GOLD FIELDS

Integrated Annual Review 2011

For the 12 months ended 31 December 2011

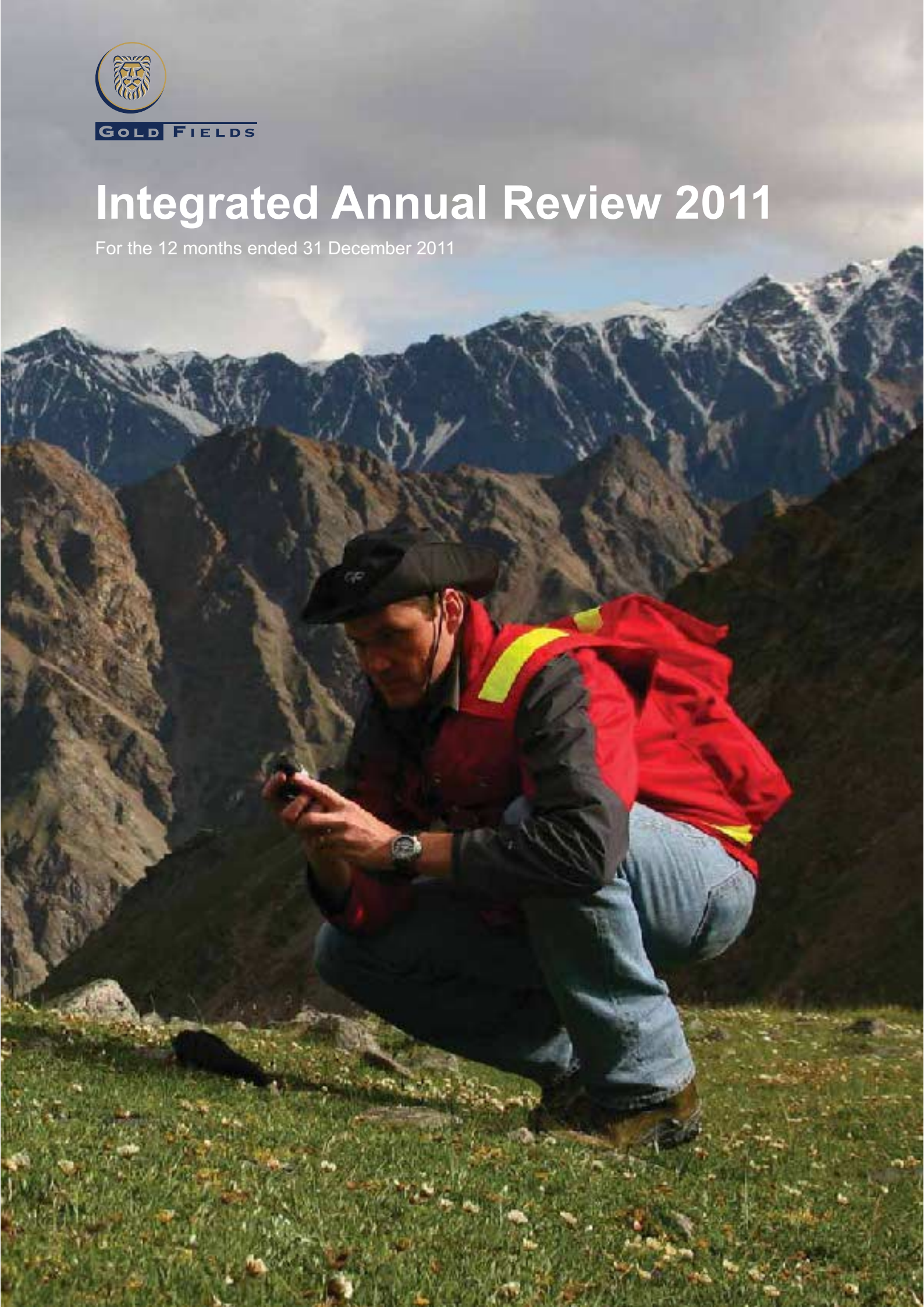

Figure 1: Key operating statistics 2011

Mine	Managed production ('000oz)	Attributable production ('000oz)	Total Cash Cost (US$/oz)	NCE margin (%)	Mineral Reserves (million Au-Eq oz)[2]	Mineral Resources (million Au-Eq oz)[2]	Employees in service[1]	Lost-Time Injury Frequency Rate
Australasia								
Agnew	194	194	696	32	1.30	3.54	235	2.72
St Ives	465	465	901	19	2.81	5.31	466	2.66
South Africa								
Beatrix	347	347	957	35	4.96	11.28	9,161	2.95
KDC	1,100	1,100	946	23	16.58	67.50	26,335	7.95
South Deep	273	273	1,073	-34	36.58	76.22	3,563	1.67
South America								
Cerro Corona	383	358	437	60	6.01	7.56	367	0.18
West Africa								
Damang	218	174	701	33	3.05	9.04	369	0.19
Tarkwa	717	573	656	42	9.31	13.61	2,575	0.21

[1] At year end
[2] Attributable

Figure 2: Global presence

Production operations
Resource development and feasibility projects
Early greenfields exploration

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Further resources

The Integrated Annual Report 2011 is made up of the following three volumes:

- Integrated Annual Review 2011
- Annual Financial Report 2011
- Mineral Resources and Mineral Reserves Overview 2011

For further details click below or visit our website at:

www.goldfields.co.za

About Gold Fields

Gold Fields is one of the world's largest unhedged gold producers, with **attributable annual production of 3.5 million gold equivalent ounces** from eight operating mines in Australia, Ghana, Peru and South Africa. Gold Fields also has an extensive and diverse global growth pipeline with four major projects in resource development and feasibility, with development decisions expected in the next 12 to 36 months.

Gold Fields has total **attributable gold equivalent Mineral Resources of 217.0 million ounces and Mineral Reserves of 80.6 million ounces**. Gold Fields is listed on the JSE Limited (primary listing), the New York Stock Exchange (NYSE), NASDAQ Dubai Limited, Euronext in Brussels (NYX) and the Swiss Exchange (SWX).

About this report

The Gold Fields Integrated Annual Report 2011, which covers the 12 months to end-December 2011[1], is made up of the following three volumes:

- The Integrated Annual Review 2011, which examines the integrated nature of our operational and sustainability performance
- The Annual Financial Report 2011, which fulfils our statutory financial reporting requirements
- The Mineral Resources and Mineral Reserves Overview 2011, which provides detailed technical and operational information on our mines and growth projects

This Integrated Annual Review provides an overview of Gold Fields eight global operations on a Group and mine-by-mine basis. The report also describes our exploration and business development activities.

We do this using an integrated approach to reporting that examines our operational, sustainability and financial performance.

The aim of our integrated approach is to enable investors and other stakeholders – including host governments, local communities and our employees – to make a more informed assessment of the value of Gold Fields and our ability to flourish in the new growth environments of tomorrow.

[1] Our previous Integrated Annual Report was for the six months to end-December 2010. Unless otherwise indicated, all references to years within the Integrated Annual Review 2011 (e.g. 2009, 2010, 2011) refer to the relevant calendar year (e.g. 1 January to 31 December 2009, etc.)

"Strategy, risk, performance and sustainability have become inseparable; hence the phrase 'integrated reporting'"

Mervyn E King, King Committee Chairman

(King Code of Governance Principles for South Africa 2009)

Dump trucks at Agnew, Australia

We believe the Integrated Annual Review, together with additional documents held online, represents an A+ application of the Global Reporting Initiative (GRI) G3.1 Sustainability Reporting Guidelines, which is the widely recognised best-practice benchmark for corporate reporting. Our auditors, KPMG, have provided independent assurance on selected sustainability information (p167) as well as our GRI A+ self-declaration.

This Integrated Annual Review also forms part of our Communication on Progress to the United Nations Global Compact. A summary of our compliance with the GRI and the 10 Principles of the United Nations Global Compact – as well as our alignment with related standards including the Millennium Development Goals (MDGs) and the International Council on Mining & Metals (ICMM) 10 Principles – is presented online.

- www.globalreporting.org
- www.unglobalcompact.org
- www.un.org
- www.icmm.com

Forward looking statements

Certain statements in this document constitute "forward looking statements" within the meaning of Section 27A of the US Securities Act of 1933 and Section 21E of the US Securities Exchange Act of 1934.

Such forward looking statements involve known and unknown risks, uncertainties and other important factors that could cause the actual results, performance or achievements of the company to be materially different from the future results, performance or achievements expressed or implied by such forward looking statements.

Such risks, uncertainties and other important factors include among others: economic, business and political conditions in Australia, Ghana, Peru, South Africa and elsewhere; the ability to achieve anticipated efficiencies and other cost savings in connection with past and future acquisitions, exploration and development activities; decreases in the market price of gold and/or copper; hazards associated with underground and surface gold mining; labour disruptions; availability, terms and deployment of capital or credit; changes in government regulations, particularly environmental regulation and new legislation affecting mining and mineral rights; changes in exchange rates; currency devaluations; inflation and other macro-economic factors; industrial action; temporary stoppages of mines for safety and unplanned maintenance; and the impact of the HIV/AIDS crisis in South Africa.

These forward looking statements speak only as of the date of this document. The company undertakes no obligation to update publicly or release any revisions to these forward looking statements to reflect events or circumstances after the date of this document or to reflect the occurrence of unanticipated events.

Figure 3: Group operating statistics

Category	2011	2010	2009	2008	2007
Gold produced – attributable (kg)	108,408	108,802	111,421	103,541	122,367
Gold produced – attributable ('000oz)	3,485	3,497	3,582	3,329	3,934
Total cash cost (R/kg)	184,515	165,526	146,456	138,665	95,846
Total cash cost (US$/oz)	795	703	540	526	423
Notional Cash Expenditure (NCE) (R/kg)	272,224	239,796	210,215	210,827	139,796
Notional Cash Expenditure (NCE) (US$/oz)	1,173	1,019	776	800	618
Gold price (R/kg)	364,216	287,150	261,517	228,160	157,275
Gold price (US$/oz)	1,569	1,220	965	865	695
Operating profit (Rm)	21,112	14,469	13,589	9,427	7,568
Operating costs (Rm)	21,312	20,082	18,368	16,026	12,947
Operating margin (%)	50	42	43	37	37
NCE margin (%)	25	16[1]	20	8	11

Figure 4: Group sustainability statistics[2]

Category	2011	2010	2009	2008
Economic value distributed (Rm)	26,629	25,658	22,794	20,557
Economic value distributed (US$m)	3,688	3,506	2,704	2,506
Total taxation and royalties paid (Rm)[3]	3,336	2,051[4]	2,098	1,307
Total taxation and royalties paid (US$m)[3]	478	275	249	159
Employee wages and benefits (Rm)	7,951	7,514	6,612	5,804
Employee wages and benefits (US$m)	1,101	1,027	784	708
Total employees	46,378	47,268	51,122	49,325
Fatalities	20	18	26	31
Lost Time Injury Frequency Rate (LTIFR)[5]	4.69	4.39	3.91	5.34
Cyanide consumption (tonnes)	23,750	21,487	22,165	18,922
CO_2-e emissions ('000 tonnes)[6]	5,298	5,350	5,507	5,212
Electricity consumption (MWh)	5,469,784	5,580,332	5,465,628	5,185,927
Water withdrawal (million liters)	78,236	76,326	72,403	75,950
Socio-Economic Development spend (US$m)[7]	54	67	11	14

[1] Restatement – previously reported as 17%

[2] Assured sustainability data for the 12 months ended 31 December 2011 are provided alongside the third party assurance statement on p167

[3] Excluding deferred tax

[4] Restatement – adjusted from R2,202 million

[5] Per million hours worked. Please note, the figures for 2009 and 2010 are restatements due to the implementation of a more accurate methodology for the calculation of hours worked – as well as the identification of past anomalies related to the shift from financial year to calendar year in 2010. Previously, these figures were reported as 3.81 and 4.38 respectively

[6] This includes Scope 1 and 2 emissions, but not fugitive mine methane emissions

[7] See p143 for a definition of Socio-Economic Development (SED) spend

Figure 5: Group financial statistics

Category	2011	2010	2009	2008	2007
Revenue (Rm)	41,877	34,391	31,772	25,360	20,470
Basic earnings – cents per share	973	161	492	400	504
Headline earnings – cents per share	970	177	611	406	248
Dividends declared – cents per share	330	140	130	215	95
Total assets (Rm)	83,352	71,061	66,276	66,402	53,766
Shareholders' equity (Rm)	48,062	46,623	44,725	43,282	37,885
Cash and cash equivalents (Rm)	6,049	5,464	1,828	1,054	1,321
Cash flows from operating activities (Rm)	15,746	12,373	8,597	7,362	2,133
Cash generated/(utilised) (Rm)	(80)	3,867	852	(533)	(975)
EBITDA (Rm)	21,112	14,469	13,589	9,427	3,754
Net debt (Rm)	9,460	3,974	6,669	9,354	5,092
Net debt: EBIDTA	0.45	0.27	0.49	0.99	1.36
Net asset value per share (R)	115.17	98.59	93.96	101.62	82.40
Return on capital employed (%)	29	23	23	15	7
Average rate US$1 = R	7.22	7.32	8.43	8.20	7.04
Closing rate US$1 = R	8.13	6.75	7.51	9.65	7.02
Ordinary share price – high	143.00	125.90	123.50	135.00	142.00
Ordinary share price – low	95.60	83.80	77.37	54.00	93.58
Ordinary share price – year end	124.60	120.60	97.98	91.90	99.00
Average daily volume of shares traded (million)	2.2	2.3	2.9	3.1	2.9
American Depository Receipts (ADRs) (US$) – high	18.55	18.49	15.82	17.61	20.08
American Depository Receipts (ADRs) (US$) – low	13.80	11.08	7.94	4.90	13.61
American Depository Receipts (ADRs) (US$) – year end	16.28	18.13	13.11	9.93	14.20
Average daily volume of shares traded (million)	4.0	4.9	6.7	7.5	4.6
Number of shares in issue (million)	723.7	720.8	705.4	653.4	652.5
Market capitalisation at year end (Rbn)	90.2	86.9	69.1	60.1	64.6

Figure 6: Attributable Mineral Resources by region (million Au-Eq oz)

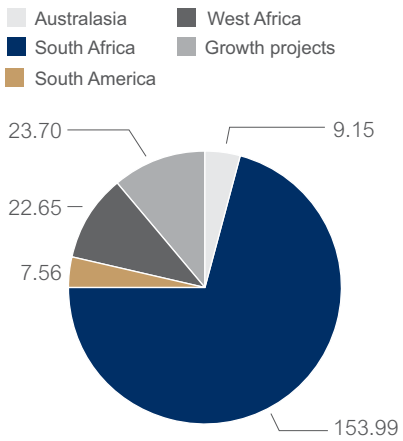

Figure 7: Attributable Mineral Reserves by region (million Au-Eq oz)

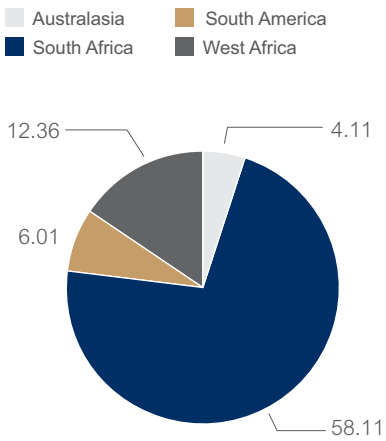

Figure 8: Average exchange rates and commodity prices

	2011	2010	2009
R/US$	7.22	7.32	8.43
US$/A$	1.03	0.92	0.87
Gold (US$/oz)	1,569	1,220	965
Gold (R/kg)	364,216	287,150	261,517
Gold (A$/oz)	1,541	1,323	1,236

1. Overview and strategy

Our Vision is to be the global leader in sustainable gold mining. Supporting our Vision and directing the strategy are six core Values that apply to every decision we make and every action we take:

- Safety: If we cannot mine safely, we will not mine
- Responsibility: We act responsibly and care for the environment, each other, and our stakeholders – our employees, communities and shareholders
- Honesty: We act with fairness, integrity, honesty and transparency
- Respect: We treat each other with trust, respect and dignity
- Innovation: We encourage innovation and entrepreneurship
- Delivery: We do what we say we will do

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Highlights

51%
Production from outside of South Africa

US$973m
Record net earnings

4th
Ranking in the global mining category of the 2011 Dow Jones Sustainability Index – the leading South African-listed mining company

50%
Rise in free cash flow to US$752 million

View from the Salaras Norte project, Chile

Gold Fields corporate office, South Africa

Agnew, Australia

Traditional representative near Damang, Ghana

1.1 Vision of the Chair

Dear Shareholders

This year, Gold Fields turns 125 years old. The company shares its history with that of the modern South Africa, as Johannesburg is also celebrating its 125th anniversary in 2012. Gold Fields has been an integral part of South Africa's mining sector, which has been instrumental in the development of the country's economy.

Having operated proudly in South Africa since 1887, our intent is to remain in South Africa for at least the next 50 to 60 years, motivated largely by our investment in the lucrative South Deep project. South Deep may well be the 'last man standing' in the country's gold mining sector, but our South African operations continue to present a unique opportunity for meaningful wealth creation and distribution – not just to our shareholders but also to our other key stakeholders in the country. This includes government, local communities and, most critically, our approximately 41,400 employees and 4,300 contractors.

Building on this firm foundation makes us even more effective as a leading global gold company, as we continue to develop opportunities further afield to advance the geographical diversification of our production.

I am pleased to report that in 2011 Gold Fields marked a significant milestone in these efforts. As recently as 2008, 62% of our production came from South Africa, but since then we have added over half a million ounces from our international regions and last year, for the first time, the majority (51%) of our production came from outside South Africa. As a result, we are firmly on track to meet our Goal of having 5 million gold equivalent ounces in production or development by 2015 – with plans for 40% to come from our South Africa region and 20% from each of our international regions.

Furthermore, the growth and diversification of Gold Fields production is underpinned by its world-class mining projects in Peru, Ghana and the Philippines, amongst others. I am confident that these will give rise to Gold Fields next generation of mines within the next two to three years. My confidence in the future of the company as a global leader in the industry is also rooted in its worldwide portfolio of quality greenfields and near-mine exploration projects – as well as its global Mineral Resources and Mineral Reserves position (p119), which has few equals. Furthermore, Gold Fields future will be sustained by the excellence of its management team and its continued investment in top talent.

Gold price and share performance

The past year has seen gold retain its position as a 'safe haven' investment in the face of continued global political and economic instability. Despite significant volatility, gold prices ended the year approximately 11% higher in US dollar terms (34% in Rand terms), whilst underlying fundamentals appear to indicate gold's upside potential is greater than its downside risk. These fundamentals include strong investment demand, as well as continued economic growth in the emerging markets.

Such growth is being led by China and India, where rising disposable incomes have supported some of their citizens' natural affinity for gold jewellery and gold as an investment. On the supply side, relatively stagnant global gold production over the past decade, as well as an ongoing decline in the discovery of large deposits, has also helped underpin the price of gold.

In this context, Gold Fields share price performance has been relatively disappointing. Last year, the share price rose by only 3% to R124.60 by year-end. In US Dollar terms, the share price declined by 10% to US$16.28. At the point of writing, the share price continues to languish at these levels. I do not believe this reflects the underlying value and growth potential of the company.

Nonetheless, there is some consolation for shareholders. In 2011, Gold Fields paid a total dividend of R3.30 (US$0.46) a share, at a yield of 2.6% – the highest amongst the leading global gold companies.

Our financial results for 2011 demonstrate that our management team can extract strong economic value from our mines, while also investing in the future growth of the company. Highlights include a 50% rise in our free cash flow to R5.5 billion (US$752 million) and a Group NCE (Notional Cash Expenditure) margin of 25% – in line with our long-term target, which we have achieved significantly earlier than anticipated. This demonstrates the ability of Gold Fields management team to leverage the higher gold price to improve earnings and cash flow. I am confident that this solid financial performance, the continued optimisation of Gold Fields existing operations and the realisation of its future growth portfolio will deliver lasting returns to shareholders.

Resource Nationalism

Over recent years, the calls for greater state intervention in the resources sector have grown louder and governments around the world are responding by raising taxes and tightening regulations. Over the past year, Gold Fields has had to deal with higher taxes – or is facing the prospect of hardening tax regimes – in many of the jurisdictions in which it operates.

