sup>40</sup>.

We recognise that by their very nature, mining activities have an impact on the natural environment. There is a great deal we can do to mitigate these impacts and ensure that they are not long term.

 <sup>37</sup> For further detail see the Strategy and governance section at [www.xstrata.com/sustainability/ourapproach/strategy/](http://www.xstrata.com/sustainability/ourapproach/strategy/)

 <sup>38</sup> ISO (International Standards Organisation) 14001 are internationally recognised environmental management standards

<sup>39</sup> See glossary

## Managing resources and emissions

We are finding and researching ways to further reduce our energy use per tonne of product and are looking at safe solutions to capturing, storing and using carbon dioxide (CO<sub>2</sub>) emissions from smelting ferrochrome to produce energy<sup>41</sup>.

We reduce our emissions to air from our smelters, to a point where they do not significantly affect air quality.

Xstrata South Africa's emission of ozone-depleting substances is minimal.

We are reducing our water consumption levels and finding innovative ways to use the water available on our operations to meet our own needs<sup>42</sup>.

## Climate change and energy

Climate change remains an important longer-term risk for our business. The potential risks we face from climate change are both physical and financial. The risks posed by climate change are complex as they include operational risks such as business continuity, health and safety, environmental aspects and regulatory aspects. We need to constantly engage with legislators, researchers and industry bodies and track and evaluate the situation and develop an improved awareness of and preparedness for the risks associated with climate change. We are working with

members of our industry, as well as other stakeholders, to understand the potential impacts of climate change and take action to minimise them in areas likely to be most affected and where we can have the most effect.

## Possible physical and financial impacts

Physically, climate change could materially affect our operations through damage and/or business interruption caused by flooding, extreme storms, reduced availability of water and possible health impacts.

In South Africa some of our operations are located in arid areas where prolonged drought conditions could limit production growth or prevent us from operating.

One of the financial risks associated with greenhouse gas (GHG) emissions is the introduction of a carbon tax in South Africa, which could result in increased costs for electricity and transportation, as well as higher operational costs related to GHG emission monitoring, reporting and accounting. Higher energy costs could negatively affect our ability to contain operating costs and maintain production. If climate change policies lead to a reduction in the use of coal as a source of energy around the globe, this could have a negative financial impact on our coal business.

## Understanding our carbon footprint


Our understanding of our carbon footprint and the opportunities for greater energy efficiency continues to improve. Our implementation of site and process carbon and energy intensity targets are important building blocks that will allow us to measure our performance more accurately and identify areas for improvement.

Our operations give rise to significant GHG emissions, both directly and indirectly. They are also exposed to the potential impacts of climate change resulting from GHG emissions.

We generate GHG emissions from our smelting processes and from our energy use. The use of diesel in our vehicles contributes directly to the creation of GHGs and the electricity supplied to us from coal-fired power stations contributes indirectly to the creation of GHGs.

In the case of coal, when our customers burn the coal they purchase from us to produce energy or steel, this also contributes to the creation of GHGs.

We are committed to minimising GHG emissions and improving energy efficiency. We recognise the magnitude and importance of this challenge.

 <sup>40</sup> As part of its biodiversity and land management programme the Xstrata-Merafe Chrome Venture's Boshhoek ferrochrome plant, has established a small game reserve on its premises populated with a variety of different buck. Its licence from the Department of Environmental Affairs permits the plant to keep 18 animals. The original animals have already bred and produced young, indicating that the environment around the smelter is a healthy one

 <sup>41</sup> See the case study on how the Xstrata-Merafe Chrome Venture has found ways to be more energy efficient on page 78

<sup>42</sup> See the section on water on pages 80 to 81 of this report for details on how Xstrata Alloys' Eland platinum mine and Goedgevonden mine, a joint venture between Xstrata Coal South Africa and African Rainbow Minerals (ARM) managed by Xstrata Coal South Africa, have made innovative use of water on their sites

## OUR STRATEGY

The three elements of our climate change strategy are to:

- continually improve the quality of our data relating to GHG emissions and energy use

- create and develop more energy efficient mining, concentrating, smelting and refining processes
- achieve ongoing energy efficiency improvements by identifying,

implementing and sharing programmes between our operations and businesses that significantly advance energy efficiency improvements at our operations.

### Our greenhouse gas (GHG) emissions come from:

Emissions	Source
<b>Scope 1 emissions</b> Direct GHG emissions from sources that are owned or controlled by Xstrata South Africa	<ul style="list-style-type: none"> <li>• Methane and carbon dioxide released from decayed organic matter during coal mining which is relatively low in Xstrata Coal South Africa's operations</li> <li>• Carbon dioxide emissions from the use of reductants such as anthracite, coke and coal in the ferrochrome smelting and vanadium production process</li> <li>• Fuel such as diesel and oil used on site</li> <li>• Emissions from the production of char and electrode paste in our carbon operations</li> </ul>
<b>Scope 2 emissions</b> Indirect GHG emissions from purchased electricity	<ul style="list-style-type: none"> <li>• Purchased electricity used to run our operations, generated mostly from burning fossil fuels</li> </ul>
<b>Scope 3 emissions</b> Other indirect GHG emissions from sources not owned or controlled by Xstrata	<ul style="list-style-type: none"> <li>• Combustion by our customers of the coal we produce</li> <li>• Transport of materials and consumables to our operations</li> <li>• Transport of our product from our sites to our customers</li> <li>• Waste sent to offsite landfill</li> </ul>

While the Xstrata-Merafe Chrome Venture achieved a reduction in GHG emissions during 2010, increased production meant an increase in its emission of total particulates, oxides of nitrogen and oxides of sulphur (see the detailed sustainability data on pages 99 to 137 for more information).

Xstrata Alloys is managing and funding the development of an air monitoring network in the Rustenburg area of the North West province. The network integrates data from numerous stations. It assists the local municipality with air quality reporting, which is part of the municipality's public health reporting

obligations and provides information to local industry for use in air quality impact assessments for new emissions licences and environmental impact assessments for planned future expansions.



<sup>43</sup> We have included information on the Xstrata-Merafe Chrome Venture's energy use and the GHG emissions of all Xstrata Alloys' operations as these operations are the greatest consumers of energy and emitters of GHGs in our South African operations. Tables covering the energy use and GHG emissions of all our operations can be found in the Detailed sustainability data section on pages 99 to 137

<sup>44</sup> The most accurate way to measure whether a business has reduced its energy use is to calculate how much energy it has used to produce its product. Looking at the overall energy consumption figure does not give an accurate picture because, for example, during the financial crisis production was down so energy consumption was down, but in 2010 production was up so energy consumption overall increased

<sup>45</sup> One joule can be defined as the work required to produce one watt of power for one second. It is named after the English physicist James Prescott Joule. One joule in everyday life is approximately the energy required to lift a small apple one metre straight up. The petajoule (PJ) is equal to 10<sup>15</sup> joules



<sup>46</sup> Emission intensities are used to estimate air pollutants or GHG emissions based on industrial production levels

<sup>47</sup> See the Detailed sustainability information on pages 99 to 137 for more detailed information on GHG emissions

## PROGRESS

Reducing the consumption of energy and greenhouse gas (GHG) emissions<sup>43</sup>

# 7%

reduction in energy use per tonne of ferrochrome produced<sup>44</sup> since 2007 by the Xstrata-Merafe Chrome Venture, a major user of electricity in its smelters (In 2010 it used 15.00 Petajoules (PJ)<sup>45</sup> of electricity to produce one metric tonne of ferrochrome)

# 4.2%

reduction in the intensity<sup>46</sup> of Xstrata Alloys' greenhouse gas emissions (measured in carbon dioxide equivalents (CO<sub>2</sub>-e) per metric tonne) from 7.5 CO<sub>2</sub>-e per metric tonne<sup>47</sup> in 2009 to 7.2 CO<sub>2</sub>-e per metric tonne in 2010



# Case Study

## Saving energy through efficiency

The Xstrata-Merafe Chrome Venture (Venture) has 20 furnaces on five production sites producing ferrochrome. The energy saving technologies employed in its plants that make it the lowest cost ferrochrome producer in South Africa include Xstrata's own proprietary Premus technology and Outotec pelletising and sintering technology.