Dr Mamphela Ramphele, Chair

To a great degree, this dynamic has been driven by the fairly rapid escalation of metal and mineral prices over the past decade. I believe, however, it is also rooted in the common misconception that these prices feed straight through to the bottom line – to instantaneously enrich shareholders. What is often forgotten is the capital intensive, high-risk nature of the mining industry. In this context, capital providers need to be rewarded with a significant return on their investment, which is often committed over decades rather than years. Similarly, gold prices do not rise in isolation from other commodity prices, which make up many of our input costs, thus partially reducing the margin that the higher gold price brings about.

I firmly believe that the role of companies is first and foremost to create economic value with all the benefits that this can bring. In 2011, 58% of Gold Fields turnover of US$5.8 billion could be considered to contribute economically to the societies in which it operates. The company last year procured US$1,730 million in goods and services, spent over US$1,100 million on salaries and benefits for its 46,378 employees, paid governments US$478 million in taxes and royalties, and spent US$54 million on Socio-Economic Development initiatives.

Gold Fields creates significant economic value not just for employees, but also for its local communities and host governments through royalties, taxes and social upliftment programmes.

This reflects the understanding that mineral rights are, justifiably, viewed as part of each country's national patrimony. In this context, Gold Fields not only has a duty to its investors, but also bears significant responsibilities in terms of society more broadly. I believe that, by and large, it fulfils these responsibilities successfully.

Leadership in sustainable gold mining

Gold Fields is already addressing the challenges of resource nationalism through its commitment to sustainable gold mining. This means achieving durable production and growth, whilst contributing to nationally appropriate sustainable development wherever it operates. Our ability to bring our large, long-life Mineral Reserve base to account depends on a continued and demonstrable commitment to sustainable development, which underpins our social licence to operate with respect to our host governments and local communities.

Gold Fields has made important advances on this journey. This is illustrated by the fact that in 2011 we were the top-ranked South African mining company on the prestigious Dow Jones Sustainability Index (p27). This reflects the significant progress we have made in terms of environmental management, our relationships with both neighbouring and labour-sending communities, our commitment to sound and transparent corporate governance, as well as long-term economic value-creation where our assets are invested.

Challenges remain, however. The most pressing one is the safety of our workforce and I am dismayed to report that we had 20 fatalities at our mines in 2011 – all but one of them at our South African operations.

This is particularly disappointing as we had made significant progress over the past few years in terms of engineering-out risks, entrenching rigid health and safety standards, and nurturing a safe mining culture.

In response to these tragedies, the management team has strengthened its commitment to our most important Value: "If we cannot mine safely, we will not mine". We are determined to move beyond the stigma of underground gold mining as an inherently dangerous activity by improving safety performance and consistently reducing the risk of fatalities. We are complementing existing safety measures with programmes that enhance workforce competence through capacity building, as well as our proactive health, housing and welfare initiatives that focus on employee wellbeing 24 hours a day. Finally, we have established a sound relationship with both the government and the trade unions, who are the key stakeholders in our efforts.

A further challenge is the skills shortage confronting the industry and its ability to attract, retain and develop top talent. I am pleased to report that Gold Fields is making significant progress in this area through the launch of a wide-ranging and ambitious Group People Strategy, never embarked upon to such an extent before, thus reflecting that people are our business (p128).

This strategy is aligned with the company's wider strategic goals and will augment Gold Fields existing skills development initiatives – led in South Africa by the Gold Fields Academy – through which thousands of our employees receive training each year. The Academy also provides thousands of workers and community members with skills ranging from basic literacy to artisanship. These are skills they can use after leaving the mining industry, allowing them to contribute elsewhere in the economy. We are also continuing to invest in ongoing partnerships with tertiary mining and technical institutions in all our host countries. In particular, we are leading the mining sector in terms of our investment and commitment to tertiary mining education in South Africa.

Integrated Reporting

As I have broadly outlined above, Gold Fields strategy rests on three pillars: Optimising our operations; Growing Gold Fields; and Securing our future. This strategy is underpinned by a sound corporate governance framework, commitment to proficient risk management and effective engagement with our stakeholders.

I believe that this Integrated Annual Review provides a transparent and systematic account of our progress in all these areas. This is in line with the aim of the King III Code of Corporate Governance, to which we fully subscribe, to provide shareholders and other stakeholders with a full picture of the company and its impact on society.

Appreciation

I would also like to express my sincere appreciation to my fellow directors for the enthusiasm with which they have supported me, as well as their energetic and valuable contributions to Board deliberations. We owe a special thanks to Chris von Christierson, who retired from the Board in May 2011, after serving with dedication for 12 years.

Finally, I would like to thank our Chief Executive Officer, Nick Holland, his management team and all Gold Fields employees for their continued and unwavering commitment to the company and its Values.

Dr Mamphela Ramphele

Chair

1.2 Q&A with the Chief Executive Officer

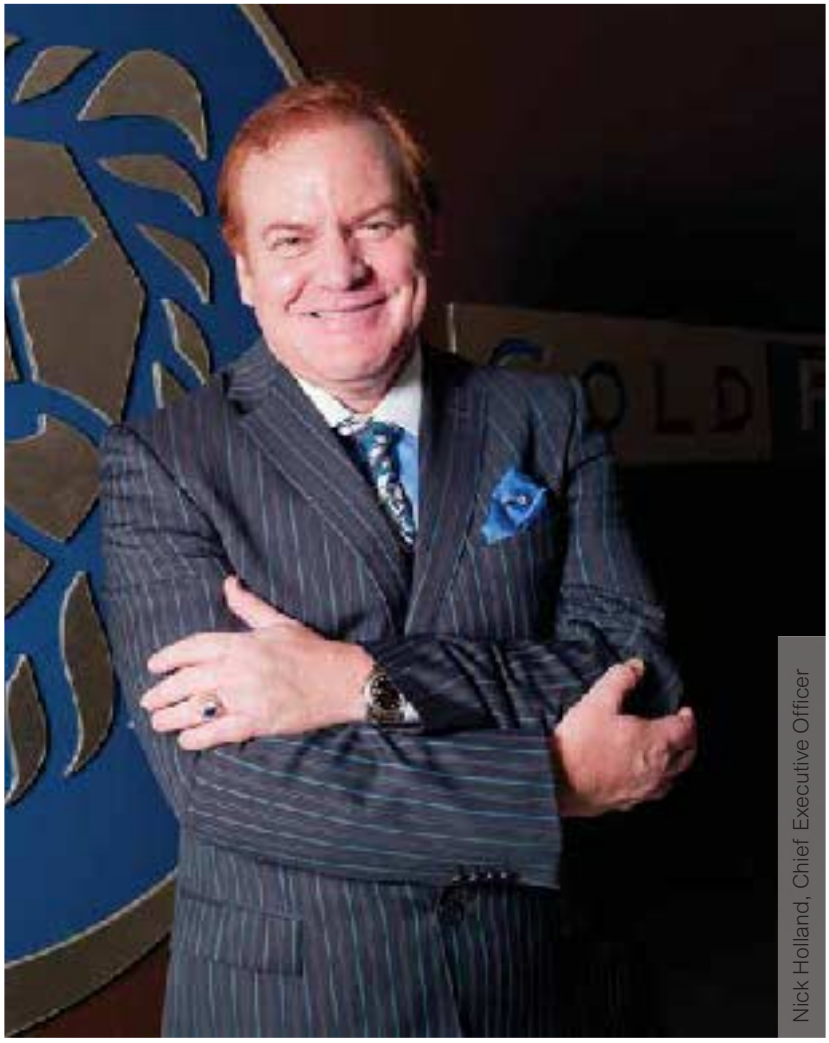
Strategy

Q. What does Gold Fields Vision of 'leadership in sustainable gold mining' mean in practice – and why do you place such emphasis on sustainable development?

A. This is very much about effective risk management and 'business sustainability'. In practice, this means developing and implementing fully integrated strategies at operational-, regional- and Group-level to ensure we are identifying the risks and opportunities facing our business – and that we are managing these in a way that supports our long-term profitability and ensures the long-term sustainability of our business. This includes the commercial, technical, environmental, economic, social and political dynamics facing Gold Fields – and the interrelationships between them.

This is most apparent in three key areas:

- Our pursuit of 'Zero Harm' at our operations is not only the right thing to do, it also minimises the loss of production caused by safety related stoppages – which directly impact on profitability
- Our efforts to cut energy consumption and develop alternative energy sources not only reduce our costs, but also ensure we are able to thrive in a carbon-regulated future
- The delivery of shared mutual benefits to local communities and host governments is not purely philanthropic. It also directly supports our social licence to operate, our ability to demonstrate our value to host governments and our ability to enter into highly prospective and more challenging growth environments – whether in Peru, the Philippines or elsewhere



Nick Holland, Chief Executive Officer

We are able to 'operationalise' this approach by integrating broad sustainability measures into the balanced score cards of key decision-makers within our organisation. This means that aswell as pursuing shorter-term goals around production and cost performance, decisions are also being made on the basis of our longer-term, 'holistic' performance.

In 2011, the practical application of this philosophy can already be seen in our production practices. This includes the shift towards owner-mining, which supports the longer-term sustainability of the business. It can also be seen in our shift from 12-month production planning to production planning of 24-months and beyond. This is with the aim of balancing longer-term capital investment and mine development against our shorter-term pursuit of higher NCE margins.

We need to think this way, because ours is a long-term business. In 2012, we mark our 125th anniversary – and we fully intend to be delivering value both to our shareholders and to our broader stakeholders well into the future.

Q. You have set an ambitious target of 5 million gold equivalent ounces in production or in development by 2015 – are you on track?

A. We are broadly on-track to achieving this important Goal – despite some short-term challenges.

Although production from our mature operations in South Africa decreased in 2011, output for the Group remained broadly stable and at historical levels. We can build on this to achieve our long-term growth objectives.

A significant step in this direction was the buy-out of minority shareholders in Ghana and Peru during the second half of 2011 (p118), which also contributed to our strategic aim of achieving 100% ownership of the assets in our portfolio. By raising our stake in Gold Fields La Cima from 80.7% to 98.5% and in our Tarkwa and Damang mines from 70% to 90% at a combined cost of US$1.05 billion, we gained around 250,000 production ounces and over 3 million ounces in long-life, low-cost reserves.

We have also made good progress in terms of our resource development and feasibility projects, which will underpin our ability to grow and geographically diversify our production, as well as our Mineral Resources and Mineral Reserves. The most advanced are our Damang Super Pit, Chucapaca and Far Southeast projects in Ghana, Peru and the Philippines respectively.

At Damang we have generated a 10 million ounce resource, most of which relates to the Super Pit, which on its own has a 7.4 million ounce Mineral Resource and 2.5 million ounce Mineral Reserve. This will help to underpin the doubling of the mine's production.

Plans are in place to carry out a pre-feasibility study for the project in 2012, notwithstanding the potential commercial impacts of the hardening fiscal regime in Ghana.

At Chucapaca we have increased the Indicated and Inferred Mineral Resource by 35% to 7.6 million ounces and plan to deliver the first Mineral Reserve in 2012, following the feasibility study for the project. We also expect to make a development decision before year-end.

In September 2011 we made our second down-payment of US$66 million at the Far Southeast project in the Philippines and in March 2012 a third payment of US$110 million, reflecting positive proof of concept and due diligence drilling results – as well as growing confidence in our ability to develop a new, world-class mine at the site. We now have a 40% interest in the project and under our option agreement with Lepanto and Liberty Express Assets a final payment of US$110 million would raise our interest to 60%.

Figure 1.1: Achieving our Vision

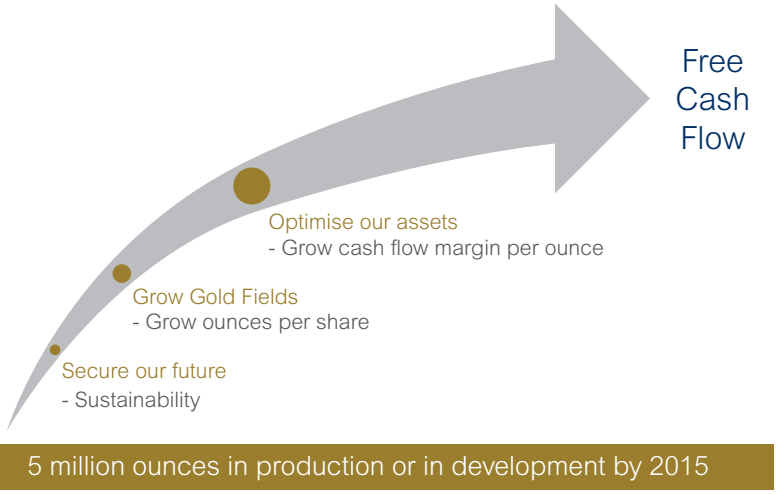


Figure 1.2: Gold Fields strategy

Optimise our assets	- 25% NCE margin target for existing assets - Reserve replacement and growth - Business Process Re-engineering
Grow Gold Fields	- 5Moz in production or in development by 2015 - Increase geographical diversification - No M&A Heroics – opportunistic approach - Organic growth and exploration - Growth in production per share and NCE margin per ounce
Secure our future	- If we cannot mine safely, we will not mine - Sustainable development integrated into the business model - Focus on people

The final payment is dependent on our ability to procure a Financial or Technical Assistance Agreement (FTAA), which allows foreigners to own a majority in a local project. We plan to deliver a maiden Mineral Resource model in 2012 and commence a pre-feasibility study.

We are also extending our extensive drill programme at the Arctic Platinum Project in Finland as part of a pre-feasibility study to improve its financial profile. Meanwhile, at Yanfolila in Mali, we are carrying out additional drilling to advance to provide sufficient critical mass to progress the project beyond the advanced drilling stage.

Should these projects be successful, they should deliver sufficient new ounces in production and development to significantly outweigh likely production shortfalls at our South African legacy operations.

Q. What are the big opportunities for the future?

A. We believe innovation and technology will provide opportunities for the exploitation of our very substantial Mineral Resources in South Africa. The long-term sustainability of the South Africa region has often been questioned, due to concerns that the deep-level nature of our underground deposits will – over time – restrict our ability to bring these ounces into production in a safe and profitable way.

We are already demonstrating the questionable nature of this assumption at South Deep. Here, the application of advanced mining techniques and the implementation of mechanised underground mining is helping ensure its substantial Mineral Resources and Mineral Reserves (which account for 35% and 45% of the Group total respectively) will be brought to account at minimal risk to our employees – and at a cost that will help underpin the sustainability of the South Africa region as a whole.

Case study

Why does Gold Fields use NCE to measure its cost performance?

Notional cash expenditure (NCE) is an 'all-in' performance measure developed by Gold Fields. It is aimed at introducing greater transparency around the all-in costs of producing an ounce of gold. This is particularly important for both producers and investors in a context of ever-escalating input costs. NCE includes:

- All operating costs
- All capital expenditure (e.g. growth and sustaining capital expenditure)
- All near-mine exploration expenditure

Gold Fields believes this provides a more accurate measure than the commonly used 'total cash costs'. In part, this is due to NCE's explicit inclusion of 'growth capital'. In doing so, NCE recognises the bulk of capital invested in new production is largely aimed at replenishing the industry's declining output – rather than delivering growth per se. The objective is to provide the all-in cost. NCE per ounce influences how much free cash flow is available to pay taxes, interest, greenfields exploration and dividends.

By using the total cash cost measure, many within the industry are claiming high operating profit margins that are not, in reality, supported by underlying cash flow. This may have had an impact on the number of external stakeholders currently demanding a greater share of (apparently) higher operating profit margins in a number of mining jurisdictions (p155-156).

The well-established nature of the infrastructure at KDC – as well as its differing geology – means we cannot apply the same techniques as applied at South Deep. Nonetheless, we are in the process of researching advanced, proprietary technology that could one day transform the future of these mines, by allowing efficient, low-cost mining at extreme depths and in extreme conditions, without exposing our employees to safety or health risks.

Although this research is at a relatively early stage, we are hopeful that in the longer-term this technology – as well as technology being developed in the open market – will help breathe new life into KDC. This would have strategic implications for the Group in terms of leveraging the mine's very large Mineral Resources (31% of the Group total) – and help secure the future of the region.

Operational performance

Q. How would you evaluate Gold Fields business performance in 2011?

A. In terms of production, our performance has been broadly satisfactory. During 2011, total attributable production remained steady at 3.5 million gold equivalent ounces. This reflected higher production at our international regions, which offset lower output at our mature Beatrix and KDC mines, as well as stable production levels at South Deep.

On a more positive note, we marked a major milestone in our efforts to advance the geographical diversification of our production, 49% of which came from South Africa (2010: 53%) and 51% from our Australasia, South America and West Africa regions (2010: 47%).

This means that the majority of our production ounces now come from outside of South Africa.

The picture has been more positive in terms of our financials. NCE margin – which increased from 16% (or US$201/oz) to 25% (or US$396/oz) – is now aligned with our long-term NCE target. Although this was largely driven by higher gold prices, it also reflected the collective impact of our wide range of cost-saving initiatives, including R840 million (US$116 million) in South Africa and US$43 million in Ghana saved through Business Process Re-engineering during the course of 2011.

This has helped contribute to a 50% increase in free cash flow from our operations to R5.5 billion (US$752 million) last year.

The fact that we are managing to contain our costs, means we are realising the higher gold price in our bottom line. This is illustrated by the fact that operating profits rose by 46% to R21.1 billion (US$2.9 billion).

We have also achieved a degree of consolidation in terms of our operations. This includes, for example, our shift towards owner mining and maintenance at our Damang mine in Ghana and, in part, at our mines in Australia. This will help us reap greater rewards from our mines on an ongoing basis.

Furthermore, our minority buy-out in Peru has given us almost total ownership of the highly profitable Cerro Corona mine – with attendant benefits in terms of additional attributable production, Mineral Resources, Mineral Reserves and future growth potential.

In Ghana, our purchase of IAMGOLD's indirect minority stake in Damang and Tarkwa (which has taken our interest to 90%) also means we are well positioned to benefit from the significant resource and reserve position, at Damang in particular. The buy-out has already secured us an extra 280,000 reserve ounces, as West Africa's Mineral Reserves increased by 21% to 13.7 million ounces during 2011.

As in 2010, 2011 saw a significant amount of work take place to improve the sustainability of Gold Fields. These efforts are starting to bear fruit – not only in terms of supporting our sustainability performance and influencing new project development – but also in terms of external recognition.

In particular, we believe that our 4th position amongst mining companies in the global Dow Jones Sustainability Index shows we are on the right track. This is particularly the case given that it is the first time we have participated in the index – and that our score made us the strongest South Africa performer in the mining sector. We intend to build on this.

Q. You say "if we cannot mine safely, we will not mine". How realistic is this?

A. We have made it our objective to achieve 'Zero Harm' and mitigate the risks associated with deep underground mining at our South African operations.

We believe that with the right leadership, safety culture, procedures and engineering controls, deep underground mining can be carried out in a way that does not put our employees at risk.

That is not to say the task is not challenging – or that we have it right yet. As the 20 fatalities experienced by Gold Fields in 2011 show, this is a fight that requires constant diligence – with no room for complacency. A total of 17 of these fatalities took place in the first seven months of 2011 – prompting us to accelerate a widespread programme to engineer-out risks, including installing in-stope bolting in stope panels, as well as initiatives around behaviour-change, safety compliance and leadership. This had a real effect, with a marked decline in fatalities in the second half of the year.

Our promise that "if we cannot mine safely, we will not mine" is integral to our safety culture and is acted upon on a daily basis. Our 'Stop, Think, Fix, Verify and Continue' approach encourages employees across the Group to halt work wherever there is a risk to health or safety and to examine if there are alternative, safer ways to get gold out of the ground. If there is no safe alternative, we will leave the ounces in the ground rather than put our teams at risk. Over the last three years, we have written-off about 2 million ounces of high-grade reserves on this basis, though they still sit within our resource inventory. Despite the economic cost of this approach – as well as our considerable expenditure on engineering-out risks – we believe this is not only the right thing to do, but also the realistic thing to do.

In 2011, we had a total of 75, mostly shaft-specific, safety stoppages in South Africa – some of them self-imposed. This resulted in the loss of 52,500 ounces of production, demonstrating the economic impact of potentially avoidable safety incidents. Similarly, failure to demonstrate to our stakeholders – including our employees, organised labour and government – how serious we are about safety, could have strategic implications in terms of our legal and social licence to operate. As a result, we have proactively engaged with government and the trade unions, meeting them in tri-lateral forums on a regular basis to find common solutions to safety issues. This approach has been far more productive than the more adversarial approach many in the industry have taken in response to the government's 'no-nonsense' attitude towards safety in the mining sector.

Figure 1.3: Economic contributions by Gold Fields

Category (US$ million)	2011	2010	2009	2008
Operating costs (incl. procurement and contractors)	1,851	1,924	1,479	1,395
Salaries	1,101	1,027	784	708
Payment to capital providers	282	243	181	230
Payments to government	478	312	249	159
Socio-economic development (SED) spend[1]	54	67	11	14
Total economic contribution	3,766	3,573	2,704	2,506

[1] See p143 for new SED definition for 2010 and 2011

Q. Gold Fields places a lot of emphasis on 'wellness'. What does this mean in practice?

A. Issues around occupational health – and health in general – in the mining industry have rightly been subject to close scrutiny for a long time. Occupational health is particularly important in our South Africa region due to the deep, labour-intensive nature of our mines there. However, we feel that as an industry, we have focused on a narrow range of measures that – although very important in their own right – only reveal part of the picture in relation to employee wellbeing and productivity.

This is the rationale behind our '24 Hours in the Life of a Gold Fields Employee' programme – which deliberately focuses on employees' holistic wellbeing, both at work and outside it (p140). In part, this is driven by a natural concern for the welfare of those who work for us – often in demanding conditions. It is also driven by concerns that individuals' safety performance can sometimes be undermined by their broader lifestyle.

The 24 Hours programme covers employees' accommodation, nutrition, sleep, psycho-emotional wellbeing and recreation. It is integrated with our broader health and safety initiatives, in recognition of the holistic nature of employee wellbeing – and the interrelationships between, for example, lifestyle, health, safety and disease.

Our holistic approach does not mean we are taking our eye off the ball in terms of more traditional occupational health management measures or the prevention and mitigation of diseases.

In 2011, we progressed our extensive programme to physically 'engineer-out' occupational health risks and to help us reduce noise and dust levels in line with South Africa's Mine Health and Safety Council 2013 milestones (p137). Measures implemented last year focused on minimising the noise from our mining equipment to reduce sound pressure levels below the strict targets that will be applied from 2013 onwards. In terms of reducing dust emissions, we are implementing the use of foggers to trap dust particles, footwall treatments to bind dust and extensive training among staff on the latest protection equipment, amongst other measures.

HIV/AIDS remains a particularly serious issue in South Africa – and we continue to apply a comprehensive response in terms of education and awareness-raising, Voluntary Counselling and Testing, the provision of free Highly Active Anti-Retroviral Treatment and holistic support through our 24 Hours programme. As much as possible, we address HIV/AIDS through our mainstream medical services to avoid stigmatisation – and to ensure it is managed in the context of a person's overall wellbeing, health and lifestyle.

Q. Gold Fields growth strategy appears to be taking the company into new locations that are seen as 'higher risk'. What is being done to manage these risks?

A. The success of our new growth projects – which are by their nature capital intensive and long-term – is often highly dependent on our social and political licence to operate.

Many of the new growth environments present relatively challenging socio-economic, environmental and political contexts. Nonetheless, we go where the gold is.

In many cases, communities are wary of the entry of large-scale gold mining operators, due to a lack of understanding around likely impacts or negative experiences from the past. Similarly, communities can harbour unrealistic expectations about the role mining can play in alleviating poverty, providing employment or delivering public services.

As a result, we take great care to minimise any negative impacts, demonstrate real contributions to local development, manage expectations, and maintain frank and respectful dialogue – at the earliest stages of exploration. Failure to do so at the start can have serious implications for future project development – and it is very hard to 'undo' past mistakes in this context.

This is not enough on its own. We must ensure that it is in the interest of local communities and host governments for our operations to run smoothly, efficiently and without disruption. As a result, we structure projects in a way that will benefit local communities through social investment, employment creation, capacity building and local procurement.

The success of this approach can be seen at our Cerro Corona mine in Peru, where we have helped build significant social, economic and environmental 'capital' since we acquired it in 2003 and commissioned it in 2008.

This is part of an integrated, long-term development approach, which includes, for example, the enhancement of local dairy herds, active support for local enterprises and extensive re-forestation (p145). The results have been impressive – contributing to a thriving community in an area previously characterised by severe under-development and social unrest, which is still affecting other mining firms operating in Peru.

Many of the lessons learnt at Cerro Corona are being applied at the Far Southeast project in the Philippines. The Far Southeast Community Sustainable Development team is also using an active engagement approach – as well as innovative and comprehensive stakeholder identification, interaction and monitoring – to secure a firm social licence. This includes the Free, Prior and Informed Consent of local indigenous people in the affected area (p106-107).

External environment

Q. To what extent is Gold Fields being affected by resource nationalism?

A. We face resource nationalism to a varying degree at all our operating locations. This seems to be largely due to the significant income gaps that exist in many resource-rich countries as well as high commodity prices – and the (often misguided) belief that these are generating 'excessive' profits for mining companies.

In Ghana, where we are the largest single tax contributor, we have faced a rise in royalty rates from 3% to 5% as well as the continuation of the National Stabilisation Levy for 2011. In addition, Ghana's new tax regime will see the mining sector subject to a 10% increase in Corporate Income Tax, a 10% Windfall Profit Tax and a significant hardening of the capital allowance regime.

We remain concerned about the impact of these taxes on the commercial viability of our proposed Damang Super Pit project – which would otherwise secure the future of a mine previously marked for closure, as well as create jobs and boost our public revenue contributions.

In Peru, the new government has raised royalties to between 1% and 12% of operating profits (previously 1% to 3% of sales) and imposed a special mining levy of between 2% and 8.4% on net profits. Although this is relatively modest compared to some previous projections – and will help pay for poverty reduction and infrastructure development – we would be wary of any further increases.

The South African government has essentially taken nationalisation off the table, but is looking at other tax-based measures to extract more funds from the sector. Any further government imposts – for example in the form of a resource rent tax – would do much to undermine the South African mining industry and its ability to generate employment.

Furthermore, there is also no guarantee that higher taxes in nominal terms will lead to a greater income from the mining industry for the state as they tend to act as a deterrent to investment, particularly from the foreign investor community.

The ability of any mining company to make sustained contributions to its local communities and host countries is almost completely dependent on its ongoing profitability. In the absence of further increases in commodity prices, higher taxes and more stringent regulations will limit the ability of the sector to make such contributions. But we also believe that if we – and the mining sector more broadly – could better measure and communicate the very real economic benefits we deliver to our host societies and governments, then this fact would be better recognised.

Q. Energy prices, carbon management and climate change are increasingly cited as key business priorities for the mining sector. How is Gold Fields addressing these issues?

A. Higher energy costs are already having a direct impact on our operations – so this is far from an abstract issue for us. It is a particularly pressing issue in South Africa, due to challenges around national power infrastructure and sharp increases in national electricity costs. This is one of the reasons why I set a clear target to continue reducing our electricity consumption in South Africa. From our 2007 baseline to the end of 2011 we have already achieved a 17% reduction. The emphasis on reducing our electricity consumption will remain, despite the welcome decision by South Africa's energy regulator to reduce average tariff increases from 26% to 16%. We hope this welcome reduction in tariff increases will set the tone for future price changes.

Improved energy efficiency not only reduces our costs – it also reduces our carbon emissions. This is clearly positive from an environmental point of view, but also has the potential to deliver material benefits to Gold Fields in the future. In 2011, the Australian government introduced carbon taxes and the South African government announced in the 2012 Budget that it will do so beginning in 2013 (p68).

We are not in favour of carbon taxes as they are a headline cost that is likely to increase our cut-off grade and sterilise our Mineral Reserves. In addition we are already spending considerable sums on reducing our carbon footprint. We are doubtful that carbon taxes will result in the environmental benefits that governments are seeking, as we question whether revenue from carbon taxes will be ring-fenced to fund nationwide carbon adaptation and mitigation strategies.

Reflecting the close link between energy consumption and carbon emissions, we are in the process of implementing a fully integrated, Group-level Energy and Carbon Strategy and management plan. We are also embedding our new Carbon Management Policy, under which each of our regions has been tasked with developing tailored strategies and management plans to address carbon management and reporting, the mitigation of carbon pricing risks and adaptation to potential climate change-related risks (p67).

Furthermore, we have integrated carbon pricing into financial planning at our mines and within our growth pipeline to ensure all our business decisions contribute to future sustainability. This will be embedded for the first time into our 2013 budget process. In addition, we are pursuing a range of specific projects to generate Certified Emission Reductions (CERs) that will either generate additional cash or be used to help off-set some of our own carbon emissions (p68).

Q. What are the key dynamics behind the gold price – and what predictions do you have for the future?

A. Between 2001 and the end of 2011, the price of gold rose by about 650%. It is understandable why many are predicting a period of consolidation. We believe changes in demand are the biggest determinant of the gold price in the short- to medium-term – more so than supply. In 2011, demand continued to be driven by China and India – both in terms of gold as an investment and gold jewellery. Last year, these two countries accounted for 42% of demand for gold – compared to 39% in 2010 and 29% in 2009. We believe this trend is likely to continue in the medium- to long-term.

Furthermore, in 2011 we saw central banks accelerate their purchases of gold, buying 440 tonnes – around five times more than in 2010. There is clearly appetite amongst the central banks to hold and accumulate gold. Currently, the vast majority of gold reserves are held in the developed world – meaning there is also significant scope for central banks in developing economies to expand their gold reserves as they grow.

Exchange-Traded Funds (ETFs) are another major source of demand. Having started from nothing in 2004, ETFs are now worth around US$120 billion, accounting for around 10% of total investment demand for gold in 2011. This still represents only around 1% of global funds under management – again meaning there is great scope for further expansion in the longer-term.

Given the four- to five-fold increase in the price of gold over the last decade, it might be expected that supply would be booming. But, over the past 10 years, the compound annual growth in gold production has been 1% per year – despite a 4% increase in production in 2011. This is because the size of gold discoveries has fallen significantly. Analysis of the last 30 years shows that discoveries of 10 million ounce deposits – which once made up the majority of new finds – are becoming increasingly rare.

Over the same period, grade levels have also declined significantly. Gold is not only getting harder to find, it is also getting more expensive to find. Again, over the last 30 years, the cost of discovering an ounce of gold has risen from around US$10 to an estimated US$75. Gold Fields cost of Reserve discovery through exploration has averaged around US$33/oz over the past 10 years.

In addition, the gold mining industry is facing rising costs, led by higher energy prices, sharp wage increases for scarce skills and ever-rising prices for input materials. Despite outwards appearances, the sector is not making as much money as the gold price would suggest. This means there is a fundamental dynamic – rising global demand and moribund global supply – that could help underpin future gold prices. Furthermore, gold has regained its status as an asset class, the world monetary base is likely to continue to significantly increase (with commensurate effects in terms of future inflation) and uncertainty around a range of major global economies shows little sign of abating. In this context, we believe the fundamentals for gold remain positive.

Nick Holland

Chief Executive Officer

1.3 Delivering on our objectives for 2011 and 2012

Figure 1.4: Progress on 2011 objectives

2011 objectives		2011 performance	Progress
1	Achieve safe and stable production at the KDC and Beatrix mines	Production at KDC decreased by 9% from 1.2 million ounces to 1.1 million ounces. There were 13 fatalities at KDC (2010: 11), whilst the Lost Time Injury Frequency Rate increased to 7.95 (2010: 6.31) (p82). Both production and safety levels improved in the second half of the year. Production at Beatrix decreased by 8% from 377,000 ounces to 347,000 ounces. There were five fatalities at Beatrix (2010: five), whilst the LTIFR fell to 2.95 (2010: 3.31) (p84).	
2	Continue the build-up at South Deep to achieve a safe production run rate of 750,000 ounces of gold by the end of 2014	There was one fatality at South Deep. The operation achieved two million fatality free shifts by January 2012. Production at South Deep remained steady at 273,000 ounces (2010: 274,000 ounces) (p86-87). Challenges around the slow build-up of de-stress cut mining activities largely related to poor fleet availability and logistics. These are being urgently addressed. We have adjusted our production goal for South Deep to a 700,000 ounce annual run-rate by the end of 2015.	
3	Continue business re-engineering across the Group to achieve a sustainable free cash flow and an NCE margin of 20% at each mine in the short-term and 25% in the medium- to long-term at sustainable gold prices	Cost controls were successfully implemented across the Group, particularly in South Africa where cost increases in 2011 were limited to 3% despite high electricity tariff hikes. This contributed to an NCE margin of 25% for the Group. Each mine achieved the following NCE margin: • Agnew: 32% (p76-77) • St Ives: 19% (p74-75) • Beatrix: 25% (p84-85) • KDC: 23% (p82-83) • Cerro Corona: 60% (p90-91) • Damang: 33% (p96-97) • Tarkwa: 42% (p94-95)	
4	Maintain and increase our production profile through major near-mine projects	In 2011, we spent around US$75 million (2010: US$57 million) on near-mine exploration. This resulted in the significant advancement of near-mine exploration at Agnew, St Ives and Damang. It also contributed to a higher Mineral Reserve position at Damang and Tarkwa, as well as a stable Mineral Reserve inventory (post-depletion) at our two Australian mines.	
5	Increase our production profile through major resource development and feasibility projects	In 2011, we achieved the following milestones: • Arctic Platinum Project, Finland: Successful bulk-testing of Platsol® technology on our deposits – and scope for additional resource positions (p112-113) • Chucapaca, Peru: A 35% increase in Mineral Resources to 7.6 million gold equivalent ounces – with a potential development decision in late 2012 (p113-114) • Damang Super Pit, Ghana: Completion of the second phase of resource definition drilling, leading to an increase in the Mineral Reserves for the Super Pit from 1.1 million ounces to 2.5 million ounces (p114-115), as well as a 7.4 million ounce Mineral Resource position • Far Southeast, Philippines: A third down-payment of US$110 million on our 60% option – informed by extensive proof-of-concept and due diligence drilling and the identification of extensions at depth. Since year-end we have made a further US$110 million payment and vested 40% in the project (p116-118)	
6	Increase our production profile through greenfields exploration	In 2011, we spent a total of US$115 million (2010: US$90 million) on greenfields exploration, which led to further progress being made at the following targets: • Argentina (Taguas, p109) • Australia (East Lachlan and Delamarian, p110) • Canada (Woodjam, p110) • Chile (Salares Norte, p111) • Ghana (Asheba, p111) • Guinea (Telikan, p111) • Kyrgyzstan (Talas, p112) • Mali (Yanfolila, p111)	

Figure 1.4: Progress on 2011 objectives

2011 objectives		2011 performance	Progress
7	Implement a 'sustainable gold' programme that addresses both the concerns of stakeholders, as well as emerging business and sustainable development risks in our future growth environments	Highlights in 2011 include the following: • Development of an integrated Carbon and Energy Strategy and management plan (p66-67) • Integration of carbon pricing into our financial planning (p67-68) • Generation of Certified Emissions Reductions (CERs) through our Beatrix Methane Project (p68) • Introduction of our enhanced Code of Ethics (p25) • Introduction of our online Sustainable Sourcing Dashboard to assist with risk-based supplier-screening (p156) • Development of integrated, risk-based Sustainable Development strategies and actions across the Group (p24, online) • Publication of our first Integrated Annual Report • A fourth place ranking in the global mining category of the 2011 Dow Jones Sustainability Index (DJSI), making us the leading South African-listed mining company on the DJSI Other achievements are listed on p27.	

Figure 1.5: Objectives for 2012

2012 objective		2012 planning
1	Achieve tangible improvements with respect to all safety and health metrics	We plan to continue working in South Africa towards Zero Harm through: • Engineering-out risk • Compliance with safe operating standards and procedures • Cultural/behavioural change • Improved stakeholder engagement • Our 24 Hour in the Life of a Gold Fields Employee wellness initiative • Working towards the 2013 Mining Industry Occupational Safety and Health (MOSH) targets At our international operations the focus will be on reduced Lost Time Injury Frequency Rates, as well as improvements in occupational health performance – including dust emissions and Noise Induced Hearing Loss.
2	Reduce the rate of production decline at KDC to between 3% and 5% against 2011	We intend to increase surface processing capacity at KDC for waste rock and tailings. In addition, we will maintain our focus on efficiency projects, including: • Improved quality mining volumes through our Full Shaft Potential programme • Increased mechanised flat-end development • Improved safety performance (see above)
3	Regain momentum in the ramping up of production at South Deep	In 2012, we plan to complete construction of: • The Vent Shaft • The plant expansion • The plant tailings backfill infrastructure This will help us to achieve our medium- to longer-term production objectives at South Deep. In the short-term the focus is on: • Improving fleet availability and logistics • Increasing de-stress mining to open up new ore bodies and work spaces • Increasing the number of de-stress projects from six to 12 across all four mining corridors In addition, we are in the process of establishing a dedicated, on-site mechanised mining training centre to support operations at South Deep.

Figure 1.5: Objectives for 2012

	2012 objective	2012 planning
4	Ensure every mine achieves an NCE margin of at least 20%	Business Process Re-engineering (BPR) will continue across all operations. The second phase of the programme in South Africa has identified further cost reductions of R500 million (US$63 million) over the next two years through: • Optimisation of staff structures • Reductions in non-specialised contractors • Lower electricity consumption • Enhanced supply chain management We also plan to maximise the benefits of BPR at our Australian, Peruvian and Ghanaian mines through: • Reductions in energy intensity • Embedding the benefits of owner mining • Improved utilisation and availability of our mining equipment

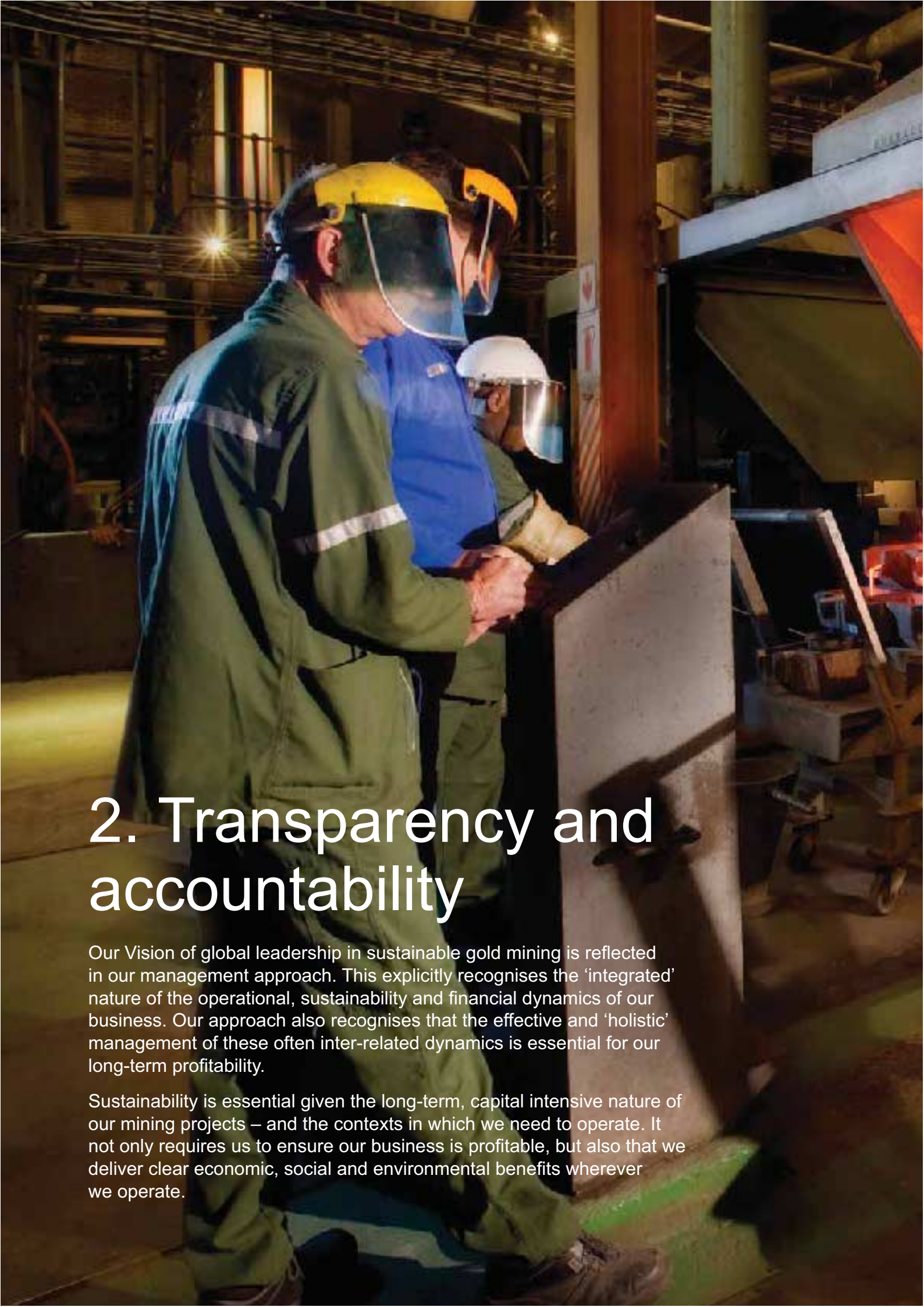
5	Increase momentum on growth projects to achieve our Goal of 5 million ounces in production or development by 2015	Plans include the following:
		• Chucapaca, Peru: Completion of a feasibility study and making a development decision
		• Damang Super Pit, Ghana: Completion of a pre-feasibility study and updating of the Mineral Resource and Mineral Reserve position
		• Far Southeast, Philippines:
		  • Completion of the Financial or Technical Assistance Agreement (FTAA) licencing process
		  • Exercise of our 60% option
		  • Completion of a maiden Mineral Resource position
		  • Commencement of a pre-feasibility study
		• Arctic Platinum Project, Finland: Completion of the drilling programme at Suhanko North and finalisation of the pre-feasibility study
		• Yanfolila, Mali: Completion of our drilling programme, updating of the Mineral Resource position and compilation of a scoping study at Kangare