The Premus technology employed at the Venture's Lion ferrochrome plant in Limpopo province and at its Lydenburg ferrochrome plant is the world's lowest cost ferrochrome technology and also the most energy efficient.

When the Lion ferrochrome plant is operating at full capacity (330 000 tonnes a year), it produces at an energy saving of about 429 000 megawatt hours (MWh)<sup>48</sup> a year<sup>49</sup>. Premus technology uses ore in the form of pellets, formed in a kiln. These pellets are fed into submerged arc furnaces while hot. The processing of the ore into pellets in the kiln pre-prepares the ore and reduces the amount of work that needs to be done in the furnace to turn it into metal (ferrochrome). This is because the ore is already partially reduced to a metal in the kiln. The fact that the pellets are hot when they go into the furnace also helps to make the smelting process more energy efficient as less heat is required to smelt<sup>50</sup> the chrome ore.

Typically, technologies used in ferrochrome smelters can at best pre-heat the raw materials with a gas burner before they enter the furnace. The pre-heating temperatures achieved using these methods are only a fraction of those achieved in the Lion ferrochrome plant.

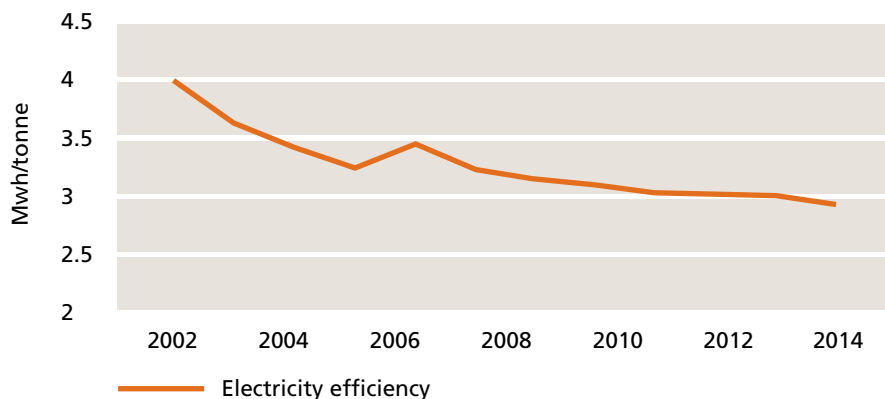
The Outotec technology the Venture uses at its Boshhoek and Wonderkop ferrochrome plants agglomerates (collects together) the fine ore into pellets and sinters these pellets (uses heat to remove all the liquid from the pellets and hardens them).

These pellets make it possible for the Venture to run the furnaces at these operations more efficiently. The Venture is constructing an additional pelletising and sintering plant at its Rustenburg plant, which will help it achieve further energy efficiencies.

# 25%

improvement over the past decade

**The average electrical energy efficiencies the Xstrata-Merafe Chrome Venture has already achieved and expects to achieve by 2014**



<sup>48</sup> A kilowatt is 1 000 watts and a megawatt is a million watts. The average household in the United Kingdom uses 4 700 kilowatts of electricity a year

<sup>49</sup> This saving is calculated by comparing the energy consumption of the plant using Premus technology with the energy consumption of a conventional ferrochrome plant

<sup>50</sup> The word smelt describes the process of heating and melting ore into metal

### Reducing emissions from the use of coal

Coal remains an abundant, reliable and relatively low-cost energy source which we believe has a critical role to play in ensuring energy security and economic growth. It provides approximately 25% of the world's energy and is an important energy resource for countries lacking any significant oil and gas reserves.

At the same time we recognise that the current and predicted levels of GHG emissions resulting from the burning of coal, which is most polluting in terms of GHG emissions per British thermal unit (Btu)<sup>51</sup> produced, are unsustainable and need to be addressed with urgency and innovation.

As major producers of thermal coal we have an obligation to support the development of technologies that will reduce the overall emissions associated with the extraction, transport and use of the coal we produce. We support and invest in the research, development and commercialisation of low-carbon emission technologies that will reduce the impacts associated with our customers' use of the coal we produce, in partnership with other coal producers, governments and scientific and academic organisations.

A reduction in the emissions from the use of thermal coal can be achieved by improving thermal efficiency, that is by enhancing the combustion processes to increase the amount of useful energy obtained from a given quantity of coal. Another method of reducing emissions is the use of carbon dioxide capture and storage (CCS)

technologies that reduce the GHG emissions of coal-fired power generation.

### Effluents and waste

Mining and metallurgical operations produce considerable amounts of hazardous and non-hazardous wastes which, unless properly disposed of, can be a threat to the environment. The costs of waste disposal can be high.

Xstrata South Africa does not transport, import, export or treat waste deemed hazardous under the Basel Convention Annex I, II, III and VIII.

All our operations have a waste management plan in place to reduce, reuse, recycle or responsibly dispose of the waste they generate. This minimises the amount of waste sent to landfill and cuts costs. Coal mines, metallurgical mines and smelters produce distinct wastes that need to be dealt with in a specific manner.

### Waste

Accredited service providers dispose of the waste we are unable to recycle and do so in a responsible manner. Materials currently recycled include scrap metal, paper, wood and conveyor belts.

The wastes we produce include waste rock removed to expose ores or coal. This waste can be placed in disused opencast or underground operations, reused during site rehabilitation or stockpiled. Tailings and slag from processing ore and concentrates, as well as coal mine tailings (fines<sup>52</sup>) suspended

in water, are recycled or reused whenever possible.

Xstrata Alloys recycles UG2 ore waste product of the platinum refining process. UG2 ore is used to make chromite pellets in our ferrochrome smelters.

### Effluents

All our operations are zero-effluent discharge operations. In terms of our licence conditions and requirements effluent may only be discharged in an emergency in consultation with the relevant authorities.

Environmental incidents recorded at our operations include incidents that occur as the result of contractor activity.

### Management of overburden, rock, tailings and sludge/residues

The Sustainable Development Standards and guidelines applied in our operations set stringent expectations for the management of tailings and waste rock facilities.

We store waste rock in dumps, which we rehabilitate by shaping rock piles and revegetating them to mimic the natural environment.

At our coal operations once mining has been completed the waste rock and overburden is levelled as part of the rehabilitation process and capped by way of soil placement. It is then seeded and maintained to ensure sustainable growth.

 <sup>51</sup> See glossary

 <sup>52</sup> Coal fines are very small particles of coal with maximum particle size usually less than 4mm and rarely above 8mm

## PROGRESS

### Towards reducing consumption

16%

reduction in fresh water consumption per tonne of ferrochrome produced year-on-year (4 789.9 megalitres (MI) per metric tonne)<sup>53</sup>, substantially exceeding the reduction target of 5% for the year

22%

reduction in total water usage in the Xstrata-Merafe Chrome Venture as a result of improved water management

47.6%

reduction in Xstrata Coal South Africa's fresh water intensity per run-of-mine (ROM)<sup>54</sup> tonne, year-on-year<sup>55</sup>

13%

increase in total water consumption in Xstrata Alloys in 2010 when the production of the Xstrata-Merafe Chrome Venture increased 48% year-on-year, indicating that Xstrata Alloys achieved a reduction in its overall consumption

### Water

#### Redefining water use

We aim to use water as efficiently as possible and to avoid any negative impacts on water quality in the environments in which we operate. Our water use includes water employed in our primary activities, which are mining, smelting and the washing of coal in our coal treatment plants, and in our non-primary activities such as dust control and garden maintenance. The potable water used in our operations is mainly sourced from a variety of water service providers, including local municipalities. In some instances our operations produce their own potable water, which reduces their reliance on water service providers.