6	Ensure Gold Fields has the financial capacity to fund growth projects in 2012 and beyond	Plans include the following: • Continued focus on strong operational cash flow generation • The securing of additional long-term funding • Changing of the maturity profile of our long-term debt

Cerro Corona, Peru

Figure 1.5: Objectives for 2012

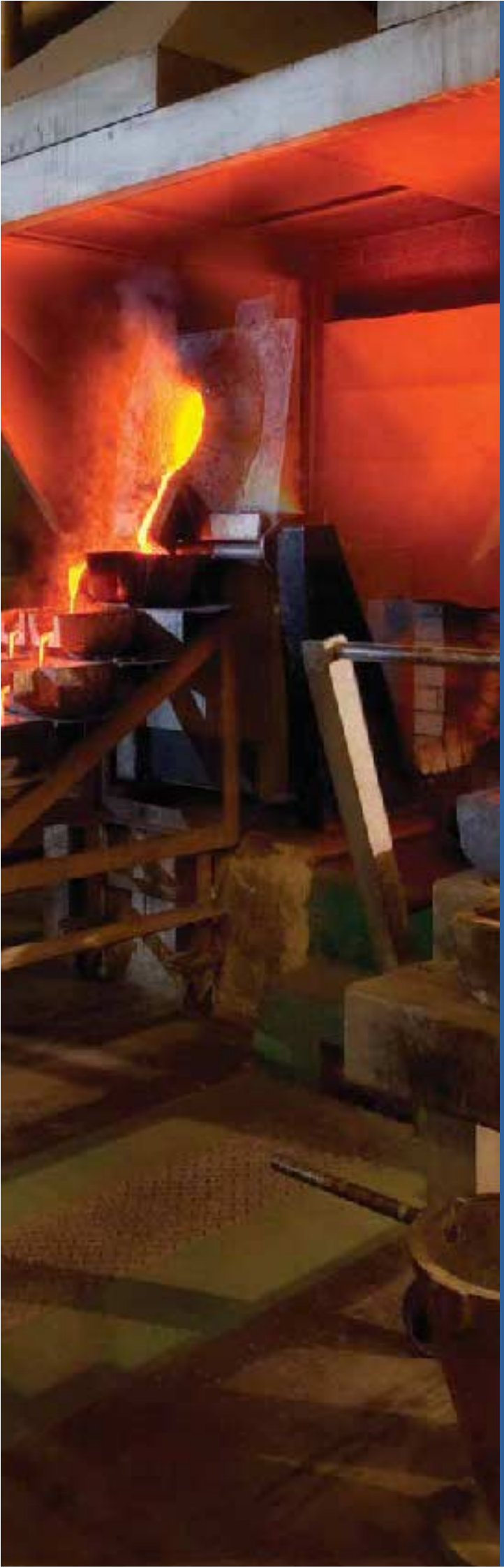
2012 objective		2012 planning
7	Ensure sustainability is fully integrated into the business and is appropriately communicated	We plan to achieve this through: • Ongoing development, implementation and monitoring of Sustainability Development strategies at Group-, region- and project-levels • Incorporation of Sustainable Development measures into the balanced score cards of key decision-makers across the Group • Voluntary adoption of the World Gold Council Conflict-Free Gold Standards • Additional integrated internal and external reporting • A dedicated Sustainable Development communications programme
8	Ensure climate change initiatives, carbon mitigation and adaptation strategies, and energy efficiency initiatives are fully incorporated into the business	The best proxy for carbon emission reduction is a concomitant reduction in energy usage, which will be the focus of our efforts in 2012 and beyond. Specific plans include: • Development of a fully integrated, Group-level Carbon and Energy strategy, including the creation of a Carbon and Energy division • Development, implementation and monitoring of Carbon Management Plans by each region, including the integration of carbon pricing into our financial and operational planning as well as decision makers' balanced score cards • Reduced electricity consumption, particularly at our South African operations, as this accounts for 96% of energy use and is largely responsible for our Scope 2 carbon emissions • Rolling out of carbon emission reduction projects
9	Increase focus on the attraction, retention and development of people and skills	Full implementation of our new People Strategy, including specific focus on: • Enhanced branding • Increased talent development • Establishment of an integrated Human Resources Data Management System • Adoption of more competitive remuneration strategies • Enhanced internal and external skills pipelines • Mobility strategy to improve career path development • Encouragement of more flexible working arrangements and improved work-life balance



2. Transparency and accountability

Our Vision of global leadership in sustainable gold mining is reflected in our management approach. This explicitly recognises the 'integrated' nature of the operational, sustainability and financial dynamics of our business. Our approach also recognises that the effective and 'holistic' management of these often inter-related dynamics is essential for our long-term profitability.

Sustainability is essential given the long-term, capital intensive nature of our mining projects – and the contexts in which we need to operate. It not only requires us to ensure our business is profitable, but also that we deliver clear economic, social and environmental benefits wherever we operate.



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Highlights

Updated Code of Ethics

Joint 1st place

Ernst & Young Excellence in Corporate Reporting 2011 awards (for JSE listed companies)

Launch of Social and Ethics Committee

Pouring gold at KDC, South Africa

2.1 Corporate governance

Our management approach is underpinned by our commitment to sound and robust corporate governance standards, which is essential to operational and strategic success.

2.1.1 Key internal standards and principles

Everything that we do to achieve our Vision of becoming the global leader in sustainable gold mining is informed by our Values. These are applied by our directors, as well as employees at every level of the company.

The Board of Directors takes ultimate responsibility for the company's adherence to sound corporate governance standards and ensures that all business judgements are made with reasonable care, skill and diligence. The Board of Directors' Charter articulates the objectives and responsibilities of the Board (p29). Likewise, each of the Board committees operates in accordance with written terms of reference, which are regularly reviewed by the Board. These are available on our website or, on request, from our secretarial office.

Gold Fields is placing particular emphasis on the ongoing development of its sustainable development systems and structures. This includes the establishment of a unified Sustainable Development Framework based on best practice, as well as our operational requirements. This framework will assist us in our ongoing efforts to secure a long-term competitive advantage by mitigating our risks before they materialise, and by capitalising on opportunities before they pass.

Beatrix, South Africa

The framework, which is governed by an overall Sustainable Development Policy, is made up of the following pillars – each of which is underpinned by a formal corporate policy:

- Carbon and energy management
- Communities and indigenous people
- Environment
- Ethics and corporate governance
- Human rights
- Material stewardship and supply chain management
- Occupational health and safety
- Risk management
- Stakeholder engagement

Effective management in each of these areas is integral to the achievement of our strategic objectives by helping us optimise our operations, grow Gold Fields, and secure our future.

Case study

Using a Group-level methodology to produce regional Sustainable Development Action Plans

Find out more online

The Gold Fields Code of Ethics is informed by our Values and commits the company, its directors and employees to conducting business in an ethical and fair manner, and promoting a socially and environmentally responsible culture.

In 2011, we rolled out an updated Gold Fields Code of Ethics as part of our efforts to maintain consistency with relevant regulations, including:

- National legislation in all of our countries of operation
- The US Sarbanes-Oxley Act
- The US Dodd Frank Act[1]
- The US Foreign Corrupt Practices Act
- South Africa's Consumer Protection Act
- The OECD Convention on Combating Bribery of Foreign Public Officials in International Business Transactions
- The UN Convention on Corruption
- Relevant human rights legislation

The Board's Audit Committee is tasked with ensuring the consistent application of, and adherence to, the new Code of Ethics, which has been translated into seven languages. More information on the Code of Ethics can be found on p25.

www.goldfields.co.za

[1] With implementing rules still being finalised

Case study

A revised Code of Ethics for the Group

In 2011, the Gold Fields legal team revised the Group Code of Ethics (2007). This was carried out to ensure Gold Fields alignment with the recommendations of the King III Report on Corporate Governance – as well as evolving international best practice. This includes, for example:

- US legislation, such as the Sarbanes-Oxley Act (2002), the Dodd-Frank Act (2010) and the Foreign Corrupt Practices Act (FCPA, 1977) – as well as UK legislation, such as the Bribery Act (2010)
- The OECD Convention on Combating Bribery of Foreign Public Officials in International Business Transactions (1997)
- The UN Convention against Corruption (2003)
- South Africa's Prevention and Combating of Corrupt Activities Act (2004)

Furthermore, it was to ensure continued compliance with all relevant national and international legal requirements applicable to Gold Fields.

Under the latest version of the Code, facilitation payments are prohibited, regardless of whether it is legal or deemed to be 'accepted practice' in a particular country or not. Facilitation payments involve the payment of small sums to officials to expedite routine services to which Gold Fields would otherwise be legally entitled. This approach goes beyond FCPA guidelines, which permit facilitation payments of up to US$250.

The updated Code also prohibits contributions to political parties, either in cash or in kind, unless specifically approved by the Gold Fields Board of Directors. This is the first time that the prohibition of facilitation payments and political contributions has been written into Gold Fields policy, and represents a further step in promoting a zero tolerance approach to corruption and bribery.

In addition, other important areas covered in the updated Code include:

- Conflicts of interest
- Confidential information
- Gifts and business courtesies
- Entertainment and hospitality
- Share dealings

The roll-out of the updated Code to employees commenced in 2011 and will be completed this year. New employees will sign the Code and receive related training during induction. Existing employees received the updated Code during the roll-out programme and will receive refresher training as required. Every employee has received a copy of the Code, which has been translated into seven languages. It is also available on the Group's Intranet and website.

Takwa, Ghana

Welding at Agnew, Australia

KDC, South Africa

2.1.2 Key external standards and principles

Our Sustainable Development Framework is guided by the International Council on Mining and Metals (ICMM). This includes adherence to its 10 Principles on sustainable development, as well as the commitment of member companies to transparent public reporting, comprehensive risk management, sound corporate governance and independent, external assurance. Gold Fields also supports the principles and processes of the Extractive Industries Transparency Initiative (EITI) through its membership of the ICMM. We are committed to engaging constructively in countries that are committed to implementing the EITI. The ICMM also has observer status with the Voluntary Principles on Security and Human Rights.

Gold Fields supports the efforts of the World Gold Council, of which we are a member. We are also guided by the United Nations Global Compact, in which we are a participant. This includes implementation of the Ten Principles across our business activities, as well as our annual submission of a Communication on Progress (in the form of this Integrated Annual Review).

Our reporting is guided by the Global Reporting Initiative (GRI) G3.1 Sustainability Reporting Guidelines as well as its associated Mining and Metals Sector Supplement and Reporting Guidance on HIV/AIDS. The GRI is an independent, internationally recognised sustainability reporting body. All of our operations – as well as our exploration division – are certified to the ISO 14001 environmental management system standard. All of our mines are certified to the OHSAS 18001 safety management system standard.

Damang, Ghana

In addition, all of our eligible operations are fully compliant with the requirements of the International Cyanide Management Code. We were the first mining group registered as a signatory to the Code to obtain accreditation for all eligible operations.

Our primary listing on the JSE[1] Limited (JSE) means we are subject to the JSE Listings Requirements. The JSE has included certain aspects of South Africa's King III Report on Corporate Governance (King III) in its Listing Requirements. The Board has adopted the recommendations on good corporate governance contained in the King III Report, as well as the King Code of Governance Principles for South Africa. This includes Principle 9.2, which states that "Sustainability reporting and disclosure should be integrated with the company's financial reporting". The 2010 Integrated Annual Report was the first annual report by Gold Fields to fully comply with this principle and we have again endeavoured to achieve this in the current annual report. Gold Fields is also a participant in the global pilot programme of the International Integrated Reporting Committee.

We have implemented the King III principles and recommendations across Gold Fields, with the exceptions noted in Figure 2.1.

The trading of our shares on the New York Stock Exchange (NYSE) and registration with the United States Securities and Exchange Commission (SEC) means we are subject to relevant NYSE disclosure and corporate governance requirements, as well as the terms of the Sarbanes-Oxley Act 2002. Our secondary listing on NASDAQ Dubai Limited, Euronext in Brussels and the SWX Swiss Exchange means we are subject to each exchange's disclosure requirements.

On 1 May 2011, South Africa's Companies Act 71 of 2008 (as amended) came into force – replacing the Companies Act 61 of 1973. Although already compliant with most of the terms of the Act prior to it coming into force, during 2011 we took additional actions to ensure full conformance, including the establishment of the Social & Ethics Committee (p35).

Furthermore, at our Annual General Meeting in May 2012, we will ask our shareholders to approve our Memorandum of Incorporation (MOI), which will replace the Articles of Association as required by the amended Companies Act. A draft of the salient principles of the MOI can be found in the Notice of the Annual General Meeting, which is attached.

- www.icmm.com
- www.gold.org
- www.unglobalcompact.org
- www.cyanidecode.org
- www.sec.gov
- www.jse.co.za

[1] Johannesburg Stock Exchange

Figure 2.1: Exceptions to the application of King III within Gold Fields

Item No.	King III Principle	King III reference	Gold Fields approach	Reason(s) for applying a different approach
1.	"Employment contracts should not compensate executives for severance because of change of control; however this does not preclude payments for retaining key executives during a period of uncertainty."	2.25.165	The employment contracts of some senior executives, including the CEO and the CFO, have a provision for payments as a result of change of control.	The contracts between Gold Fields and these senior executive employees were entered into before the guiding principle became effective. The Board, guided by the Remuneration and the Nominating and Governance Committees, agreed to maintain the provision in the contracts on the basis that the rules cannot be applied retrospectively.
2.	"…the Chairman and other non-executive directors should not receive share options or other incentive awards geared to share price or corporate performance…"	2.25.154	The non-executive directors were awarded restricted shares with a three year vesting period. The last allocation was approved by shareholders at the AGM held on 4 November 2009 and will vest on 4 November 2012.	Following an appeal by the company to the JSE that the company had already awarded restricted shares to non-executive directors, the JSE ruled that the requirement will only be effective from 1 April 2011 and shall not be applied retrospectively.

2.1.3 Awards and external recognition

During 2011, Gold Fields won the following awards and recognition, amongst others:

- An upgrading of Moody's Baa3 rating outlook for Gold Fields from stable to positive
- First place in the open pit mining category of the 14th National Mining Safety Contest of Peru, a competition organised by the Mining Safety Institute of Peru
- Registration of the Beatrix Methane Project as a Clean Development Mechanism (CDM) project by the United Nations Framework Convention on Climate Change (UNFCCC)
- Fourth place amongst global mining companies in the 2011 Dow Jones Sustainability Index (DJSI), making Gold Fields the highest ranking South African-listed mining company in the DJSI
- Ranked first in the JSE Top 100 Carbon Disclosure Leadership Index (CDLI) by the global Carbon Disclosure Project (CDP). In the CDP's Carbon Performance Ratings, Gold Fields was one of only two JSE companies to be placed in the top band for their climate mitigation and adaptation actions
- Placed first among the top 300 companies operating in the BRICS (Brazil, Russia, India, China, South Africa) countries in the Environmental Tracking Carbon Rankings by the Environmental Investment Organisation. Gold Fields was ranked third in the Global Top 800 companies table
- Rated by the JSE as one of its best performers in the 'high environmental impact' category of its Socially Responsible Investment index. This makes the company one of only six consistent best performers for five years running
- Receipt of the 2011 Global Business Coalition Health Award in the category of Workplace and Community Engagement for our wellness programme in Ghana
- First place in the Mining and Industrial category at the Southern African Institute of Steel Construction (SAISC) Steel Awards 2011 for the new steel headgear at South Deep
- Global Reporting Initiative A+ compliance for our 2011 Integrated Annual Review
- Achievement of advanced-level reporting under the United Nations Global Compact
- Joint first place in the Ernst & Young Excellence in Corporate Reporting 2011 awards for companies listed on the JSE

2.1.4 Board of Directors

The Board is the highest governing authority of the company. In terms of the Memorandum of Incorporation, the number of directors shall not be less than four and not more than 15. The Board comprises 14 directors, of whom only two are executive directors and 12 independent non-executive directors. Advised by the Nominating and Governance Committee, the Board ensures that the election of independent directors falls on reputable persons of well-known competence and experience, who are willing to devote a sufficient part of their time to the company. The role of non-executive directors, who are independent of management, is to protect shareholders' interests, including those of minority shareholders. They also ensure that individual directors or groups of directors are subject to appropriate scrutiny in their decision-making.

Case study

Gold Fields recognised as one of the top-5 mining companies in the DJSI

Find out more online

The Board of Directors' Charter articulates the objectives and responsibilities of the Board (see below). Likewise, each of the Board sub-committees operates in accordance with written terms of reference, which are regularly reviewed by the Board. The Board takes ultimate responsibility for the company's adherence to sound corporate governance standards and sees to it that all business judgements are made with reasonable care, skill and diligence.

The Board is kept informed of all developments at the company, primarily through the executive directors and the company secretary. The Board is also kept informed through a number of other mechanisms, including employee climate surveys, newsletters and internal staff communication, amongst others.

The roles of the Chair of the Board and the Chief Executive Officer (CEO) are kept separate. Non-executive director Dr Mamphela Ramphele was the Chair of the Board and executive director Nick Holland was the CEO of Gold Fields throughout 2011.

In 2011, there were three changes to the composition of the Board. On 25 February 2011, Sello Moloko was appointed as an independent non-executive director. On 1 June 2011, Delfin Lapus Lazaro was appointed as an independent non-executive director, replacing Chris I von Christierson, who retired from the Board on 17 May 2011, following 12 years' service.

The Board is required to meet at least four times a year. During 2011, it convened six times.

Figure 2.2: Board meetings and attendance

Directors	16/02/11	18/05/11	02/08/11	04/08/11	09/11/11	29/11/11
MA Ramphele	Yes	Yes	Yes	Yes	Yes	Yes
NJ Holland	Yes	Yes	Yes	Yes	Yes	Yes
K Ansah	Yes	Yes	Yes	Yes	Yes	Yes
CA Carolus	Yes	Apology	Yes	Yes	Yes	Apology
R Dañino	Yes	Yes	Yes	Yes	Yes	Apology
AR Hill	Yes	Yes	Yes	Yes	Apology	Yes
DL Lazaro[1]	-	-	Yes	Yes	Yes	Yes
RP Menell	Yes	Yes	Yes	Yes	Yes	Yes
MS Moloko[2]	-	Yes	Yes	Yes	Yes	Apology
DN Murray	Yes	Yes	Yes	Yes	Yes	Yes
DMJ Ncube	Yes	Yes	Yes	Yes	Yes	Yes
RL Pennant-Rea	Yes	Apology	Yes	Yes	Yes	Apology
PA Schmidt	Yes	Yes	Yes	Yes	Yes	Yes
CI von Chistierson[3]	Yes	-	-	-	-	-
GM Wilson	Yes	Yes	Yes	Yes	Yes	Yes

[1] Mr Lazaro was appointed to the Board on 1 June 2011
[2] Mr Moloko was appointed to the Board on 25 February 2011
[3] Mr Von Christierson retired from the Board on 17 May 2011

Remuneration

The remuneration of non-executive directors is recommended to the shareholders by the Board after receiving external advice. The directors' fees must be approved by shareholders at the annual general meeting of the company for the ensuing year.

Non-executive directors only receive remuneration that is due to them as members of the Board. Directors serving as members on Board sub-committees receive additional remuneration.

Details of the Directors' remuneration packages, as well as those of the Prescribed Officers, are disclosed in the Directors Report of the Financial Review 2011.

Monitoring of performance

In line with recommendations by King III, the Board carries out a rigorous evaluation of the independence of directors.

The Chair is appointed on an annual basis by the Board, with the assistance of the Nominating and Governance Committee, after a rigorous review of the Chair's performance and independence.

During the year under review, the Board and each Board Sub-Committee underwent a detailed performance assessment by Deloitte. Deloitte found that the structures and processes governing the Board and its committees were well established and functioning well. Furthermore, the Board had fulfilled its role and responsibilities and had discharged its accountability to the company, shareholders and other stakeholders in an exemplary manner. Ongoing learning and education for directors was identified as an area of improvement. The results of this assessment were discussed by the Board and the sub-committees.

South Deep, South Africa

Rotation and Retirement from the Board

In accordance with our Memorandum of Incorporation, one third of the directors shall retire from office at each annual general meeting. The first to retire are those directors appointed as additional members of the Board during the year, followed by the longest serving members. Retiring directors can be immediately re-elected by the shareholders at the annual general meeting.

The Board, assisted by the Nominating and Governance Committee, can recommend the eligibility of retiring directors (subject to availability and their contribution to the business) for reappointment. A director who has served on the Board for more than three years since their last election or appointment is required under the Memorandum of Incorporation to retire at the next annual general meeting.

Board of Directors' Charter

The Board reviewed and approved the Board of Directors' Charter to align it to the recommendations of King III. Our Board of Directors' Charter compels directors to promote the Vision of the company, while upholding sound principles of corporate governance. Directors' responsibilities under the Charter include:

- Determining the company's Code of Ethics and conducting its affairs in a professional manner, upholding the core values of integrity, transparency and enterprise
- Evaluating, determining and ensuring the implementation of corporate strategy and policy
- Determining compensation, development, skills development and other relevant policies for employees
- Developing and setting best-practice disclosure and reporting practices that meet the needs of all stakeholders
- Authorising and controlling capital expenditure and reviewing investment capital and funding proposals
- Constantly updating the risk management systems, including setting management expenditure authorisation levels and exposure limit guidelines
- Reviewing executive succession planning and endorsing senior executive appointments, organisational changes and general remuneration policies. In this the Board will be guided by the Remuneration Committee as well as the Nomination and Governance Committee

www.goldfields.co.za/pdfs/charter.pdf

Independent non-executive directors

1. Dr Mamphela Ramphele (64)

Chair

MBCHB, University of Natal; PhD in Social Anthropology, University of Cape Town; B Com Admin, University of South Africa; Diploma in Tropical Health and Hygiene and a Diploma in Public Health, University of the Witwatersrand

Dr Ramphele was appointed non-executive director and Deputy Chair of the Board of Gold Fields on 1 July 2010 and Chair of the Board with effect from 2 November 2010. She is the founder of Letsema Circle, a Cape Town-based specialist transformation advisory company and a director of Remgro, Anglo American Plc and Medi-Clinic. Dr Ramphele was Vice-Chancellor of the University of Cape Town, a post she took up in 1996, having joined the university as a research fellow in 1986. She served as Managing Director of the World Bank from May 2000 to July 2004 with responsibility for human development activities and the World Bank Institute. She was Co-Chair of the Global Commission for International Migration (GCIM) between 2004 and 2005.

2. Kofi Ansah (67)

BSc (Mechanical Engineering), UST Ghana; MSc (Metallurgy), Georgia Institute of Technology

Mr Ansah was appointed a director of Gold Fields in April 2004. He is also a director of Ecobank Limited (Ghana).

3. Cheryl A Carolus (53)

BA Law; Bachelor of Education, University of the Western Cape

Ms Carolus was appointed a director of Gold Fields on 10 March 2009. She is Executive Chair of Peotona Group Holdings, an empowerment consortium, and also chairs the Board of South African Airways. She is a director of a number of other public and private companies, including the World Wildlife Fund, and served as South Africa's High Commissioner to the United Kingdom from 1998 to 2001. Ms Carolus was the CEO of South African Tourism from 2001 to 2004 and Chair of the South African National Parks board for six years.

4. Roberto Dañino (61)

Master of Law, Harvard Law School; Bachelor of Law, Pontificia Universidad Catolica del Peru

Mr Dañino has been a director of Gold Fields since 10 March 2009. A former Prime Minister of Peru and his country's ambassador to the United States, he serves on various corporate and non-profit boards in Peru, Canada, the United Kingdom and the United States, including Gold Fields La Cima in Peru. On 1 January 2011, he was appointed executive director of Fosfatos del Pacifico S.A. Mr Dañino has practised for over 30 years as a partner of leading law firms in Lima and Washington DC, was Senior Vice-President and General Counsel of the World Bank as well as Secretary General of the International Centre for Settlement of Investment Disputes (ICSID).

5. Alan R Hill (69)

BSc (Hons); MPhil (Rock Mechanics), Leeds University

Mr Hill joined the Board on 21 August 2009. On 2 October 2010, he was appointed the CEO and Chair of Teranga Gold Corporation. After graduating, Mr Hill worked for a number of mining firms before joining Barrick Gold in 1984. He spent 19 years with Barrick from which he retired in 2003 as Executive Vice-President: Development.

6. Delfin Lapus Lazaro (66)

BS Metallurgical Engineering, University of Philippines; MBA, Harvard Business School

Mr Lazaro joined the Board on 1 June 2011. He also serves on the Board of Ayala Corporation, Insular Life Assurance Company Ltd and Manila Water Company Inc., amongst other companies. He served as the President and CEO of Globe Telecom from 1996 to 1998. Prior to this, he was head of the Philippines Department of Energy and served as the chairman of various entities from 1992 to 1994. He started his working career at Benguet Corporation in 1975 as a treasurer and held various other positions in the organisation until he was appointed vice chairman. He served in this role from 1989 to 1992.

7. Richard P Menell (56)

BA (Hons), MA (Natural Sciences Geology), Trinity College Cambridge; MSc (Mineral Exploration and Management), Stanford University, California

Mr Menell was appointed a director of Gold Fields on 8 October 2008. He has over 34 years' experience in the mining industry, including service as President of the Chamber of Mines of South Africa, President and CEO of Teal Exploration & Mining as well as Executive Chair of Anglovaal Mining and Avgold. He is a director of Weir Group Plc and Senior Advisor to Credit Suisse. He also serves as a director of a number of unlisted companies and non-profit organisations.

8. Matthews Sello Moloko (46)

BSc (Hons) and Post Graduate Certificate in Education, University of Leicester; Advanced Management Programme, Wharton

Mr Moloko was appointed a director of Gold Fields on 25 February 2011. He is the executive Chair, founder and shareholder of Thesele Group and non-executive Chair of Alexander Forbes Group. He has worked at a number of financial services companies, including Brait and Old Mutual, where he was CEO of Old Mutual Asset Managers until 2004.

Other directorships include Acucap Limited and Sycom Property Fund and he chairs the Nelson Mandela Foundation Investment Committee.

9. David N Murray (67)

BA Hons Econ; MBA, University of Cape Town

Mr Murray was appointed a director of Gold Fields on 1 January 2008. He has more than 37 years' experience in the mining industry and has been CEO of Rio Tinto Portugal, Rio Tinto Brazil, TVX Gold Inc, Avgold and Avmin. He is also a non-executive director of Ivernia Inc.

10. Donald MJ Ncube (64)

BA Economics and Political Science, Fort Hare University; Postgraduate Diploma in Labour Relations, Strathclyde University, Scotland; Graduate MSc Manpower Studies, University of Manchester Institute of Science and Technology; Diploma in Financial Management; Honorary Doctorate in Commerce, University of the Transkei

Mr Ncube was appointed a director of Gold Fields on 15 February 2006. Previously, he was an alternate director of Anglo American Industrial Corporation and Anglo American Corporation, a director of AngloGold Ashanti as well as non-executive Chair of South African Airways. He is currently the Executive Chair of Badimo Gas and CEO of Zula Mining Supplies.

11. Rupert L Pennant-Rea (64)

BA, Trinity College, Dublin; MA, University of Manchester

Mr Pennant-Rea has been a director of Gold Fields since 1 July 2002. He is Chair of Henderson Group Plc and The Economist Newspaper Limited and a director of Hochschild Mining Plc, Go-Ahead Group, Times Newspaper Holdings and various other companies. Previously Mr Pennant-Rea was the editor of The Economist and the Deputy Governor of the Bank of England.

12. Gayle M Wilson (67)

BCom; BCompt (Hons), University of South Africa; CA (SA)

Mrs Wilson was appointed a director on 1 August 2008. She was previously an audit partner at Ernst & Young for 16 years. She is a non-executive director of Witwatersrand Consolidated Gold Resources. She was previously an audit partner at Ernst & Young for 16 years, where her main focus was on mining clients.

Executive directors

13. Nicholas J Holland (53)

Chief Executive Officer (CEO)

BCom, BAcc, University of the Witwatersrand; CA (SA)

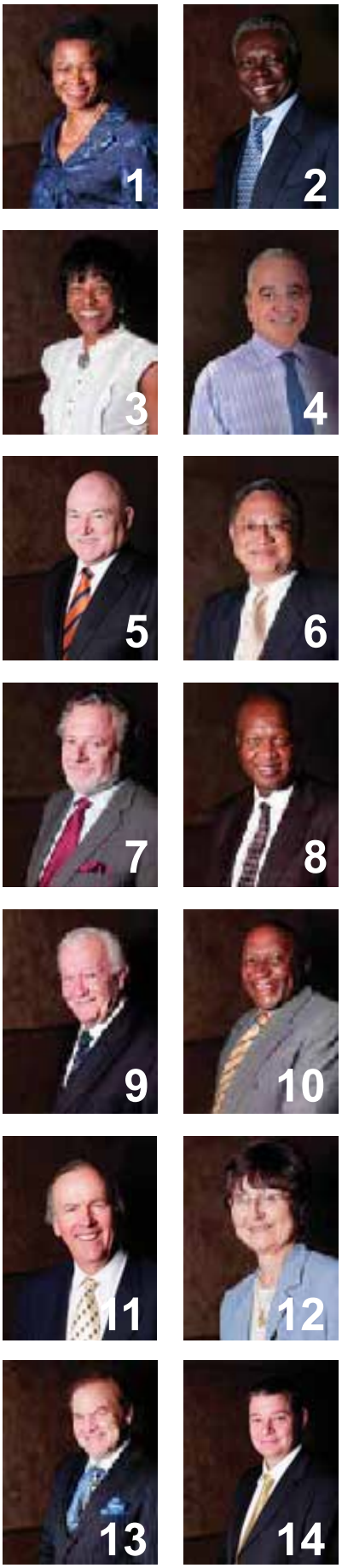
Mr Holland was appointed an executive director of Gold Fields in 1997 and became CEO on 1 May 2008. Prior to that he was the company's CFO. Mr Holland has more than 30 years' experience in financial management, of which 22 years were in the mining industry. Prior to joining Gold Fields, he was Financial Director and Senior Manager of Corporate Finance at Gencor. He is also an alternate director of the Rand Refinery.

14. Paul A Schmidt (44)

Chief Financial Officer (CFO)

BCom, University of the Witwatersrand; BCompt (Hons), Unisa; CA (SA)

Mr Schmidt was appointed CFO on 1 January 2009 and joined the Board on 6 November 2009. Prior to this, he held the positions of acting CFO from 1 May 2008 and Financial Controller from 1 April 2003. He has more than 16 years' experience in the mining industry.



2.1.5 Board committees

The Board has established a number of standing committees with delegated authority from the Board. The committee members are all independent non-executive directors and the CEO is a permanent invitee to each committee meeting. Each Board committee is chaired by an independent non-executive director.

Committees operate in accordance with written terms of reference. In addition, the committees are required to evaluate their effectiveness and performance on an annual basis and to report the respective findings to the Board for consideration.

Nominating and Governance Committee

It is the responsibility of this committee, which has five independent directors, amongst other things, to:

- Develop the company's approach towards corporate governance, including recommendations to the Board
- Identify successors to the posts of Chair and CEO, and make appropriate recommendations to the Board
- Consider the mandates of the Board committees, the selection and rotation of committee members and Chairs, and the performance of each committee on an ongoing basis
- Evaluate the effectiveness of the Board, its committees and management, and report the findings of this evaluation to the Board itself

Special meetings of the Committee were held on 16 and 17 May 2011 for the purposes of interviewing prospective candidates for appointment to the Board.

Figure 2.3: Membership and attendance of the Nominating and Governance Committee

Directors	15/02/11	16/05/11	17/05/11	07/11/11
MA Ramphele (Chair)	Yes	Yes	Yes	Yes
K Ansah	Yes	Yes	Yes	Yes
R Danino	Yes	Yes	Yes	Apology
RL Pennant-Rea	Yes	Yes	Yes	Yes
CI von Christierson[1]	Yes	Apology	-	-

[1] Mr Von Christierson retired from the Board on 17 May 2011

Audit Committee

The Audit Committee has updated, formal terms of reference which are set out in the committee's Board-approved Charter. The Board is satisfied that the committee has complied with these terms and with its legal and regulatory responsibilities as set out in the Companies Act No 71 of 2008, as amended, the King Code of Governance Principles 2009 (King III) and the JSE listing requirements.

The committee consists of five independent directors and the Board believes that the members collectively possess the knowledge and experience to oversee and assess the performance of Gold Fields management and auditors, the quality of Gold Fields financial controls, the preparation and evaluation of Gold Fields financial statements and Gold Fields financial reporting.

The Board has established and maintains internal controls and procedures, which are reviewed on a regular basis. These are designed to manage, rather than eliminate, the risk of business failures and to provide reasonable assurance against such failures.

It is the duty of this committee, amongst other things, to monitor and review:

- The effectiveness of the internal audit function
- The appointment of external auditors, audit findings and reports
- Reports of both internal and external auditors
- Evaluation of the performance of the Chief Financial Officer
- The adequacy and effectiveness of the company's enterprise-wide risk management policies, processes and strategies
- The governance of information technology (IT) and the effectiveness of the company's information systems
- Quarterly and annual financial and operational reports, the annual financial statements and all other widely distributed documents
- The Form 20-F filing with the US Securities Exchange Commission (SEC)
- Accounting policies of the Group and proposed revisions
- Compliance with applicable legislation, requirements of appropriate regulatory authorities and the company's Code of Ethics
- The integrity of the Integrated Annual Report (by ensuring that its content is reliable and recommending it to the Board for approval)
- Policies and procedures for preventing and detecting fraud

Figure 2.4: Membership and attendance of the Audit Committee

Members	14/02/11	10/03/11	23/03/11	20/04/11	16/05/11	03/08/11	31/08/11	07/11/11
GM Wilson	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
RP Menell	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
MS Moloko[2]	-	-	-	-	-	Yes	Apology	Apology
DMJ Ncube	Yes	Yes	Apology	Yes	Yes	Yes	Yes	Yes
RL Pennant-Rea	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

[2] Mr Moloko was appointed to the Board on 25 February 2011 and to the Audit Committee on 18 May 2011

Internal and external auditors have unrestricted access to the Audit Committee, the Audit Committee Chair and the Chair of the Board, ensuring that auditors are able to maintain their independence. Both the internal and external auditors report at the Audit Committee meetings. The committee also meets with both internal and external auditors separately, without other invitees being present.

The committee is responsible for recommending the appointment of a firm of external auditors to the Board, who in turn will recommend the appointment to the shareholders. The committee is also responsible for determining that the designated appointee has the necessary experience, qualifications and skills, and that the audit fee is adequate.

The committee reviewed and assessed the independence of the external auditor, including their confirmation in writing that the criteria for independence as set out in the rules of the Independent Regulatory Board for Auditors and international bodies have been followed. The committee is satisfied that KPMG is independent of the group. An audit fee for the period of R24 million (US$3 million) was approved, as well as R600,000 (US$75,000) for tax advisory compliance services and R5.1 million (US$706,000) in assurance services on bonds, sustainability reporting and other agreed-upon services. The committee determines the nature and extent of non-audit services that the firm can provide and pre-approves all permitted non-audit assignments by the company's independent auditor. The committee recommended the re-appointment of KPMG as the company's external auditor.

The committee approved the audit plan presented by the external auditors and monitors progress against the plan. The audit plan forms the basis of providing the committee with the necessary assurances on risk management, the internal control environments and IT governance. The committee recommends that KPMG is reappointed for the 2012 financial year with Mr Ian Kramer as the group audit engagement partner.

The internal control systems of the Group are monitored by internal auditors, who report their findings and recommendations to the Audit Committee and to senior management. The Audit Committee determines the purpose, authority and responsibility of the internal audit function in an Internal Audit Charter. The internal audit function is headed by the senior manager, internal audit – who can be appointed or dismissed by the Audit Committee. The Audit Committee is satisfied that the senior manager has the requisite skills and experience and that he is supported by sufficient staff with appropriate skills and training.

Gold Fields Internal Audit (GFIA) is an independent assurance and consulting division designed to add value and improve the operations of the Gold Fields Group.

GFIA operates in accordance with the International Standards for the Professional Practice of Internal Auditing as prescribed by the Institute of Internal Auditors (IIA). GFIA reports deficiencies to the committee every quarter together with recommended remedial actions, which are then followed up. Internal audit provided the committee with a written report, which assessed the internal financial controls, IT governance and the risk management process as adequate.

During the year an Internal Audit Maturity Assessment was carried out by an independent supplier, which found "a strong practice".

The Audit Committee is also responsible for oversight of the risk management function. Enterprise Risk Management (ERM) processes are deeply embedded in the Group and during the year under review the committee ensured that the risk table was regularly challenged, assessed and updated and that the necessary measures were put in place to mitigate these risks.

The Audit Committee is responsible for IT Governance on behalf of the Board and review of the IT manager's report at each meeting.

The Financial Director's expertise was evaluated by the Audit Committee. The Committee is satisfied that the Chief Financial Officer has the appropriate expertise and experience to carry out his duties as the financial director of the company and is supported by qualified and competent senior staff.

Audit Committee statement

Based on information from and discussions with management and internal and external auditors, the Audit Committee has no reason to believe that there were any material breakdowns in the design and operating effectiveness of internal financial controls during the year and that the financial records can be relied upon as the basis for preparation of the annual financial statements.

The Audit Committee considered and discussed this Integrated Annual Report with both management and the external auditors. During this process, the committee:

- Evaluated significant judgments and reporting decisions
- Determined that the going concern basis of reporting is appropriate
- Evaluated the material factors and risks that could impact on the annual report
- Evaluated the completeness of the financial and sustainability discussion and disclosures
- Discussed the treatment of significant and unusual transactions with management and the external auditors

The Audit Committee considers that this Integrated Annual Report complies in all material respects with the statutory requirements of the various regulations governing disclosure and reporting of the annual financial statements and that the annual financial statements comply in all material respects with the Companies Act 71 of 2008 (as amended) and IFRS. The Audit Committee has recommended to the Board that the annual financial statements be adopted and approved by the Board.

Figure 2.5: Membership and attendance of the Remuneration Committee

Directors	15/02/2011	17/05/2011	03/08/2011	08/11/2011
RL Pennant-Rea (Chair)[1]	Yes	Yes	Yes	Yes
MA Ramphele	Yes	Yes	Yes	Yes
DMJ Ncube	Yes	Yes	Yes	Yes
CI von Chistierson[2]	Yes	-	-	-
GM Wilson	Yes	Yes	Yes	Yes

[1] Mr Pennant-Rea was appointed Chair of the Committee on 17 May 2011

[2] Mr Von Christierson retired from the Board on 17 May 2011

Figure 2.6: Membership and attendance of the Safety, Health and Sustainable Development (SH&SD) Committee

Directors	15/02/11	17/05/11	03/08/11	07/11/11
DN Murray (Chair)	Yes	Yes	Yes	Yes
K Ansah	Yes	Yes	Yes	Yes
CA Carolus	Yes	Apology	Yes	Yes
R Dañino[3]	-	-	Yes	Apology
RP Menell	Yes	Yes	Yes	Yes
MA Ramphele	Yes	Yes	Yes	Yes

[3] Mr Dañino was appointed as a member of the SH&SD Committee on 18 May 2011

Remuneration Committee

It is the responsibility of this committee, amongst other things, to:

- Establish the company's remuneration philosophy
- Establish the terms and conditions of employment for executive directors and other senior executives (which currently includes a short-term performance-linked bonus scheme and a long-term share incentive scheme)
- Review remuneration policies on a regular basis

The notice periods of the CEO and the CFO are two years and one year respectively. The company has a maximum exposure of two-and-a-half years' remuneration in respect of the CEO and two years' remuneration for other members of the Executive Committee, including the CFO. These limits apply when their services are terminated as a result of a takeover or a merger.