Previously, all water used in dust suppression and plant usage from dirty water onsite was considered recycled, as this water was captured onsite and reused in the activities onsite. We have revised how we define recycled and dirty water from onsite dewatering activities. Essentially, all rainwater that falls on "dirty areas" is captured and stored for onsite activities such as dust suppression and for use in coal washing plants. In the case of Goedgevonden colliery, rainwater is treated and used for potable water. As a result it is not possible to accurately compare the 2010 water usage with 2009 data.

Water usage measurement is an evolving area. We continue to refine how we measure our water usage and our collection processes in order to meet our evolving management and reporting needs.


#### Water use and availability

Our operations work with the Department of Water Affairs, local communities, local authorities, the farming community and other industry users to ensure the sustainability of water resources and equitable access to water resources for all stakeholders.

The availability of water is a key consideration when we plan the expansion or construction of an operation. We use the results of the environmental impact assessments (EIAs) we undertake to guide our decision making and to ensure we have the least possible impact on local water resources during the various phases of projects.

Our sites in water scarce areas implement water conservation plans, set water intensity targets and have measures in place to help them be as water efficient as possible<sup>56</sup>.

 <sup>53</sup> See glossary

 <sup>54</sup> Run-of-mine coal (ROM) is the coal delivered from the mine to the coal preparation plant

<sup>55</sup> This indicator measures the intensity of water use in terms of volumes of water per unit of value added. In this case the value added is the coal produced and the unit is a run-of-mine tonne of coal

 <sup>56</sup> See the sections on targets set and achievements on pages 21, 25 and 27

&gt;

The plant and stormwater water dam at Goedgevonden colliery



### **Using onsite water to provide potable water and reduce our reliance on water service providers.**

Eland platinum mine needed to prevent dirty water overflowing into the environment. The project to achieve this included a water management system that has made the mine self-sufficient in terms of its water requirements. This has freed up water the mine no longer requires from water service providers and made it available for environmental and agricultural use in the Brits area where the mine is located. This area is known to have food security risks. The availability of this additional water for food production is contributing to food security in the area.

The rainwater which falls on the dirty areas of Goedgevonden mine is collected and stored in stormwater dams. From these dams the water is pumped to an onsite treatment plant where it is treated to potable standards and used to meet all the mine's potable water requirements. The plant produces approximately two Megalitres of water per day.

## Incidents and compliance

Xstrata South Africa aims to achieve zero environmental incidents at our operations. We monitor, report, investigate and remediate any incidents that occur and apply lessons learnt to prevent similar events in the future. Our operations are required

to report any environmental high potential risk incidents (HPRI), including near-misses, that could have resulted in a Category 4 or 5 incident, even when the actual impact was less significant (the section on safety on page 44 has detailed information on the handling of HPRI's).

## Incident categories

Category	Rating	Impact
Category 1	Negligible	Causes negligible reversible environmental impact, requiring very minor or no remediation
Category 2	Minor	Causes minor, reversible environmental impact, requiring minor remediation
Category 3	Moderate	Causes moderate, reversible environmental impact with short-term effect, requiring moderate remediation
Category 4	Serious	Causes serious environmental impact, with medium-term effect, requiring significant remediation
Category 5	Disastrous	Causes disastrous environmental impact, with long-term effect, requiring major remediation

## PROGRESS

- No environmental fines, penalties or prosecutions have been incurred by our operations in South Africa for the past three years
- No Category 3, 4 or 5 incidents were recorded in our operations in 2010 and no Category 4 or 5 incidents have been recorded in Xstrata South Africa's operations for the past four years
- The exceptionally heavy rainfalls experienced in parts of South Africa have challenged the capacity of our stormwater storage dams. In 2010 Xstrata Alloys' Thornccliffe mine experienced an unusually heavy period of rainfall during which 1 000 litres overflowed from its stormwater dam
- At Boshhoek ferrochrome plant a major hazard incident (MHI) occurred at one of its furnaces which caused a disk to erupt resulting in the spillage of process water. The remediation costs for this spill were approximately R112 000
- The detailed tables of our performance in the five incident categories in the detailed sustainability data on page 122 include details of the type of oil, fuel, waste, chemical and other spills to land or water. There has been a significant reduction in our Category 2 and 3 incidents. While Category 1 incidents have increased, we believe this increase reflects a growing culture of reporting incidents, including near-misses.



## BIODIVERSITY<sup>57</sup> AND LAND MANAGEMENT

# 9 097

hectares of land were disturbed by  
Xstrata South Africa in 2010

# 20%

of the land owned, leased or managed  
by Xstrata Alloys was used for its  
operations, while 15% of the land  
owned, leased or managed by Xstrata  
Coal South Africa was used for its  
operations during 2010

# 1 562

hectares of land were rehabilitated in  
Xstrata South Africa's operations in  
2010

# 15%

of the land owned, leased or managed  
by Xstrata Coal South Africa in 2010 was  
in areas of high biodiversity (see the  
case study on page 85 which discusses  
the management of biodiversity at the  
Goedgevonden mine). Xstrata Alloys  
does not have any areas of high  
biodiversity on the land it owns, leases  
or manages

### Planning for rehabilitation and restoration

In 2010 the South African Trust Fund, established by Xstrata South Africa to cover the future costs of rehabilitating our sites over their operational lives, contained over R666 million. We annually estimate the future costs of rehabilitation and the value of this fund is based on these estimates

Careful planning, management and investment of resources can ensure that mine areas are rehabilitated and restored to an ecological<sup>58</sup> status very similar to the conditions that existed before mining activities began. We also manage waste rock and closed mines to prevent acid rock drainage occurring.

We consider the impact of our operations on local landscapes across the life cycle of a site, from initial exploration to decommissioning and closure.

### Identifying potential impacts


The baseline biodiversity and landscape function studies we conduct help us to address any runoff prevention, soil quality and landscape maintenance issues such as soil erosion. These are undertaken during the feasibility or exploration phase of a project. We also conduct environmental risk assessments for new operations and for major changes to existing operations. These assessments, having established the existing conditions of biodiversity and landscape function (e.g. soil erosion control and watershed management), identify the

potential impacts of the proposed activities that could be a risk to biodiversity and landscape functions. They also identify the standards that need to be applied or used as benchmarks, and opportunities for improvements.

The information from baseline and risk-related studies is shared with affected and concerned stakeholders and used in the development and implementation of biodiversity and landscape function management systems and programmes and site closure plans.

### Site closure

Xstrata uses the International Council for Mining and Metals' mine closure toolkit to develop its site closure plans, together with the requirements contained in Standard 10 of the Xstrata Sustainable Development Standards<sup>59</sup>. All our operations are required to develop, maintain and implement closure plans, which are reviewed annually. These reviews are used to assess our closure and rehabilitation cost estimates, and to review environmental, social and legal circumstances.

 <sup>57</sup> Biodiversity is the variety of plant and animal life in the world or in a particular habitat, a high level of which is usually considered to be important and desirable

<sup>58</sup> Ecological means related to or concerned with the relationship of living organisms to one another and to their physical surroundings

 <sup>59</sup> See [www.xstrata.com/content/assets/pdf/x\\_sus\\_sdstandards2008.en.pdf](http://www.xstrata.com/content/assets/pdf/x_sus_sdstandards2008.en.pdf)

## Conservation plans

Biodiversity conservation plans are required at all our operations to protect and, where possible, enhance the local ecology. We are committed to rehabilitating and restoring the land both during the mine life as well as after the mining activities have ceased. These plans, which are regularly updated, take into account the local context of an operation, including any protected or high biodiversity areas near to it.

As a member of the International Council on Mining and Metals (ICMM) Xstrata is committed not to mine or explore on World Heritage properties.