Details of Directors' fees and equity settled instruments, as well as a full remuneration report, are contained in the Directors' Report in the Financial Review 2011.

Safety, Health and Sustainable Development Committee

It is the responsibility of this committee, amongst other things, to assist the Board in its oversight of the company's environmental, health and safety programmes – as well as its socio-economic performance.

In particular, this includes the monitoring of the company's efforts to minimise health, safety and mining related incidents and accidents, and to ensure its compliance with relevant environmental regulations. All members of the committee have been selected on the basis of their considerable experience in the field of sustainable development.

Figure 2.7: Membership and attendance of the Capital Projects Control and Review Committee

Directors	14/02/11	16/05/11	03/08/11	08/11/11
RP Menell (Chair)	Yes	Yes	Yes	Yes
AR Hill	Yes	Yes	Yes	Yes
DI Lazaro[4]	-	-	-	Yes
DN Murray	Yes	Yes	Yes	Yes
CI von Christierson[5]	Yes	-	-	-
GM Wilson	Yes	Yes	Yes	Yes

[4] Mr Lazaro was appointed to the Board on 1 June 2011 and this committee on 4 August 2011

[5] Mr Von Christierson retired from the Board on 17 May 2011

Capital Projects Control and Review Committee

It is the responsibility of this committee, amongst other things, to:

- Satisfy the Board that the company has used appropriate methodologies in evaluating and implementing capital projects in excess of R1.5 billion or US$200 million
- Ensure that adequate controls are in place to review such projects from inception to completion, and make appropriate recommendations to management and the Board

Social and Ethics Committee

It is the responsibility of this committee, which was formed by the Board on 29 November 2011, to ensure, amongst other things, that:

- Gold Fields discharges its statutory duties in respect of section 72 of Companies Act 71 of 2008 (as amended), dealing with the structure and composition of board sub-committees
- Gold Fields adequately implements the 10 principles on sustainable development of the International Council on Mining and Metals and the 10 principles of the United Nations Global Compact
- Gold Fields upholds the goals of the Organisation of Economic Co-operation and Development (OECD) recommendations regarding corruption
- Gold Fields complies with the Employment Equity Act (as amended), the Broad Based Black Economic Empowerment Act (as amended) and the provisions of the 2014 Mining Charter
- Gold Fields directors and staff comply with the company's Code of Ethics
- Gold Fields practices labour and employment policies that comply with the terms of the International Labour Organization (ILO) protocol on decent work and working conditions
- Gold Fields ensures the continued training and skills development of its employees
- Gold Fields performs its responsibilities in respect of social and ethics matters and that these policies are reviewed on an annual basis, or as required

The Social and Ethics Committee is comprised of the chairs of the Audit Committee, Remuneration Committee, the Safety, Health and Sustainable Development Committee and the Nominating and Governance Committee. Current members of the committee, which had its first meeting on 14 February 2012, are Ms Wilson, Mr Pennant-Rea, Mr Murray and Dr Ramphele, in their respective capacities, while Mr Dañino is the Chair.

Executive Committee

The Executive Committee (ExCo) is not a committee of the Board. It is primarily responsible for the implementation of company strategy, as well as carrying out the Board's mandates and directives. ExCo meets on a regular basis to review company performance against set objectives and develops company strategy and policy proposals for consideration by the Board.

ExCo also assists the Board in the execution of the company's disclosure obligations. A series of guidelines on disclosure have been disseminated throughout the company. Furthermore, a disclosure co-ordinator has been appointed at each operation to ensure appropriate implementation throughout the company.

Each of Gold Fields operating subsidiaries has established Board and executive committee structures to ensure sound corporate governance practices and standards. At least one of the company's executive directors serves on the Boards of the operating subsidiaries.

Members of the Executive Committee, with the exception of the Company Secretary, have also been identified as the Prescribed Officers of the company in terms of section 66(10) of the Companies Act 71 of 2008 (as amended).

Additional content online

www.goldfields.co.za

2.2 Risk management

Effective and integrated risk management sits at the heart of true business sustainability. Gold Fields has a well-established Enterprise Risk Management (ERM) process, which not only covers our 'traditional' operational and business risks, but also our environmental, social, health and safety risks.

The overriding purpose of the ERM process is to help Gold Fields become more resilient in the global business environment and achieve its strategic objectives – to grow Gold Fields, to optimise its operations and to secure its future. It also supports our efforts to achieve the highest levels of corporate governance, as well as full compliance with the risk management requirements of South Africa's King III Code.

The ERM process is comprised of two integrated and well-aligned components: operational risk management and strategic risk management (see Figure 2.8). It is aligned with the ISO 31000 international standard on risk management.

During the year, our international operations were surveyed by the IMIU (International Mining Industry Underwriters) and our South African mines by Zurich Risk Engineers, part of Zurich Re. Both agencies noted continued improvement in risk management at these operations and all of the mines are placed in the top quartile of the approximate 400 mines assessed.

Gold Fields has operated for 11 years without making a property claim into the insurance market.

Additional content online

www.goldfields.co.za

During 2011, the ERM process at Gold Fields was reviewed by PricewaterhouseCoopers, which found that:

- The ERM process is fully compliant with the risk management requirements of King III
- All the key principles of the ISO 31000 risk management guidelines have been adopted
- Gold Fields has established a mature risk management process that is leading many of the approaches in the non-financial sector

Figure 2.8: Enterprise Risk Management process – definition

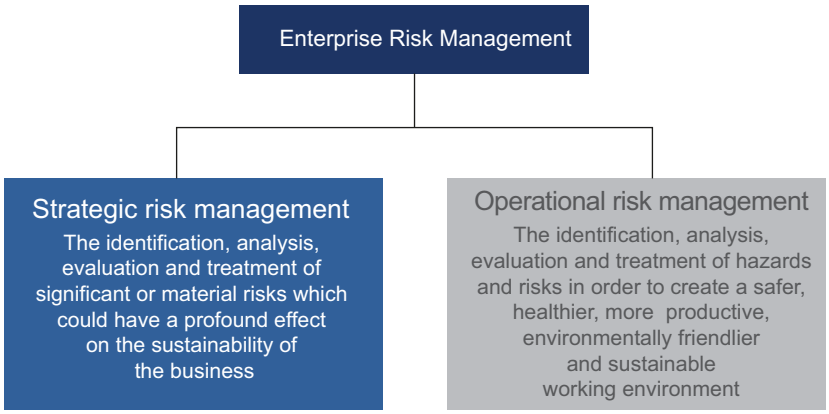


Figure 2.9: Risk management review process

Figure 2.10: Risk, strategy and performance (within the tolerance levels set by the Board)

Risk Area	Aspirations	Tolerance level	Targets	2010	2011
Optimise our assets					
Safety	Zero Harm	Zero Harm	FIFR – Zero	0.11	0.12
			SIFR – 25% less[1]	2.22	2.64
			LTIFR – 25% less[1]	4.39[2]	4.69
			MTIFR – 25% less[1]	7.16[2]	5.68
Health	Zero Harm	Zero Harm	2013 MHSC milestones for Silicosis & NIHL	On track	On track
Environment	Zero Harm	Zero Level 4 and 5 incidents	Zero	Zero	Zero
Gold Delivery	5Moz by 2015	95% compliance	3.5Moz	3.5	3.5
	NCE 25%		NCE 15% - 20%	16%	25%
Securing our future					
Human Resources	Pipeline of scarce and critical skills	60% – successor cover ratio for top 250 employees	60%	50%	70%
Licence to operate	Global leader in sustainable gold mining	Full compliance with all legal and community commitments	Full compliance	100%	100%
Ethics and Corporate Governance	Full compliance – SOX and substantial compliance to King III	No material / significant failures	No material / significant failures	Nil	Nil
Growing Gold Fields					
Capital Projects	Project delivered on time / budget	7% - 10% overrun	South Deep, Chucapaca, FSE, APP, Yanfolila	On track	On track
Mergers & Acquisitions	Proper assessment of risk and returns commensurate with the risk	IRR[3] 5% – Near-mine IRR 10% – Greenfields	As per IRR	On track	On track
Exploration	Appropriate balance between geological potential & political risk	Leaning towards greater geological potential in high risk areas	As per GBAR[4]	On track	On track

Targets achieved Improved on previous year Targets not achieved

[1] South Africa only – other regions are subject to a 20% reduction target for SIFR, LTIFR and MTIFR

[2] Restatement – LTIFR previously reported as 4.38 and MTIFR previously reported as 7.09. Please see p4 for explanation

[3] Internal Rate of Return

[4] Global Business Area Rating system

Risk review process

The multi-stage strategic risk management process starts with quarterly strategic risk management assessments at each of our mines and service divisions. In addition, all sites regularly conduct operational risk assessments compliant with standards set by Simrac (Safety in Mines Research Advisory Committee) in South Africa and the AU/NZ Standard 4360 in Australasia. Key strategic risks are identified and analysed, and mitigating actions are put in place (or eviewed if already in place). The regions' top risks are forwarded to the egional executive committees, which review the risk register and decide on appropriate mitigating actions.

The Group's top strategic risks are then reviewed by the Gold Fields Executive Committee (ExCo) on a biannual basis. Mitigation strategies are developed on the basis of this review, which are presented at the Audit Committee's dedicated risk meetings and reviewed after six months.

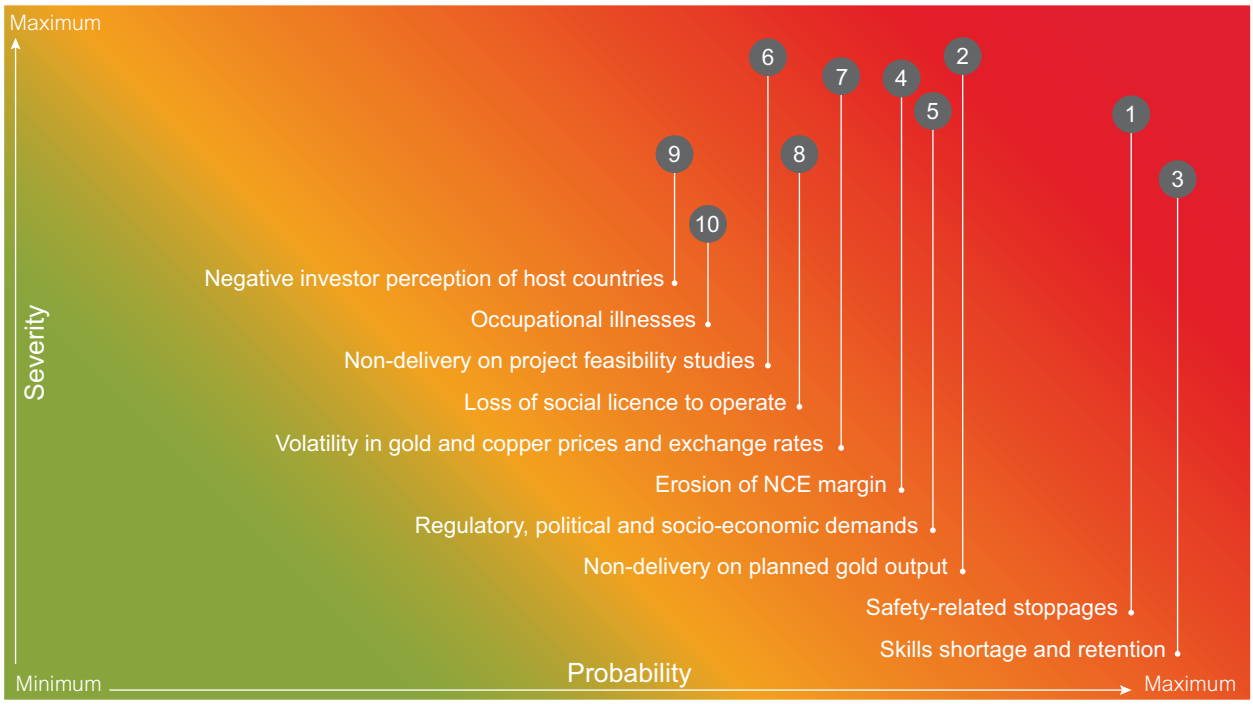
The Board and company management are responsible for risk governance and management. Nonetheless, the integral involvement of all line managers in the process is essential to ensure the effectiveness of the system.

Risk management assurance

Our Risk Management Charter provides for four levels of ERM process assurance: (1) Financial Internal Controllers review mitigating strategies on a regular basis to ensure they are being implemented. These reviews must be captured in the Cura risk management software system; (2) Internal Audit conducts an annual review on the effectiveness of the risk management process; (3) Internal Audit provides assurance to the Board that the risk management plan is integrated into the daily business activities of Gold Fields; (4) Internal Audit conducts an annual review of the mitigating strategies of the top risks in the risk registers to ensure they are being implemented.

2.2.1 Top 10 Group heat map

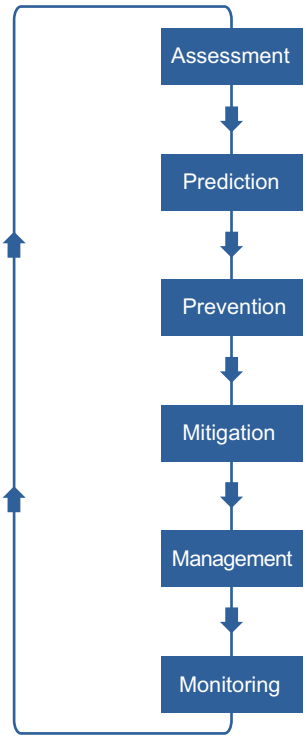
The heat map below sets out the top 10 Group risks, as identified through our Enterprise Risk Management (ERM) process (p36-37). This represents the Group's 'top' operational, sustainability and financial risks, as extracted from regional and operational risk registers. 'Severity' is based on a pre-determined scale that uses defined measures depending upon the risk area being assessed. These include health and safety, business interruption, corporate image, environment and earnings/capital at risk. 'Probability' is based on both percentage probability (10% to 100%) and frequency (once every 50 years to once a week).



Gold Fields risk review process

- The Executive Committee of each operation and region conducts a risk review of the top risks and mitigating strategies on a quarterly basis
- The Mine Manager presents the top 10 risks and mitigation actions to members of the ExCo during quarterly business reviews. The impacts of relevant mitigating actions are noted
- Next, the Group Risk Manager extracts all of the top risks from the regional and operational registers in line with the tolerance levels, and compiles the Group risk register
- The risks are then assessed and moderated in a Group context by the relevant risk owners and ExCo members
- A top risk register review is conducted and Group-wide mitigating strategies are set and monitored during the ExCo Risk Meeting
- A review of the top risks is conducted by the Audit Committee twice a year

Note: All mitigation actions are evaluated in order to assess their effectiveness



Risk mitigating strategies		Page(s)[1]
Risk: Safety-related stoppages		
1	• Renewed Safe Production Management approach, with a focus on engineering-out risk, capacity building and compliance	p56-60
	• Enhanced visible leadership and behaviour-based safety initiatives	p57-59
	• Implementation of a comprehensive strategy to achieve South Africa's 2013 mining industry milestones	p56-60
	• Ongoing constructive engagement strategy with the Department of Mineral Resources in South Africa	p59
Risk: Non-delivery on planned gold output		
2	• Implementation of the Shaft Full Potential programme at our South African operations, as part of the Business Process Re-engineering (BPR) project. This programme includes initiatives such as:	p48-49
	· Reserve flexibility through accelerated underground development	
	· Enhanced ore flow mapping and diagnostic analysis	
	· Enhanced management of mining mix procedures	
Risk: Skills shortage and retention		
3	• Competitive remuneration and benefits strategy, based on salary surveys and benchmarking	p128, 130-132
	• Proactive support of tertiary education through bursary programmes and sponsorship of mining schools	p146
	• Proactive leadership development and talent management programme	p130-132
Risk: Erosion of NCE margin		
4	• Implementation of the BPR programme to achieve:	p48-50
	· Enhanced planning and sequencing to improve safety and efficiency	
	· Enhanced cost management and control systems	
	· Advancement of owner mining and maintenance at our Ghanaian and Australian operations	
Risk: Regulatory, political and socio-economic demands		
5	• Implementation of empowerment transactions to meet transformation requirements in South Africa	p155
	• Implementation of Employee Share Ownership Plan for selected employees in South Africa	p41
	• Ongoing review and implementation of Social and Labour Plans (SLPs)	p144
	• Continued engagement with host governments	p154
Risk: Non-delivery on project feasibility studies		
6	• Board oversight of projects through the Capital Investment Framework	p104
	• Enhanced strategic and capital planning processes	p102-105
	• Enhanced business and exploration risk assessment processes	p103, 105
Risk: Volatility in gold and copper prices and exchange rates		
7	• Enhanced strategic and capital planning processes	p102-105
	• Increased geographical and currency diversification	p46, 100, 109
	• Ongoing cost control, including BPR implementation	p48-49
Risk: Loss of social licence to operate		
8	• Full compliance with the commitments made to communities	p141-149
	• Proactive stakeholder engagement and community investment strategy	p40-44, 141-148
	• Review of our Sustainable Development strategy in our regions	p24, online
Risk: Negative investor perception of host countries		
9	• Improved production performance of the South African mines	p48-49, 78-87
	• Transparent engagement with investors on issues of concern	p38, 40
	• Increased geographic diversification	p46, 100, 109
Risk: Occupational illnesses		
10	• Enforcement of mandatory codes of practice and enhanced noise- and dust-control measures	p137
	• Regular medical surveillance of employees and contractors	p137
	• Implementation of a comprehensive strategy to achieve South Africa's 2013 mining industry milestones	p136-140

[1] See p18-19 and p19-21 respectively for associated business objectives for 2011 and 2012

2.3 Investors and stakeholder engagement

The sustainability of our business is highly reliant on proactive and frank stakeholder engagement.

Our engagement with stakeholders falls into two types:

- Direct engagement, including organised dialogues, roundtable discussions, one-on-one meetings, internal surveys and regular engagement with local communities at each operation
- Indirect engagement, including the use of external benchmarks and standards that are designed to reflect and address societal expectations (p26-27)

At an operational level, all our mines identify, prioritise and engage stakeholder groups that have the potential to affect their operational, sustainability or financial performance. They do so in accordance with the AA 1000 Stakeholder Engagement Standard.

At a strategic level, our corporate and regional management teams likewise implement an ongoing programme of direct and indirect engagement.

Relevant outcomes from our direct stakeholder engagements are logged and communicated through our Enterprise Risk Management (ERM) process – and so form a vital part of the Group's risk management programme (p36-39).

Figure 2.11: Table of relevant and material issues raised by stakeholders and location in the Integrated Annual Review

Stakeholder issues	Stakeholders involved	Location(s)	Frequency of engagement
Current and future investors			
Health, safety and impact on production	General	All regions	Quarterly, as well as regular presentations, notices and meetings throughout the year
Achievement of 2014 equity ownership targets	General	South Africa	Investor presentations and releases, as well as meetings around Mining Charter compliance
Uncertainty around mining rights and security of tenure	General	South Africa, Ghana, Peru	As requested
Labour intensity and productivity levels at our underground operations	General	South Africa	Quarterly, as well as regular presentations, notices and meetings throughout the year
Union activity, including strike action at our South African operations in June 2011	General	Ghana and South Africa	As requested and notices where relevant
High energy prices and threats to electricity supply	General	Australia, Ghana and South Africa	Quarterly, as well as regular presentations, notices and meetings throughout the year
Increases in taxes and mineral royalties	General	All regions	As requested and notices where relevant
Regulatory and reporting compliance (including King III, SEC, NYSE, etc.)	General	All regions	As requested and notices where relevant
Effective risk management (short-, medium- and long-term) and business sustainability	General	All regions	Quarterly, as well as regular presentations, notices and meetings throughout the year
2011*			
Impact of climate change regulation, including carbon taxes	General	Australia and South Africa	As requested and in regular presentations
Delivery on our advanced stage projects	General	All regions	Quarterly, as well as regular presentations, notices and meetings throughout the year
Impact of potential silicosis litigation on the South African mining sector	General	South Africa	As requested

* Entries marked as '2011' indicate 'new' stakeholder issues that have been identified during the course of 2011

Figure 2.11: Table of relevant and material issues raised by stakeholders and location in the Integrated Annual Review

Stakeholder issues	Stakeholders involved	Location(s)	Frequency of engagement
Unions and employees			
Improved safety performance and two-way engagement between managers and mining teams	National Union of Mineworkers, Solidarity and the United Association of South Africa	South Africa	At mine level – daily, weekly and monthly. At senior level at least twice a year
Increased remuneration across the workforce, including strike action at our South African operations in June 2011	Ghana Mineworkers' Union and National Union of Mineworkers	Ghana and South Africa	Wage increases discussed every two years in South Africa, and annually in Ghana
Improvements to high-density accommodation and management of challenges around the payment of living out allowances	National Union of Mineworkers	South Africa	Regular interaction at mine level and during remuneration negotiations (see above)
Provision of internationally competitive remuneration and benefits packages	Managers and engineers	All regions	Regular engagement as part of routine human resources procedures
Workforce transformation, including Ghanaian nationals, Historically Disadvantaged South Africans and women	General	Ghana and South Africa	Regular engagement during routine union meetings
Employee access to Voluntary Counselling and Testing (VCT) and Highly Active Anti-Retroviral Treatment (HAART)	General	South Africa	Regular engagement during routine union meetings
2011*			
Employee Share Ownership Plan (ESOP)	General	South Africa	Union representation on ESOP Trust
Governments			
Empowerment, transformation and adherence to the revised Mining Charter	Department of Mineral Resources (DMR), Parliamentary Sub-Committee on Mineral Resources	South Africa	Frequent, close cooperation, including participation in the Mining Industry Growth, Development and Employment Task Team (MIGDETT) and presentation to Parliament
More effective safety management to eliminate fatalities and serious injuries	Mine Inspectorate of the DMR	South Africa	Frequent, close cooperation throughout the year, including guidance on meeting 2013 Health and Safety Milestones
Energy efficiency and supply	Relevant energy departments, the Electric Company of Ghana, the Volta River Authority and Eskom	Ghana and South Africa	Regular engagement throughout the year, including through the Energy Intensive Users Group, the South African Chamber of Mines and directly
Enhanced taxation and royalty payments amid high commodity prices and weak public finances	Relevant finance departments	All regions	At least once/twice a year through local Chambers of Mines, and directly and more frequently where required
Effective water management and regulation, including water quality, availability and compliance	Relevant environmental departments and water utilities	All regions	Regular engagement through routine water quality monitoring and high level engagement through local Chambers of Mines
Approval of mining and other permits	Relevant government departments	All regions, including Resource Development and Feasibility projects	Engagement as required

Figure 2.11: Table of relevant and material issues raised by stakeholders and location in the Integrated Annual Review

Stakeholder issues	Stakeholders involved	Location(s)	Frequency of engagement
Governments (continued)			
Disclosure and management of carbon emissions, including carbon taxation	Australian Department of Climate Change and the South African Department of Energy	Australia and South Africa	Formal submission and engagement, directly and through relevant business organisations
Enhanced transparency around payments in mineral value chains, as well as the sourcing of conflict minerals	Government of the United States	All regions	At least once/twice a year via the World Gold Council
Reducing the risk of future Acid Mine Drainage from closed mines in the West Wits Rand area	Department of Water Affairs	South Africa	Frequent engagement throughout the year, in some cases monthly – both directly and via the South African Chamber of Mines
Native title and traditional heritage issues	Department of Indigenous Affairs, Government of Western Australia	Australia	As required, including registration of identified heritage sites
Environmental impact of mining activities	Environmental Protection Agency	Ghana	At least once a year
2011*			
Trespass of artisanal and small-scale miners at our Damang mine	Regional and national government, including public security services	Ghana	Engagement as required
Local communities			
Generation of direct employment opportunities for local people	Local communities at Damang and Tarkwa in Ghana, the El Tingo and Hualgayoc communities in Peru, the West Rand communities in South Africa, communities around Yanfolila (Mali), Chucapaca (Peru) and Far Southeast (Philippines)	Ghana, Peru, South Africa and exploration locations	Frequent engagement throughout the year, in some cases weekly
Maintenance of local water quality through pollution control, infrastructure development and community monitoring	Tarkwa communities in Ghana, the El Tingo and Hualgayoc communities in Peru, communities in Mankayan in the Philippines and the West Rand communities in South Africa	Ghana, Philippines, Peru and South Africa	Regular engagement throughout the year
Broader access to socio-economic development programmes, including education and healthcare services, as well as agricultural support programmes	General	Ghana, Peru, South Africa and exploration locations	Regular engagement throughout the year, in some cases monthly

Figure 2.11: Table of relevant and material issues raised by stakeholders and location in the Integrated Annual Review

Stakeholder issues	Stakeholders involved	Location(s)	Frequency of engagement
Local communities (continued)			
Identification and protection of indigenous heritage	Indigenous communities near the Agnew mine	Australia	As required
Management of the impact of mining activities on local farming, including compensation and resettlement	Local communities at Damang and Tarkwa in Ghana, and communities around South Deep mine in South Africa	Ghana and South Africa	Frequent engagement throughout the year, in some cases weekly
2011*			
Artisanal and small-scale mining activity on lease areas	Communities at Damang and the Yanfolila project, Mali	West Africa	Regular engagement and as required
Granting of Free Prior and Informed Consent (FPIC) for mining activities from indigenous communities	Kankana-ey communities in Mankayan	Philippines	Regular engagement
NGOs and Associations			
Water quality at Gold Fields operations, including specific concerns around Acid Mine Drainage and uranium pollution	Wonderfonteinspruit Action Group, Federation for a Sustainable Environment	South Africa	At least twice a year
Preservation of biodiversity inside and outside our concession areas	Ghana Wildlife Society, Leadership for Conservation Africa	Ghana	Regular participation on LCA Ghana steering committee
Carbon disclosure and management	Carbon Disclosure Project	Australia, South Africa	Once a year
Prevention of 'conflict gold' from entering the global gold value chain	World Gold Council	All regions	As required
2011*			
Water quality/availability, land stability and local economic development	Various civil society groups in Mankayan	Philippines	Comprehensive and on-going engagement

3. Optimising our operations

‘Optimising our operations’ means bringing our attributable Mineral Resources of 217.0 million gold equivalent ounces and attributable Mineral Reserves of 80.6 million gold equivalent ounces to account in a way that is cost effective, safe and environmentally responsible. Gold Fields has eight world-class mines. It is fundamental to the attainment of Group strategy for each mine to produce to its potential and maintain stability, predictability and consistency. In particular, our focus is on:

- Pursuing ‘Zero Harm’ through the Group's Safe Production philosophy, with a particular focus on a safe and healthy working environment and the development of a safe working mentality amongst employees
- Maximising the operational potential of our mines, through investment in mechanisation, infrastructure development, mining flexibility and ore reserve development
- Minimising our environmental impact, by effectively managing our pollution risks, energy consumption, carbon emissions and closure-planning

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- The Gold Fields safety promise ..... Page 56
- Respecting and protecting the environment ..... Page 61
- Regional overview: Australasia ..... Page 72
- Regional overview: South Africa ..... Page 78
- Regional overview: South America ..... Page 88
- Regional overview: West Africa ..... Page 92

Highlights

25%
Group Notional Cash Expenditure (NCE) margin – in line with long-term target

US$159m
Savings through Business Process Re-engineering during 2011

17%
Energy savings in South Africa by end-2011 (against 2007 baseline)

Trucking ore at Damang, Ghana

3.1 Ensuring our mines deliver

During 2011, we maintained our equivalent attributable production at 3.5 million ounces of gold (2010: 3.5 million ounces), despite slightly lower production from KDC and Beatrix, by:

- Increasing our percentage interest in our Ghanaian and Peruvian operations (p118), which raised our attributable production for 2011 by 133,000 ounces
- Increasing production in the Australasia region to 659,000 ounces (2010: 620,000 ounces)
- Maintaining production at South Deep in South Africa at 273,000 ounces (2010: 274,000 ounces)

Increased production outside of the South Africa region has further advanced Gold Fields status as a truly global company. In 2011, the output ratio with respect to our non-South African and South African operations was 51:49 (2010: 47:53), moving us closer to our targeted 60:40 production ratio.

Looking to the future, our Goal of having 5 million quality ounces in development or production by 2015 relies on:

- Broadly stable production at our mature KDC and Beatrix underground mines in South Africa
- Completion of our South Deep project, which aims to achieve an annual production run rate of approximately 700,000 ounces by end-2015
- Development of near-mine organic growth opportunities in our Australasia, South America and West Africa regions
- A strong growth pipeline headed by four advanced stage projects that are expected to reach development decisions within the next 12 to 36 months (p112-118)

Production growth and diversification are not ends in themselves, however. We must also continue to deliver value. In 2011, this was reflected in a range of measures, including:

- Notional Cash Expenditure (NCE) margin, which rose strongly to 25% (2010: 16%)
- Ounces produced per share, which dropped marginally to 0.0048 ounces (2010: 0.0049 ounces)

Our performance took place in a context of substantial and ongoing investment in the construction and development of our South Deep mine.

Finally, our production growth – and value creation – must be sustainable. Whatever we do now must not compromise our long-term performance, but must instead support the delivery of our Group strategy.

Cerro Corona, Peru

3.1.1 Group operational performance

Figure 3.1: Attributable gold production ('000oz)

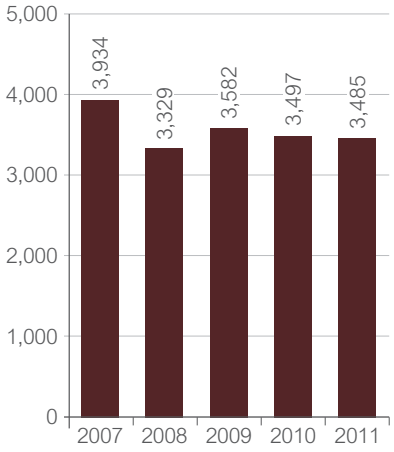


Figure 3.2: Total cash cost (US$/oz)

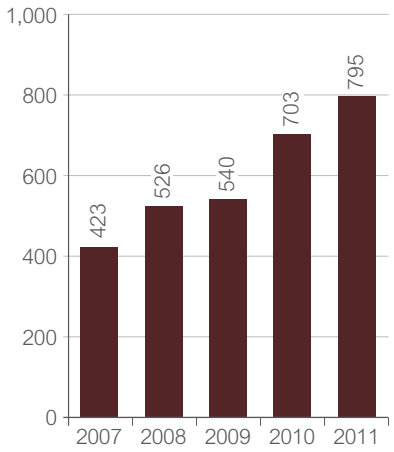


Figure 3.3: NCE margin (%)

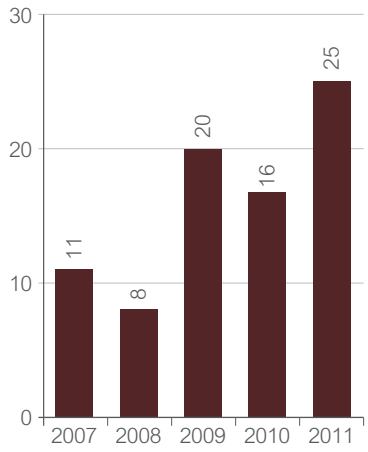


Figure 3.4: Group operational performance

Key operating statistics	2011	2010	2009	2008	2007
Gold produced – attributable (kg)	108,408	108,802	111,421	103,541	122,367
Gold produced – attributable ('000oz)	3,485	3,497	3,582	3,329	3,934
Total cash cost (R/kg)	184,515	165,526	146,456	138,665	95,846
Total cash cost (US$/oz)	795	703	540	526	423
Notional Cash Expenditure (R/kg)	272,224	239,796	210,215	210,827	139,796
Notional Cash Expenditure (US$/oz)	1,173	1,019	776	800	618
Gold price (R/kg)	364,216	287,150	261,517	228,160	157,275
Gold price (US$/oz)	1,569	1,220	965	865	695
Operating profit (Rm)	21,112	14,469	13,589	9,427	7,568
Operating costs (Rm)	21,312	20,082	18,368	16,026	12,947
Operating margin (%)	50	42	43	37	37
NCE margin (%)	25	16[1]	20	8	11

[1] Restatement – previously reported as 17%

Damang, Ghana

3.2 Our approach to operational excellence

3.2.1 Achieving efficiencies through business re-engineering

Gold Fields has implemented comprehensive Business Process Re-engineering (BPR) programmes in our Australasia, South Africa and West Africa regions. BPR involves the optimisation of our mines' organisational and cost structures, infrastructure footprint and production processes – from the stope to the mill, with the ultimate aim of achieving an NCE margin of 20% at each mine in the short-term and 25% in the medium to long-term. This has entailed a focus on operating costs, the rationalisation of mine and regional overhead cost structures and a review of the mine-to-mill process.

Australasia

In 2011, we continued to implement a number of actions to help drive down costs and improve production efficiency. Efforts included:

- Transition to owner-operation at both of our Australian mines (underground only at St Ives)
- The rehabilitation and upgrading of our heap leach processing infrastructure to de-risk our future production profile
- The introduction of improved short-term interval controls on haulage to increase levels of ore trucked from underground and surface open pits

Figure 3.5: Total cash cost (US$/oz) – Australasia region

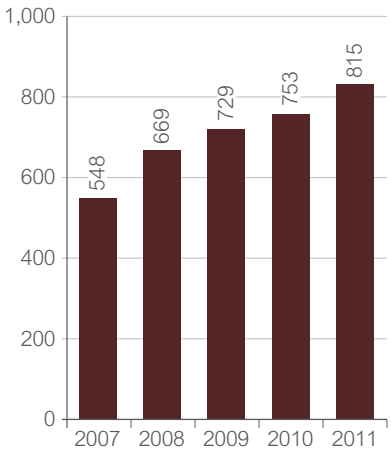
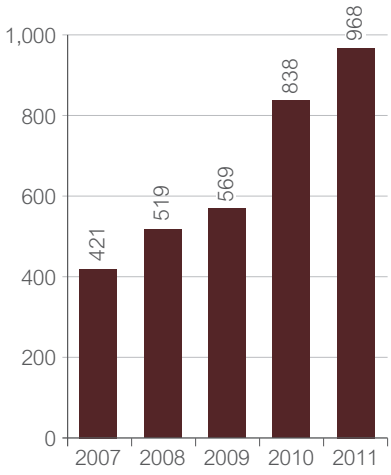


Figure 3.6: Total cash cost (US$/oz) – South Africa region



- Enhanced management of mill feed and heap leach mixes
- Mine optimisation analysis to inform enhanced mine and equipment scheduling

South Africa

The nature of our mature, deep underground mining operations in South Africa means BPR has a particularly important role to play in protecting and improving our NCE margin in the region. Key initiatives include the following

Shaft Full Potential programme

This is aimed at improving quality mining volumes by increasing face advance by 5% to 10% each year – and to deliver the full potential of every available workface.

It is built around three key strategies:

- Processes and systems to manage safe production (including behavioural-based interventions (p57-59))
- Enhanced labour management to optimise the availability of in-stope crews (including appropriate mixes of skills)
- Training and procedures to improve the effectiveness of rock breaking (including improved advance per blast, better fragmentation and reduced dilution)

Developing Full Potential programme

This technology-based initiative, which aims to mechanise all flat-end development at KDC and Beatrix, has largely been implemented and will be embedded this year to achieve increased development. By doing so, we expect to improve safety, reduce development costs and deliver greater flexibility. During 2011, mechanised development accounted for 89% of flat-end development meters at KDC and Beatrix. Mechanised development has significantly improved our safety performance, but has not yet yielded the expected benefits in terms of increased development.

NCE Full Potential programme

The second phase of this initiative (previously known as Project 3M) was implemented in 2011. This builds on what has already been achieved during the first phase in 2010 – including the combining of the Kloof and Driefontein operations into KDC. Following the reduction in operating cost of R840 million delivered in 2011, the second phase aims to reduce costs at our mature KDC and Beatrix mines by a further R500 million (US$63 million) over the next two years – and improve our ability to absorb rising input costs.

During 2011, we took a range of measures under this programme, including:

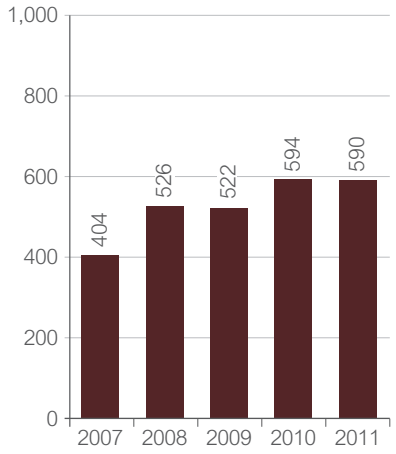
- Ongoing consolidation – and leveraging – of the KDC organisational merger
- Footprint reduction and optimisation, including both surface and underground infrastructure
- Initiatives to enhance crew productivity and accelerating off- and on-reef development
- Continued reductions in employee numbers through natural attrition and voluntary separation (p128)
- Enhanced supply chain management
- Energy efficiency initiatives (p50-51)

These savings have been achieved without any compulsory redundancies and without compromising our operational sustainability.

West Africa

BPR continues to play an important role at both Damang and Tarkwa, due to a number of cost challenges. These include a hardening fiscal environment (p155-156), rising waste stripping costs and increased hard ore production.

Figure 3.7: Total cash cost (US$/oz) – West Africa region



In 2011, we undertook a range of initiatives to address these issues. These include:

- Further advancement towards full owner-operation with the implementation of owner maintenance of heavy mining equipment to complement the owner mining status
- The commissioning of three new tertiary crushers to optimise our throughput at the Heap Leach facility
- Improved utilisation and availability of our mining equipment, including new shift patterns
- Optimisation of our mining fleet and reductions in fuel consumption
- The application of improved drilling and blasting techniques
- The renegotiation of major supply contracts

Together, these initiatives achieved savings and baseline improvements of more than US$40 million over the course of 2011. This did much to counter rising input costs.

Agnew, Australia

3.2.2 Improving energy efficiency and energy security

Rising energy costs and increased international emphasis on carbon management prompted us to task each of our regions to reduce their electricity consumption over the course of 2011. This was with the aim of reducing energy costs and improving energy security – without compromising production. This has the added benefit of reducing our carbon emissions; an increasingly important issue in the light of growing efforts to tax emissions or introduce cap and trade schemes (p68). It is in this context that we are developing a fully integrated Carbon and Energy Management Strategy for the Group (p66-67).

Given the increased depth of mining and lower grades, especially in South Africa, our efforts have been focused on limiting the rise in energy intensity at our operations. In South Africa electricity consumption fell by 3% in 2011, while the average energy consumption at our Australian mines was down by 5%.

Australasia region

In the Australasia region, relevant initiatives included:

- The upgrading of Agnew's entire ventilation system, using more energy efficient technologies
- Installing high efficiency and renewable energy lighting
- Ongoing piloting of efficiency-improving fuel additives at St Ives, as well as rationalisation of the mine's truck fleet
- Investigating pre-heating water for the elution circuit to reduce Liquefied Petroleum Gas (LPG) consumption and increase recovery at St Ives

Figure 3.8: Group direct and indirect energy consumption (terajoules)

Energy consumption	2011	2010	2009	2008
Direct	6,081	5,529	5,239	5,224
Indirect	19,691	20,089	19,676	18,669
Total	25,772	25,618	24,915	23,893

Australia's Energy Efficiency Opportunities Act 2007 requires that both mines report to the Department of Resources, Energy and Tourism. Their submissions list a number of energy efficiency opportunities, including:

- Achieving a possible 30% saving on air-conditioning running costs through the replacement of all hydrofluorocarbon refrigerants
- Initiation of the in-pit tailing storage facility at St Ives, considerably reducing electricity costs
- Rolling-out energy mass balance tools to accurately measure energy usage and waste in mining and processing facilities

Both of our mines in Australia face strategic challenges around energy costs and supply. With our current electricity supply contract with BHP Billiton due to expire in 2014, the nature of the Western Australian gas market means alternative arrangements are likely to entail significantly higher prices. During 2011 we completed a feasibility study examining the different energy supply options available to us – including contract renewal, potential self-generation and the development of a large scale wind-energy project on Lake Lefroy at St Ives (p68). Negotiations with BHP Billiton are ongoing and will help determine the final outcome.

Future increases in energy prices could have a significant impact on the economics of our mines. In particular, higher electricity prices may increase our focus on production from open pit and shallow underground sources, which are less dependent on electricity for ventilation, pumping and drilling.