While none of our operations are in protected areas, some are located in or adjacent to biodiversity-rich areas. Xstrata Coal South Africa has over 6 000 hectares of wetlands on its properties. These are sensitive areas that are important not only for their unique and rich biodiversity, but also because of the ecosystem<sup>60</sup> services<sup>61</sup> they provide. (See the table in the detailed sustainability data section on pages 115 to 118, setting out the details of our operations adjacent to areas of high biodiversity value, where they are located and the ecological sensitivities in the areas concerned.)

## Land management

Our operations remove invader species to stimulate the growth of indigenous species. We maintain firebreaks to prevent the loss of biodiversity during fires. Biomonitoring<sup>62</sup> is conducted for bodies of water downstream and upstream of our operations to manage identified biodiversity risks related to the quality of river water.

The case study in this section of the report – *The environmental challenges involved in establishing a new mine* – provides an example of how Xstrata approaches biodiversity issues in areas of high biodiversity value – in this case a wetland – that are outside protected areas.



<sup>60</sup> An ecosystem is a community of living and non-living things that work together. It includes plants, trees, animals, fish, birds, micro-organisms, water, soil and people. When an ecosystem is healthy it can sustain itself

<sup>61</sup> Humankind benefits from a multitude of resources and processes that are supplied by natural ecosystems. Collectively, these benefits are known as ecosystem services and include products like clean drinking water and processes such as the decomposition of wastes. The United Nations 2004 Millennium Ecosystem Assessment, a four-year study involving more than 1 300 scientists worldwide, grouped ecosystem services into four broad categories: provisioning (e.g. the production of food and water), regulating (e.g. the control of climate and disease; supporting (e.g. nutrient cycles and crop pollination); and cultural (e.g. spiritual and recreational benefits)

<sup>62</sup> Biomonitoring is the measurement of the burden of toxic chemical compounds, elements, or their metabolites, in biological substances

# Case study

## The environmental challenges involved in establishing a new mine

Nhlanhla Mkhonto, who is responsible for the environmental management at the Goedgevonden mine, a joint venture between Xstrata Coal SA and African Rainbow Minerals (ARM), has been involved with the Goedgevonden mine from the pre-feasibility stage. The water challenges he has experienced at the mine prompted him to study geohydrology.

### Creating wetlands

The environmental challenge he finds most significant is the part of the wetlands that will be impacted by Goedgevonden's mining, which is approximately 500 hectares. "As part of our water usage licence conditions we were required to artificially create wetlands on site," he told us. "To access our reserves we had to divert a stream that was running through the wetland. We then had to import wetland soil and as much of the wetland species and grasses as possible to the area. Constructing the wetland was quite a challenge, which included earth moving challenges. The vegetation has now established itself well and we are implementing a maintenance plan that will ensure that the ecosystem remains intact."

In terms of its water use licence conditions Goedgevonden still needs to create a further wetland offsite. It has identified a suitable site in the upper Olifants catchment area and has engaged with a number of stakeholders to get them to agree with its plans, including the Water Board and the Parks Board. Goedgevonden still needs to secure the

involvement of the Department of Mineral Resources in protecting the area from future development that might impact negatively on it. Nhlanhla explained that Goedgevonden has identified that there is some mining activity in this area, which puts it at risk. The mine is hoping to persuade the Department of Mineral Resources to recommend to the Minister that she uses the power she has to restrict mining in the area. Goedgevonden is concerned that if mining is not restricted in this area, someone may start developing a mine and damage the wetland after it has been established.

Goedgevonden also undertook a flora and fauna study of all the species and vegetation that occur within the mine's boundary area. No endangered species were identified onsite during the study.

### Responsible rehabilitation

As an opencast mine Goedgevonden has strict environmental management programme (EMPR) commitments. Once the mine reaches steady state, if it disturbs 50 hectares of land in a year it is committed to rehabilitating 50 hectares in that same year. So it will be rehabilitating continuously. To ensure it has the topsoil it needs to rehabilitate the site, the mine has a dedicated topsoil fleet stripping and stockpiling the topsoil ahead of mining.

The aim is to rehabilitate as much land as possible to agricultural standards so it can be used for farming in the future. This

requires a minimum of 300 mm of topsoil to be replaced to ensure that the land at least meets grazing standards.

### Responsible water management

Goedgevonden is committed to responsibly managing the water its mining generates. It has its clean and dirty water separation in place and the rainwater which falls on the dirty areas of the mine is collected and stored in stormwater dams. From these dams the water is pumped to an onsite treatment plant where it is treated to potable standards and used to meet all the mine's potable water requirements. The plant produces approximately two Megalitres of water per day.

## PRODUCT STEWARDSHIP

Xstrata South Africa monitors and addresses the impacts and risks associated with the use of our products throughout their life cycles, including during stages outside of our control, such as use, recovery, recycling and disposal.

We work with national and international industry associations (see table on page 148), customers and suppliers to understand the environmental health and safety risk of our products and to find ways to mitigate these risks.

In terms of Registration, Evaluation and Authorisation and Restriction of Chemicals (REACH<sup>63</sup>), all the products we export to countries in the European Union have been pre-registered, with the relevant pre-registration certificates and numbers available.

Xstrata is also actively involved in REACH.

Because the packaging in which our products are sold is not returned to us, no packaging materials were recycled by Xstrata South Africa in 2010.

Xstrata Alloys has participated in a life cycle inventory project for primary ferrochrome production. The scope of the project was to create a life cycle inventory for one kilogram of chromium contained in ferrochrome. The project includes the mining of chrome ore and transportation to the smelters, the transport of reductants and fluxes to the

smelters and the smelting and production of ferrochrome up to the gate of the smelters. It will also include a complete assessment of downstream ferrochrome uses (for example in the stainless steel industry). Xstrata Alloys is collaborating with other South African producers on this project.

To ensure the quality of our products, our systems are aligned with the requirements of ISO 9001<sup>64</sup>, 2000 and some of our smelters have been certified. Our laboratories are ISO 17025<sup>65</sup> accredited, which ensures that the methods and equipment we use are accurate.

### Ferrochrome

Ferrochrome is the final product produced by the Xstrata-Merafe Chrome Venture. Our product is not produced from secondary material. In terms of customer health and safety, there are no material health or safety complications related to the final product produced and marketed by the Venture.

Most of the ferrochrome we produce is used in the manufacture of stainless steel. Stainless steel is not a single alloy but rather a group of iron-based alloys containing a minimum of 10.5% chrome. Other elements such as nickel and molybdenum are added and the chromium content increased to improve corrosion resistance, heat-resisting properties and fabricating characteristics. Over 60 stainless steel grades are recognised by the American Iron and Steel Institute (AISI). It is the presence of ferrochrome that creates the invisible surface layer that

prevents the rusting of the iron base by forming a complex chrome oxide that does not allow oxygen to attack the surface.

A global life cycle inventory study has also been carried out by the International Stainless Steel Forum (ISSF) to quantify resource use, energy and environmental emissions associated with the processing of eight stainless steel industry products, from the extraction of raw materials from the ground, through to the stainless steel factory gate. The eight products included in the study are the main stainless steel grades and finishes.

The ISSF also developed a methodology for allocation of credits for recycling in order to assess accurate profiles of stainless steel products. The methodology is consistent with the ISO standard conforming methodology used by the International Iron and Steel Institute (IISI) for carbon steel. The methodology report demonstrates that stainless steel is a highly sustainable material and that the recycling ratio at end of life is a very significant factor when assessing the environmental profile of a metal like stainless steel.

As stainless steel is a corrosion resistant alloy, its life expectancy is usually long. It requires a minimum of maintenance and offers attractive life cycle cost benefits over alternatives such as carbon steels. Stainless steel is easily cleaned and is therefore an obvious choice for catering equipment and the food and beverage manufacturing industries.

 <sup>63</sup> See glossary

 <sup>64</sup> ISO 9001 is a quality management system designed to help organisations ensure they meet the needs of customers and other stakeholders

<sup>65</sup> ISO 17025 is the main standard used by testing and calibration laboratories to check measuring devices

Stainless steel is melted electrically and, in most cases, refined by using inert air distilled gases such as argon. Great care is taken to minimise fume and dust emissions. Some plants are equipped to recycle dust into the stainless steelmaking process.

Most of the stainless steel processing consumable materials, including cooling water, lubricating oils, pickling acids and interleaving paper, are recycled in the plant or by specialist contractors.

### Platinum group metals (PGMs)

PGMs are used in many applications to reduce environmental impacts. These include catalysts for refining processes, which improve energy efficiency, autocatalysts that reduce harmful emissions from vehicles and fuel cells that produce energy with fewer carbon emissions.

Although PGMs are used for various “green” applications, this does not mean that we should ignore product stewardship principles when it comes to these metals.

The majority of our Platinum division’s production is platinum, but also includes palladium and rhodium, which we sell in concentrate form to Anglo Platinum for further beneficiation.

### Vanadium

Vanadium pentoxide and value added ferrovanadium are the main products of our Vanadium division. We supply our customers with vanadium pentoxide powder, fused vanadium pentoxide flakes and ferrovanadium.

Vanadium is principally used in metallic alloys, to add strength, toughness and resistance. It is also used in high-strength microalloyed

steels, which make structures much lighter, and in catalysts that prevent pollution.

Vanadium pentoxide protects eyes, bodies, food and medicines from the sun’s harmful ultraviolet rays. Vanadium catalysts remove harmful constituents from effluents and natural gas. Vanadium pentoxide is used as a catalyst for the oxidation of sulphur dioxide to trioxide in the manufacture of sulphuric acid which is the basis for the production of fertilisers throughout the world, without which the production of cereals and other foods on the scale required to maintain basic food production would not be possible.

### Thermal coal

Xstrata Coal acknowledges the need to reduce the carbon dioxide equivalent emissions from burning coal and is working with others to develop the necessary technologies.

We invest in the development and commercialisation of low emissions technologies in partnership with other coal producers, governments and scientific and academic organisations.

We believe that the reduction of emissions from the use of thermal coal is necessary and achievable in a number of ways, including employing new combustion processes; converting coal to gas to be used as the primary fuel source in power stations, instead of burning coal directly; and capturing the carbon dioxide from coal or coal gas combustion and storing it permanently underground. This is known as carbon capture and storage or geo-sequestration (CCS).

CCS technology is the only currently available technology that allows very deep cuts to be made in carbon dioxide emissions to

atmosphere from fossil fuels at the scale needed.

Xstrata Coal contributes to the funding of a number of projects involved in research and development of low emissions technologies and has committed US\$25 million to the FutureGen public private partnership (PPP) established to design, build and operate the world’s first coal-fuelled, near-zero emissions, carbon capture and storage power plant.

Our products are not sold as retail products. As a result no marketing communications, advertising promotion or sponsorship is involved in the sale of these products.

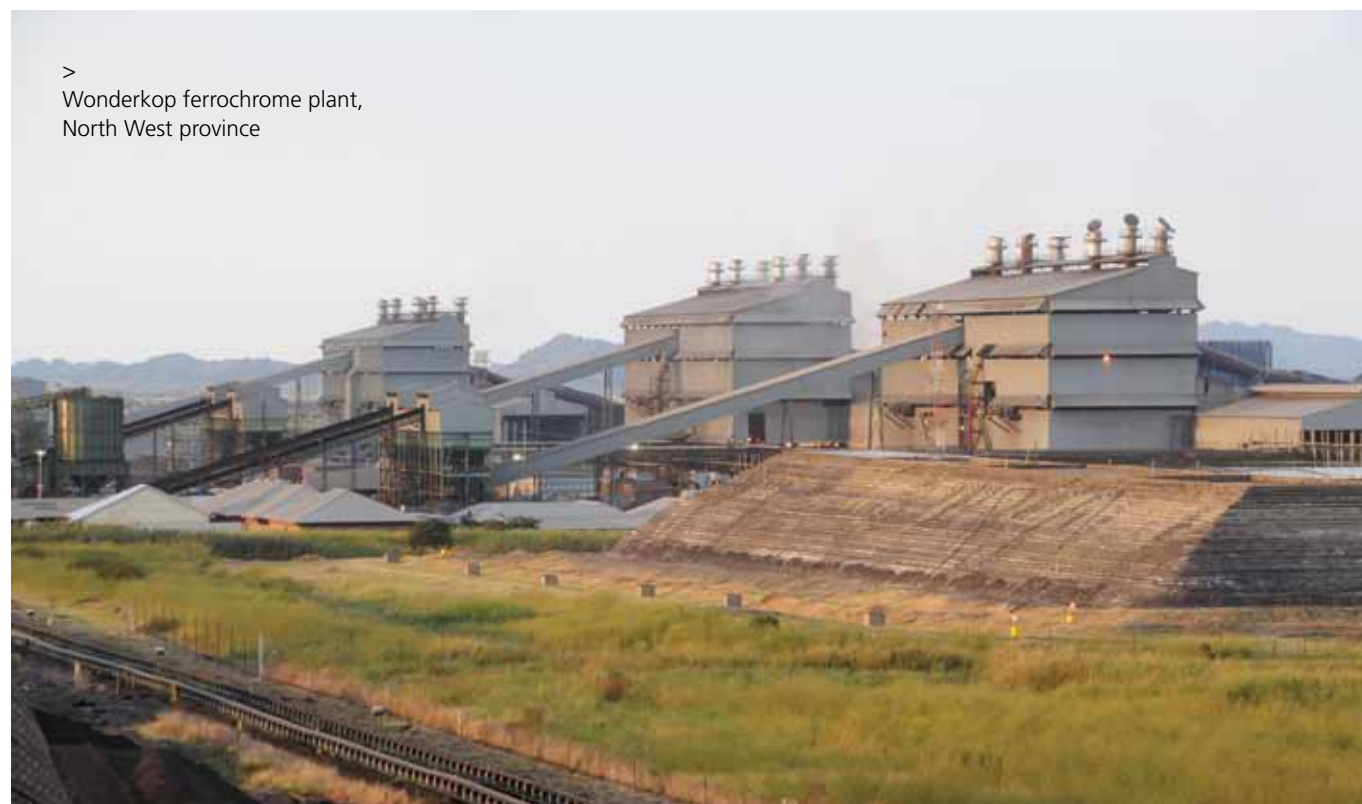
The materials safety data sheet that accompanies every Xstrata product provides information on product composition, toxicology relating to human health and the environment, fire and explosion risks, handling, storage and exposure issues and recommendations for managing spills and disposal. In addition to all this, we inform all of our employees, contractors, customers and other stakeholders about the hazards and best practices for handling, transporting, using, storing and disposing of our products. Xstrata South Africa’s operations did not record any incidents of non-compliance with regulations and voluntary codes concerning labelling or product and service information during 2010.

Because Xstrata South Africa does not maintain databases of customer information, it is not at risk of losing customer data or breaching customer privacy.

Neither Xstrata Alloys nor Xstrata Coal South Africa incurred any fines for non-compliance with laws and regulations concerning the provision and use of products and services.

## National and international industry and commodity associations in which Xstrata plc, Xstrata Alloys and Xstrata Coal are involved

Focus	Organisation/initiative	Date of joining
General	International Council on Mining and Metals	2006
	Chamber of Mines of South Africa	2002
Coal	International Energy Agency – Coal Industry Advisory Board	2002
	World Coal Institute	2002
	Cooperative Research Centre for Greenhouse Gas Technologies (CO <sub>2</sub> CRC)	2004
	South African Colliery Managers' Association	2008
	Carbon Capture and Storage	2008
Metals	International Chromium Development Association	1985
	Vanitec (international body for vanadium producers)	1998
	Ferro Alloys Producers Association (FAPA)	1985



# GOVERNANCE, ETHICS AND ENGAGEMENT

## MATERIAL ISSUES

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### GOVERNANCE

- Corporate governance
- Sustainable development governance
- Risk management
- Ethics
- Human rights

### STAKEHOLDER ENGAGEMENT

# CORPORATE GOVERNANCE

## Challenges

- Compliance with the South African Code of Corporate Practices and Conduct set out in the third King Report on Corporate Governance (King III)

The South African Code of Corporate Practices and Conduct set out in the third King Report on Corporate Governance (King III) has adopted a principle-based approach that is applicable not only to listed entities but also to any organisation operating in South Africa. Xstrata South Africa is therefore reporting on its performance in terms of King III in this report. A table explaining our application of the code is to be found on page 143 to 146 of the Detailed sustainability data section of this report.

Xstrata South Africa is not listed on the JSE Limited and therefore the structure of its board is not governed by the JSE Limited's regulations for publicly owned companies.

The members of the Xstrata South Africa board, which meets quarterly, are drawn from its senior management team.

The Xstrata Group operates a devolved management model with appropriate authority delegated to commodity

business unit boards (Xstrata Alloys and Xstrata Coal are both commodity business units). The business units are responsible for profitability to the level of earnings before interest and taxation (EBIT).

Both Xstrata Alloys' and Xstrata Coal's business direction is the responsibility of executive committees chaired by their respective chief executives. These committees determine the operational and financial management of the business units. At divisional level, within both business units, the divisional heads are responsible for profitability.

Xstrata Coal South Africa is a division of Xstrata Coal and its Chief Operating Officer is responsible for its profitability. Xstrata Alloys has four divisions: the Carbon division, the Ferralloys division, the Platinum division and the Vanadium division.

## Governance and management structures

### The members of the board of Xstrata South Africa (Pty) Limited as at 31 December 2010:

#### Directors:

- PJ Nienaber (Chairman) – CEO Xstrata Alloys
- RSE Alberts – Operations Director: Xstrata Coal South Africa
- W Barrett – Executive Director, Special Projects, Xstrata Alloys
- GJ Dreyer – Managing Director, Ferralloys division, Xstrata Alloys

- MJ Houston – Chief Operating Officer Xstrata Coal South Africa
- MJ Moffett – Chief Financial Officer Xstrata Alloys
- BD Moolman – Managing Director, Platinum division, Xstrata Alloys
- AH Sangqu – Executive Director
- CL Smit – Non-executive Director

## Governance structures in joint ventures

Xstrata Alloys' joint ventures have management boards and executive committees that meet either monthly or quarterly. Both Xstrata Coal South Africa and its joint venture partner, African Rainbow Minerals (ARM), have proportional representation on the steering committee of the Participating Coal Business, the Goedgevonden board and the ARM Coal board.



### 17 SD Standards

- LEADERSHIP, ACCOUNTABILITY & ETHICS**
- 1 Xstrata Directors, managers, employees and contractors demonstrate continuing commitment to excellence in HSEC management and ethical business practices.
- PLANNING, RESOURCES, OBJECTIVES & TARGETS**
- 2 HSEC Strategy and annual HSEC Plans, together with achievable and measurable objectives and targets are an integral part of the Business Planning Process, leading to continuous improvement in HSEC performance.
- COMPETENCY & BEHAVIOR**
- 3 Employees and contractors have the appropriate levels of HSEC competence to perform their work activities, in accordance with Xstrata's HSEC Policies, Standards, Procedures and behavioral expectations.
- COMMUNICATION & ENGAGEMENT**
- 4 Communicate and consult effectively with stakeholders, and engage them in HSEC matters through equitable and cultural appropriate means.
- RISK & CHANGE MANAGEMENT**
- 5 HSEC hazards and aspects associated with Xstrata operations, including planned and unplanned changes, are identified, risk assessed and eliminated or controlled. Catastrophic Hazards are specifically covered in Standard 8.
- CATASTROPHIC HAZARD**
- 6 To ensure that the organization has the culture, processes and structures to identify and manage potential health, safety and environmental catastrophic hazards over the life of its operations.
- LEGAL COMPLIANCE & DOCUMENT CONTROL**
- 7 All relevant laws, regulations, standards, codes and Xstrata HSEC performance requirements are complied with, through and effective HSEC management system that includes document and data control.
- OPERATIONAL INTEGRITY**
- 8 Operational Integrity of plant and equipment is ensured, and the HSEC risks associated with operational and maintenance activities are managed.
- HEALTH & OCCUPATIONAL HYGIENE**
- 9 To identify, assess and control occupational health hazards through practical and reasonable measures to, where practicable, eliminate work-related illnesses and injuries.
- BIODIVERSITY & LAND MANAGEMENT**
- 10 To develop and implement scientifically-sound technologies and procedures for the effective management and conservation of biodiversity and rehabilitation of disturbed land to a planned post-closure use.
- CONTRACTORS, SUPPLIERS & PARTNERS**
- 11 Compliance with Xstrata's HSEC Policy and Standards through the systematic selection, engagement and management of contractors, suppliers and partners who provide Xstrata with products and / or services.
- COMMUNITY**
- 12 To identify key community risks and opportunities and manage those effectively to prevent adverse impact, and deliver sustained benefits to the communities in which Xstrata operates.
- PROJECT MANAGEMENT**
- 13 To effectively manage the HSEC risks throughout all project phases, i.e. exploration, conceptual design, pre-feasibility, detailed design, procurement, construction, commissioning, operation, decommissioning, closure and disposal.
- PRODUCT STEWARDSHIP**
- 14 To minimize adverse HSEC impacts of Xstrata's operations and products and promote technologies that are efficient in energy, resources and materials usage.
- INCIDENT MANAGEMENT**
- 15 To investigate, respond to and take appropriate corrective and preventative action following a HSEC incident.
- ASSESSMENT & REPORTING**
- 16 To provide assurance that all operations meet the performance criteria defined by Xstrata's HSEC standard and the goals and objectives of the organization.
- EMERGENCIES, CRISES & BUSINESS CONTINUITY**
- 17 To ensure appropriate resources and effective emergency response, crisis management and business continuity plans are in place to manage site emergencies and business crises.

## SUSTAINABLE DEVELOPMENT GOVERNANCE

### Challenges

- Accountability at board level for sustainable development
- Robust sustainable development governance framework
- Audit and assurance processes
- Sustainable development governance in Xstrata

### Progress against challenges

There is accountability at both Group board level and business unit board level for sustainable development and a robust sustainable development governance framework and audit and assurance processes are in place.

- The Xstrata plc board sets and reviews sustainable development policy globally
- Its Health, Safety Environment and Community (HSEC) Committee assists the board in its HSEC responsibilities and provides guidance on sustainable development issues<sup>66</sup>
- Chief executives of the commodity businesses are represented on the Group Executive Committee, which is formally responsible for sustainability strategy development and implementation (i.e. the chief executives of Xstrata Alloys and Xstrata Coal are both members of the Group Executive Committee)
- The Xstrata plc board provides oversight of the Executive Committee's performance

- The board HSEC Committee, chaired by an independent non-executive director, meets quarterly to review and evaluate performance reports from the commodity businesses<sup>67</sup>
- The HSEC Committee reviews and evaluates reports on the effectiveness of Xstrata's Sustainable Development Framework and benchmarks Xstrata against other mining and beneficiation sector companies
- Xstrata plc's General Manager: Sustainable Development, who reports directly to the Chief Executive of Xstrata plc, is responsible for the overall strategic management and global implementation, review and assurance of Xstrata's Sustainable Development Framework. The Framework is regularly reviewed and updated.

### Sustainable development governance in Xstrata Alloys

- Xstrata Alloys' Sustainable Development Committee, a sub-committee of the Xstrata Alloys board, which meets quarterly, has primary responsibility for Xstrata Alloys' sustainable development strategy. Its members include the Chief Financial Officer, the Director: Sustainable Development, the Divisional Managing Directors, the Divisional General Managers, the General Works Managers, the Mine Managers and representatives of the joint venture partners
- The committee reports any significant sustainable development issues to the Xstrata plc board and the Xstrata Alloys board. Every year it reviews its role and presents any recommended changes to the Xstrata plc board

### Sustainable development governance in Xstrata Coal

- The Xstrata Coal board's Sustainable Development Committee is responsible for reviewing, monitoring and evaluating reports on the implementation and effectiveness of the Sustainable Development Policy, 17 Sustainable Development Standards, strategy, performance and governance within Xstrata Coal. The Committee meets quarterly
- The Xstrata Coal Sustainable Development Committee reports significant sustainable development issues to the Xstrata Coal board, which in turn reports to the Xstrata Executive Committee. The Xstrata Coal Sustainable Development Committee, which is chaired by the Chief Executive, meets quarterly
- Primary responsibility for Xstrata Coal's sustainable development strategy lies with its executive team. The Divisional Chief Operating Officers play a key leadership role in ensuring the integration of sustainable development into each division, i.e. the Chief Operating Officer of Xstrata Coal South Africa is responsible for ensuring the integration of sustainable development into Xstrata Coal South Africa
- Xstrata Coal South Africa's Management Committee develops, sets and implements sustainability strategies in accordance with the Xstrata Coal business strategy and meets monthly to monitor the division's sustainable development performance

<sup>66</sup> See page 142 for a diagram showing the governance structure in place in Xstrata

<sup>67</sup> See [www.xstrata.com/sustainability/ourapproach/governance](http://www.xstrata.com/sustainability/ourapproach/governance)

## Our Sustainable Development Framework – robust and sustainable

Xstrata's Sustainable Development Framework applies across all our commodity businesses, ensuring compliance with a common policy, principles and standards. The Framework is designed to ensure that each operation and project is managed consistently and to the highest standards of international practice. The Framework consists of:

- the policy, principles, standards and assurance process, which underpin the framework:
  - Xstrata's Statement of Business Principles
  - Sustainable Development Policy
  - 17 Sustainable Development Standards
  - Assurance process
- the integration of our sustainable development risk management with our broader enterprise risk management process
- the integration of our sustainable development strategy and planning process with our operational and business strategy and planning process, from site or project level to Group level.

Our 17 Sustainable Development Standards incorporate a precautionary philosophy, which means that they are based on a philosophy of taking action before something goes wrong; for example, operating in a manner that avoids damage to the environment and adverse impacts on communities. The Standards are aligned with the International Council on Mining and Metals (ICMM) sustainability principles and guidelines, the UN Global Compact, Voluntary Principles on Security and Human Rights and ISO31000 (risk management), ISO 14001 (environmental management) and OHSAS 18001 (occupational health and safety management).

## Achieving and maintaining our sustainable development strategy and standards

In keeping with our devolved management model, operational management determines how our strategies and standards are achieved and maintained. This allows our operations the flexibility to respond appropriately to local conditions with local solutions and to take responsibility for being accountable to local stakeholders.

Clear governance and effective communication is essential to ensure there is consistent implementation and consistently high standards of ethical behaviour and sustainable development performance.

### Sustainability assurance

Our sustainability and risk assurance processes provide the Xstrata plc board and management with assurance that the Group's Business Principles, policies and standards are being met and that material risks are being identified and managed effectively. In addition audits, incident investigations and routine reporting provide management with the information and data they need to monitor the performance and effectiveness of our sustainable development systems. The assurance programme includes:

- external third party audits against our Sustainable Development Policy and Standards conducted at least every three years
- more frequently conducted internal management and risk/hazard-focused audits
- audits reviewing systems and the performance against systems
- specialist risk audits conducted by Group Internal Audit

Each audit identifies potential improvements and summarises the actions that can be taken

to further improve sustainable development performance in a sustainable development improvement plan.

### Review of assurance process

Xstrata conducted a review of its sustainable development assurance processes in 2010. A number of changes and improvements have been made as a result of this review. For example:

- updated protocols will be used to conduct third party Sustainable Development Standards audits. The new protocols include the creation of separate audit protocols for the pre-approval and post-approval phases of major development projects
- a pool of qualified independent third party sustainable development auditors, approved at Group level, will provide an increased number of trained independent auditors
- from 2011 each business unit will provide the Group Executive Committee and the board HSEC Committee with reviews of the implementation and effectiveness of site and project sustainable development improvement plans. These plans will address audit findings, internal reviews of site sustainable development management systems and performance and will detail the actions required to implement and maintain Xstrata's Sustainable Development Framework
- the sustainable development risk audit process has been incorporated into our internal audit programme.

## RISK AND CRISIS MANAGEMENT

### Challenges

- Governance of risk
- Management of risk

We have comprehensive risk management and crisis management plans in place at Group and business unit level.

A structured and comprehensive risk management framework and system has been implemented across the Xstrata Group. An ongoing bottom-up self-assessment process is in place<sup>68</sup>. The results of this process are continually updated in the risk registers of commodity businesses and the Group's risk register.

Our risk management policy requires each commodity business to undertake a comprehensive annual risk review as part of an ongoing process for identifying, evaluating and managing significant risks, including material sustainable development risks.

The conclusions drawn from this review are integrated into the annual business strategies and plans of each business unit and presented for board approval. Quarterly reports on progress against plans, significant changes in the business risk profile and the actions taken to address risk control and the mitigation of risks, including sustainable development risks, are provided to the business unit audit committees, the Xstrata Group's Audit Committee, Executive Committee and the board.

Each commodity business has processes in place for monitoring, reporting on progress and the completion of tasks related to key risks. For insurance purposes our internal audit and independent consultants conduct regular risk reviews. Risk learnings and consistency of practices across the Xstrata Group are shared at annual workshops attended by commodity business unit risk champions.

Our business unit crisis management plans include emergency response, business continuity and crisis management plans in consultation with external emergency agencies. These plans include protocols for when and how to escalate a crisis from a commodity business unit level to a Group crisis. The plans also cover training for employees and other stakeholders, annual reviews and the inclusion of lessons learnt from actual emergencies and simulations in these plans.

## ETHICS

### Challenges

- Ethical framework to comply with tightening global regulatory environment for bribery and corruption and range of existing and emerging risks faced by mining and metals companies

Xstrata monitors conduct in its organisation and discloses any incidents of unethical conduct in its organisation.

In order to comply with the tightening global regulatory environment for bribery and corruption and to address the range of existing and emerging ethical risks faced by

our business, we developed and introduced a global Bribery, Fraud and Corruption Policy, Third Party Due Diligence Standards and a Code of Conduct in 2010. Our employees are being trained in the policy, standards and code.

The new Code of Conduct provides more detailed guidance on our expectations for the conduct of all employees, contractors, agents and other third parties who work for or on behalf of Xstrata in a range of circumstances. The Code consolidates or refers to other relevant policies or guidelines.

### Ethics line

The Xstrata ethics line is a confidential whistleblowing facility operated independently by KPMG. The line is available to employees, contractors, suppliers, customers or business partners to report any breaches of our Business Principles, Code of Conduct, policies or legislation in confidence. A freephone number is provided for this purpose.

In 2010 11 661 Xstrata South Africa employees and 11 794 contractors received copies of our Business Principles and were trained in applying them.

### Incidents of corruption

# 14

**cases of corruption were reported on the company ethics line**

<sup>68</sup> A table containing the risks, mitigation of these risks and opportunities created by these risks can be found in the Xstrata plc Annual Report 2010 pages 42 – 47 at [www.xstrata.com](http://www.xstrata.com)

6

**employees were dismissed after their cases had been investigated and disciplinary procedures had been followed**

1

**employee resigned**

6

**cases were investigated and no proof of corrupt activity was found**

1

**case is still under investigation**

We do not tolerate any incident of bribery or fraud committed by our employees, contractors, suppliers, joint venture partners and other business partners and take consistent and swift action (including dismissal and legal action) against those who commit bribery or fraud, irrespective of length of service or position. All our operations are expected to monitor this issue closely and to have systems in place to prevent bribery and fraud. Where these systems fail the operations are expected to address the situation.

### Transparency

Our Business Principles commit us to the maximum transparency that is commercially possible. We regularly publish our financial, operational and sustainable development performance.

### Free enterprise

To support our commitment to free enterprise and to ensure our employees act in accordance with this commitment, we provide web-based training on competition and fair trade to all relevant employees every two years. Employees must achieve a score of over 70% when their knowledge is tested once they have completed the training.

## HUMAN RIGHTS

### Challenges

- Compliance with South African human rights legislation including the Constitution and Bill of Rights
- Alignment of human rights practices with the UN Global Compact ten universally accepted principles in order to protect the human rights of our employees and the communities in which we operate

24 636

**training courses in human rights were provided to the Xstrata South Africa workforce (contractors and employees) in 2010**

Xstrata supports the United Nations (UN) Universal Declaration of Human Rights and the International Labour Organisation (ILO) Conventions and is a signatory to the UN Global Compact; and we have aligned our Sustainable Development Framework with ten universally accepted principles in the areas of human rights, labour, the environment and anti-corruption. We respect the legislation of South Africa and comply with its human rights legislation, including the Constitution and the Bill of Rights,

which safeguard the basic human rights of employees in South Africa. In addition, our policies clearly state that we do not tolerate any form of discrimination and that all employees and stakeholders are to be treated with dignity and in a manner that is culturally appropriate, irrespective of gender, background or race.

Our Sustainable Development Standards require our operations to maintain community relations strategies that uphold and promote human rights and respect cultural considerations and heritage.

Where we employ security personnel (either directly or as contractors) we require that they receive appropriate human rights training and monitor compliance with this requirement. All private security firms contracted to Xstrata South Africa are required to complete a questionnaire and provide supporting documentation to establish that their personnel have received appropriate human rights training and that they adhere to the requirements of the Voluntary Principles.

All our sites are required to undertake human rights risk assessments, implement grievance resolution procedures and set and monitor appropriate performance standards for all contractors, including security personnel.

In 2008 Xstrata committed to implementing the Voluntary Principles on Security and Human Rights across all its operations. The Voluntary Principles were drawn up to guide companies in maintaining the safety and security of their operations within an operating framework that ensures respect for human rights and fundamental freedoms. The Principles highlight the role companies can play in promoting respect for human rights and strengthening the rule of law.

### Child and forced labour

Xstrata's Business Principles uphold the elimination of all forms of forced or compulsory labour and prohibit any form of child labour. The minimum age for employment in the Xstrata Group is 18, regardless of local legislation. None of our operations in South Africa have been identified as having significant risk in respect of incidents of forced or compulsory labour. The age of the youngest person employed by Xstrata South Africa in 2010 was 18.

No incidents of violations involving indigenous people were identified during the reporting period.

Xstrata supports the Extractive Industries Transparency Initiative (EITI), which aims to improve governance by promoting transparent reporting of company payments and government revenues in the extractives sector. Xstrata also participates in the International Council on Metals and Mining's (ICMM) Resource Endowment Initiative, which aims to identify the factors that have allowed some countries to benefit from their substantial resource endowments through economic growth and poverty reduction and to determine practical steps that can be taken by companies, governments, local communities and aid agencies to build capacity to achieve better outcomes from resource development where this is lacking.

Xstrata supports the UN Universal Declaration of Human Rights and the International Labour Organisation Conventions. It respects the legislation of each country in which it operates. In 2008, the Xstrata plc Executive Committee committed to implementing the Voluntary Principles on Security and Human Rights across Xstrata's global operations. Published in 2000, the Voluntary Principles

were drawn up "to guide companies in maintaining the safety and security of their operations within an operating framework that ensures respect for human rights and fundamental freedoms". Xstrata continues to implement the requirements of the Voluntary Principles at its sites. These requirements encompass: human rights risk assessments; relations with public security forces; and relations with private security providers. Xstrata reports annually on its progress in upholding the Voluntary Principles.



### Externally developed principles, charters, industry groups, organisations and initiatives to which Xstrata subscribes or of which it is a member

- Broad-Based Socio-Economic Charter for the South African Mining Industry (Mining Charter) and the Mining Charter Scorecard, established to monitor performance against the Charter
- Ferro Alloys Producers Association (FAPA)
- Global Carbon Capture and Storage Institute
- HIV/AIDS Public Private Mix and Powerbelt Initiative
- International Chromium Development Association (ICDA)
- Northwest Air Pollution Control Forum (NAPCOF)
- REACH (Registration, Evaluation, and Authorisation and Restriction of Chemicals)
- South African Chamber of Mines
- Vanitec
- Water Research Commission
- World Coal Institute
- Coaltech
- Olifants River Forum
- South African Colliery Managers' Association (SACMA)
- South African National Energy Regulating Institute (SANERI) for Carbon Capture Storage (CCS)
- South African Mining Development Association (SAMDA)

# STAKEHOLDER ENGAGEMENT

## Challenges

- Engaging with internal stakeholders which include our employees, trade unions, contractors and business partners
- Engaging with external stakeholders including the communities in which we operate, our customers, government at national provincial and local levels, regulators, the media, investors, financial institutions, suppliers, our partners, advocacy groups and any others interested in or affected by our businesses.

Stakeholder engagement is an integral part of our sustainable development and risk management strategies.

At Xstrata South Africa we believe that in order to build meaningful, mutually beneficial relationships with our stakeholders, the most important thing we need to do is understand the expectations of our stakeholders. If we do not understand their expectations, we cannot meet or manage them. This is important in all areas of stakeholder engagement, but particularly so in our engagement with our employees and the communities in which we operate.

We also need to develop engagement mechanisms that will allow us to gain better insight into what stakeholder

issues are likely to be in the future. We are re-examining our existing approach to conducting environmental impact assessments because we believe that the current approach does not probe deep enough into stakeholder issues. As a result certain issues are either not considered, or not considered deeply enough. More focused insight at the time an environmental impact assessment is conducted could provide information on stakeholders and their concerns that will allow us to better identify, address and manage issues that are current risks or that could become risks to our business in the future. Expanding the scope of these assessments could achieve this aim. During 2010 industrial action took place at a number of our sites. We are engaging with these stakeholders – our employees and the unions – to better understand and manage their issues and to find ways of achieving labour peace at our operations.

It is important that we engage with government and regulators in a spirit of cooperation. The speedy and satisfactory resolution to the revision of the Mining Charter is the result of our industry working with government to achieve a mutually acceptable result. Xstrata is committed to engaging with government and making available to government its expertise in areas such as climate change and energy efficiency.

## Perceptions

During November and December 2010 Xstrata conducted an audit of the perceptions held by key stakeholders regarding the company's sustainability

credentials. We selected the people interviewed based on their expertise in sustainability issues. Interviewees were from the countries in which our major operations are located or countries where there is a substantial and sophisticated community of sustainability experts with a global outlook. A response from South Africa said, "Xstrata is honest. They are not shy to report on issues which expose weaknesses". A socially responsible investment analyst from the United Kingdom said, "...we find the site and divisional reports excellent. Xstrata is one of the few companies to provide this level of detail. We like (and prefer to other approaches) Xstrata's performance-focused approach to sustainability reporting".

We wish to form stronger connections to/relations with the communities in which we operate and are very aware of the challenges of introducing employees to a community with whom they are not familiar and finding ways to address these challenges.

A table setting out our stakeholder engagements, which provides you with details of our stakeholders, the material issues of concern they have with us or we have with them, how we engage with these stakeholders and how we have responded to areas of concern that have been raised by stakeholders can be found on pages 147 to 154 of the Detailed sustainability data section of this report.