South Africa region

Electricity accounts for 95% of our energy consumption in the South Africa region. Plans by public energy utility Eskom to significantly raise electricity prices over the next three years – as well as concerns around security of supply – makes reducing electricity consumption a priority. Indeed, the nature of our mature, deep-underground mines means this is an essential component in the South Africa region's long-term operational sustainability.

It is in this context that our BPR programme in South Africa is targeting reduced energy consumption of around 5% in 2012. This will build on a 17% reduction in electricity consumption already achieved between 2007 and 2011. Although this will not fully negate the impact of Eskom's price increases, it will reduce the risk of production losses as a consequence of higher pay-limits.

Relevant initiatives included:

- Introducing enhanced systems for compressor management to improve efficiency and reduce operational time in line with requirements for compressed air
- Optimisation of our pumping using automated monitoring systems to control efficiency, maintenance and replacement
- Optimisation of our surface refrigeration plant through the use of an energy management control system

In addition, we are investigating opportunities for the development of 'compressed air-less' mines, using hydraulics and electricity to power drilling and other activities (thus avoiding the significant latent power wastage of pneumatic systems).

Plans are also being finalised for the implementation of an ice-based underground cooling system at KDC to reduce pumping demands. The higher cooling potential of the ice means much less water needs to be pumped back to surface. In addition, solid ice is less prone to warming than water as it gains kinetic energy during its descent (i.e. the Joule Thompson effect). Application of this technology is expected to achieve average savings of up to 10MW per year. Plans are also in place for its application at South Deep by 2015.

We are continuing to work with Eskom in the pursuit of further energy efficiency and energy security measures. These are being financed with the help of around R200 million (US$28 million) from Eskom's Demand Side Management (DSM) programme. This includes, for example, high-efficiency auxiliary fans at KDC to replace our existing 45kW auxiliary fans. Following a pilot, we have placed an order for 1,000 units, which have been shown to use 30% less electricity than the existing fans. These will be fitted at KDC, South Deep and Beatrix. Collectively they are expected to save 13MW per year.

Our engagement with Eskom on wider issues, such as the security of supply and tariffs for the mining industry, is conducted through the Energy Intensive Users Group and the South African Chamber of Mines.

Case study

Pioneering energy-efficient fan technology in South Africa

Find out more online

The safety implications of a potential cut in power at our operations means Eskom will only apply a modest curtailment of supply to our operations during load-shedding, instead of a total suspension. This means the worst electricity security risk we face is a 20% reduction in supply for the duration of an Eskom supply shortage, rather than a full shutdown.

www.eiug.org.za
www.eskomidm.co.za

West Africa region

Our West African operations also took steps to address their electricity costs, which rose by 54% during 2011. This was partly due to rising demand within the wider Ghanaian economy, a reduction in the availability of hydro-generated electricity to deregulated mining companies and increased reliance on costlier thermal-generated power. During 2011, we negotiated – both bilaterally and through the Chamber of Mines – with the Electricity Company of Ghana (ECG) and the Volta River Authority (VRA) over future supply options and tariff structures.

Damang experienced a number of power supply interruptions in 2011, due to weak local power infrastructure and severe weather events. As a result, the mine has on occasion been required to rely on its on-site diesel back-up generators, resulting in an average loss of production of 1,000 ounces a quarter. The ECG has provided assurances as to the reliability of our future supply and we are enhancing our power generation capacity to mitigate the impacts of any future outages.

Our energy strategy continues to be informed by the ongoing identification of large ore bodies at Damang, which is expected to significantly expand its life of mine from 2018 until 2024 (p114-115). We are examining, for example, the potential for generation from waste gas, supplied by independent power producers. In addition, we are also in the process of developing future renewable energy sources, with a focus on biomass and solar energy.

During 2011, our West African operations, which consume around 100 million liters of diesel each year, also faced a 25% increase in fuel costs. As a result, energy efficiency efforts were primarily focused on their respective truck fleets – including enhanced maintenance, utilisation of high quality fuel and the installation of more efficient fuel filters.

www.ecgonline.info
www.vra.com

3.2.3 Investing in efficient processing

We are making constant efforts to improve the efficiency of our conventional processing circuits – in terms of cost, reliability and recovery. During 2011, this included:

- The commissioning of three new tertiary crushers at our North Heap Leach Facility at Tarkwa to improve recovery rates in the face of harder ore feed blend
- The 'bedding-down' of our new High Pressure Grinding Rollers (HPGRs) at Tarkwa

In addition, we are planning to install a secondary crusher at Tarkwa's CIL plant in early 2012 to mitigate the impact of an increase in ore hardness with pit depth.

Damang, Ghana

Externally-developed processing technology

We are also applying externally-developed processing technology to both enhance our long-term production at KDC, and to improve potential recovery rates at our Arctic Platinum Project (APP) in Finland (p112-113).

At KDC, we commissioned the innovative Gold Recovery Opportunities from Waste Treatment Holistically (GROWTH) Project. This uses the transportable 'Python' gravity concentration plant to process low-grade surface rock dumps. Together with automated Optical Ore Sorting of the reef fraction, this significantly enhances the gold grade – at relatively low cost. As part of our Long-Term Processing Strategy for South Africa (LTPSSA), we are installing an additional Python plant, which will free-up one of our existing surface plants (DP3) to process lower-grade historic tailings instead of waste rock.

The ultimate aim of the LTPSSA is to expand our Python capacity to the point where the remaining two plants that process waste rock dumps (DP2 and KP1) instead reprocess tailings, which will be re-deposited at our Centralised Tailings Storage Facility (p64-65). This is expected to de-risk our future production profile and reduce the rate of production decline, minimise costs and assist with the minimisation of our final closure liabilities. Beyond this, we are looking at the potential installation of Python plants underground to further reduce processing costs.

At APP, we have been piloting the application of Platsol® processing technology to improve metal recovery during hydrometallurgical processing of concentrates produced from conventional floatation.

The results of the bulk-level pilot have confirmed significant improvements to overall recovery of 20% – which has had a significant impact in terms of the potential feasibility of this otherwise relatively marginal project.

What is Platsol®?

Platsol is a patented technology developed to process platinum group metal sulphide floatation concentrates. It leaches base and precious metals in a single process using oxygen in sulphate media under total oxidation conditions. It keeps platinum group metals in solution, whilst rejecting base metals.

Case study

The GROWTH project: Unlocking value from waste rock

High gold prices have presented Gold Fields with new opportunities to unlock value from the gold reserves in low-grade surface rock dumps (SRDs) at its KDC mine in South Africa. During 2011, Gold Fields launched the Gold Recovery Opportunities from Waste Treatment Holistically (GROWTH) project to provide a cost effective and energy efficient method for processing these reserves. The GROWTH project uses a fully mobile, modular unit known as the 'Python' gravity concentration plant. One of these plants has been installed at KDC East and during 2011 processed about 140,000 tonnes of waste rock per month, producing a monthly average of 56kg of gold. A proposed plant upgrade will see the plant processing around 153,000 tonnes of waste rock and producing around 92kg of gold a month.

Two additional Python plants are scheduled for installation at KDC in 2012 to support Gold Fields Long-Term Processing Strategy for South Africa (LTPSSA). This will free up one of KDC's existing surface plants to retreat historic tailings, which are more suited to conventional processing methods. The ultimate aim of the LTPSSA is to expand Python capacity to the point where the remaining two plants that currently process waste rock dumps reprocess existing tailings instead. Once full Python capacity has been installed, these reprocessed tailings will be re-deposited at Gold Fields proposed Centralised Tailings Storage Facility (CTSF) near South Deep's existing Doornpoort TSF (p64-65). In addition to bringing forward extra ounces at reduced cost, the LTPSSA will also minimise final closure liabilities by transferring tailings from dolomitic land (i.e. the location of some of Gold Fields current and historical TSFs) onto competent geological sub-strata (i.e. the location of the CTSF).

Gold Fields has approximately 15 million tonnes of SRDs at KDC, which will take about three years to process, though a programme is underway to verify volumes of other waste rock dumps that could add to the total available for processing. Beyond this, Gold Fields is investigating the potential installation of Python plants underground. This would remove the substantial costs associated with transporting waste rock to surface. It would also allow for processed waste rock and tailings to be used underground as backfill, reducing wastage and minimising Gold Fields surface footprint.

In January 2012, Gold Fields and Gold One International announced that they have entered into a Memorandum of Understanding to investigate the viability of concurrently reprocessing their combined surface tailings deposits, located on South Africa's West Rand (p65).

Proprietary processing technology

Gold Fields has two proprietary processing technologies that have the potential to significantly improve processing efficiency and recovery rates – both for the company and for the wider sector:

- ASTER™ is a biologically-based process, which removes cyanide and thiocyanate from residue streams after the leaching process. This offers important benefits in terms of environmental stewardship, water management, efficiency and safety (63-66). We are examining its potential application in both Ghana and Peru
- BIOX® is a process used to pre-treat refractory sulphide gold ores to increase gold recovery rates. There are a total of 10 gold processing plants using the technology under licence in South Africa, Ghana, Peru, China, Kazakhstan, Uzbekistan and Australia. Although not currently in use at our own operations due to the nature of our ore bodies, we are investigating its potential application at Cerro Corona and Chucapaca in Peru

www.gekkos.com

Case study

Enhanced cyanide management through ASTER™ process technology

Find out more online

South Deep, South Africa

Case study

BIOX® process technology: Creating commercial opportunities from refractory ore

High gold prices and globally depleting levels of oxide ore mean that harder-to-process refractory ore bodies are playing an increasingly important role in global gold production. This dynamic is creating new opportunities for the commercial application of BIOX®. This proprietary Gold Fields technology is licenced to third-parties for the pre-treatment of refractory sulphide gold ores, prior to conventional cyanide leaching.

Refractory ores are naturally resistant to standard recovery methods, as the gold is 'locked' within sulphide minerals that inhibit leaching. BIOX® uses naturally occurring bacteria to destroy these sulphide minerals and expose the gold for subsequent cyanidation. Recovery rates for refractory ore typically run at less than 70%. After treatment with BIOX®, however, recovery rates can be as high as 97% – depending on ore characteristics. In addition, the limited environmental impact of BIOX® makes it fully compliant with ever stricter environmental standards around the world.

There are currently 10 BIOX® processing plants in operation in seven countries worldwide, with additional opportunities being explored in the Philippines, Colombia and China – amongst others. Gold Fields portfolio does not currently contain any refractory ore bodies, but opportunities are being explored for the application of BIOX® to recover residual gold in low grade pyrite at its Cerro Corona mine in Peru.

Development of Generation 4 of BIOX® is ongoing and focuses on improving the energy efficiency of the process, enhancing the durability of the tank agitation and bacterial consortium, and achieving a 15% reduction in capital and operating costs. The full roll-out of Generation 4 is scheduled for 2014, whilst many of the planned improvements will be incorporated into Generation 3 of BIOX® within the next two years.

www.goldfields.co.za

KDC, South Africa

South Deep, South Africa

South Deep, South Africa

3.2.4 Pursuing innovative and high quality mining

Driving Group-wide best practice

In 2011, we completed a significant reorganisation that resulted in the creation of the Group Technical Services (GTS) function. GTS enjoys a well-resourced team covering the core technical disciplines of Mineral Resource Management, Engineering, Mining, Geotechnical, Metallurgy, Energy and Carbon Management, and Technology and Innovation. It is specifically intended to work with our operations and regional technical functions to:

- Ensure appropriate strategic focus for the technical disciplines
- Provide thought-leadership and technical support to the regions
- Manage Group risks through technical reviews
- Promote best technical practice
- Enhance technical talent management
- Prioritise technology implementation and innovation

GTS is expected to play a key role in driving us towards our Goal of 5 million ounces in production or development by 2015 and in supporting the execution of our international growth projects (p112-118).

During 2011, GTS carried out technical reviews of our 2012 operational and life of mine plans to ensure that our long-term plans and the resulting strategic initiatives have both rigour and integrity. GTS is also examining opportunities for the adoption of Group-wide mine management, planning and reporting software. This will help ensure that each of our regions operates as part of a cohesive global group by driving flexibility between operations, enhanced movement of personnel and more homogeneous decision-making.

As part of this reorganisation, we also established a Group Technology and Innovation Steering Committee, with representation from all of the regions and capital growth projects.

This aims to disseminate technological innovation across the Group and to improve the take-up and transfer of off-the-shelf technologies. It also aims to develop new technologies, where relevant, and to build collaborative partnerships with third parties to accelerate technology development and implementation. GTS is also represented on the Capital Projects Steering Committee to support the successful execution of our major growth projects (p112-118).

Innovative mine development at South Deep

The scale, depth and positioning of the South Deep ore body raises a number of unique technological challenges. Successful development of this mine will underpin the long-term commercial sustainability of our South Africa region – and will take production beyond 2050. As a result, we have made considerable investments to meet these challenges. These include:

- The application of fully mechanised, deep underground mining, which has significantly improved productivity and reduced employee exposure to fall-of-ground and heat
- Accelerated implementation of the horizontal de-stress cut methodology is speeding up the rate at which we can open up the ore body. This mitigates risks associated with the geotechnical stress regime and will improve future production volumes
- Establishment of a specialised, on-site training facility, using advanced training packages and electronic simulators to produce a cadre of world-class underground mechanised miners. This is expected to be commissioned in early 2012
- The maximisation of existing hoisting capacity through the refurbishment and conversion of the linked South Shaft complex

Once complete, South Deep will represent the first of a new generation of sustainable, deep underground mines in South Africa and will constitute the foundation for the region's long-term role in our production portfolio.

Case study

South Deep installs award winning steel headgear

Find out more online

Remote mechanised mining in Australia

Mechanised underground mining is already well established at Agnew and St Ives. We are now moving towards the next phase of innovation, which is mine automation.

Agnew is already piloting the use of an automated loader (controlled by a surface operator), as well as an automated drill-rig. At St Ives, we are laying the ground for the implementation of this technology, including examination of the potential for remote-bogging, which would allow for the quick clearance of post-blasting areas and make productive use of shift handovers.

The rolling out of automation technology – which has the potential to allow employees to carry out their work in remote locations – would mark a major step-change and is likely to require significant time and investment. Nonetheless, it has the potential to significantly reduce the safety hazard exposure of our employees, minimise handover times and enhance productivity. It also has the potential – for example through remote operation from Perth – to transform labour dynamics, which are currently dominated by the short-term physical movement of workers via the highly competitive 'fly-in, fly-out' Western Australian labour market (p130-131).

We have already installed the necessary fibre optic technology and bandwidth at Agnew as a first step in this direction – and plan to implement a regional automation programme in 2012.

3.3 The Gold Fields safety promise

Our promise that "if we cannot mine safely, we will not mine" reflects our prioritisation of employee safety and wellbeing. This is primarily driven by our moral imperative to protect those who work for us – as well as the need to protect our reputation and avoid operational disruption. Our approach is based on the pursuit of 'Zero Harm' and is driven by our determination to prove that deep underground gold mining can – when properly managed – be carried out safely.

We will choose to leave gold in the ground rather than putting our employees at risk. Over the last three years we have written-off about 2 million ounces of high-grade reserves due to safety concerns. We are confident that this is both the right thing to do – and will pay longer-term reputational and operational returns.

The challenge is both significant and ongoing. During 2011, there were a total of 20 workplace fatalities at Gold Fields – 19 of which took place in South Africa. Regretfully, this marked a regression on 2010, during which we had 18 fatalities. This has given fresh impetus to our efforts to eradicate fatality risks in our operations – and highlights the need for constant and proactive vigilance. Our approach has shown some encouraging results, as only two of these 20 fatalities occurred in the final five months of 2011. Despite the short-term regression during 2011, our longer-term trend continues to be downwards – with an average 9% decline a year in fatalities since 2008. We are committed to further improving this trend.

Figure 3.9: Group safety performance

Group	2011	2010[1]	2009[1]	2008
Fatalities	20	18	26	31
Lost Time Injury Frequency Rate	4.69	4.39	3.91	5.34
Fatal Injury Frequency Rate	0.12	0.11	0.16	0.16
Medically-Treated Injury Frequency Rate	5.68	7.16	8.91	13.50

3.3.1 Safety performance in 2011

We set ourselves a target of reducing all our safety indicators (i.e. FIFR[2], MTIFR[3] and LTIFR[4]) by 25% in South Africa during 2011– and by 20% in our Australasian, South American and West African regions. Though our long-term safety performance is showing improvement, our performance in 2011 has been mixed:

- In South Africa, LTIFR rose by 10%, MTIFR fell by 17% and FIFR increased by 14%
- In Australasia, LTIFR fell by 31%, MTIFR fell by 53% and FIFR remained at zero
- In South America, LTIFR increased from 0.00 to 0.18, MTIFR fell by 41% and FIFR remained at zero
- In West Africa, LTIFR fell by 57%, MTIFR fell by 41% and FIFR remained at 0.04

3.3.2 Safety management

Although safety remains a priority in all of our regions, the higher risks posed by our more labour intensive, deep underground operations means we place particular focus on safety management in South Africa. The South Africa region accounted for 95% of fatalities in 2011 (2010: 94%). Of these, fall of ground incidents – whether resulting from gravity or seismic activity – accounted for 63% (2010: 53%).

Our operations in South Africa are supported by a range of safety management measures that fall under our Safe Production Management Programme (SPMP).

Figure 3.10: Group LTIFR, FIFR and MTIFR performance

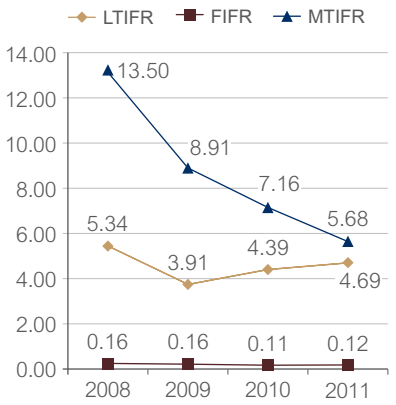
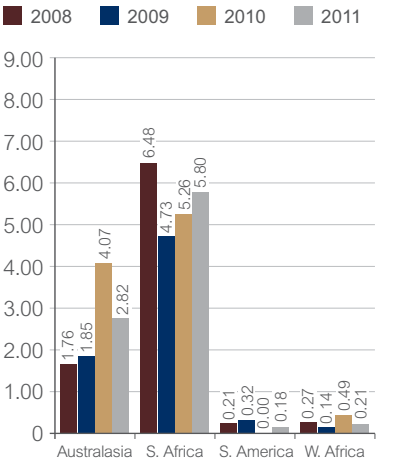


Figure 3.11: LTIFR by region[5]



[1] Restatement – figures for 2009 and 2010 previously reported as 3.81 and 4.38 respectively. FIFR for 2009 previously reported as 0.14. MTIFR for 2009 and 2010 previously reported as 8.91 and 7.09 respectively. Please see p4 for explanation

[2] Fatal Injury Frequency Rate

[3] Medically-Treated Injury Frequency Rate

[4] Lost Time Injury Frequency Rate

[5] Restatement – 2009 and 2010 figures for Australasia previously reported as 1.18 and 4.08 respectively; 2009 figure for South Africa previously reported as 4.54; 2009 figure for South America previously reported as 0.00; 2010 figure for West Africa previously reported as 0.44. Please see p4 for explanation

The SPMP aims to:

- Achieve a safe mining culture that is in total compliance with our safety standards and procedures – including our Group-wide Safe Production Rules
- Create a safe mining environment by engineering-out safety risks
- Improve the safety performance of employees through our wellbeing programmes

As part of the SPMP, our high-level Safety and Health Production Management Task Team monitors safety management and performance. The Task Team includes two members of our executive committee and is chaired by the Executive Vice President of the South Africa region. The Group CEO also attends the quarterly SPMP meetings.

A particular focus of our efforts is the mitigation of fall-of-ground and seismic-related incidents through initiatives such as centralised-blasting, pre-conditioning, selective cessation of night-shifts and continuous improvement and innovation in seismic monitoring.

Despite these efforts, as well as closer cooperation with the Mining Inspectorate of the DMR, in 2011 we experienced a total of 75 safety stoppages in South Africa, some of them self-imposed. It is estimated that this resulted in the loss of around 52,500 ounces of production – highlighting the close relationship between strong safety management and continuity of production.

By comparison, the relative safety risks posed by our Australasian, South American and West African operations are lower. This is due to:

- Higher levels of mechanisation and shallower depths at our underground operations in Australia, which reduces employee exposure to fall of ground
- The reduced risks associated with open pit mining in Ghana and Peru, with vehicle accidents and hand injuries accounting for most safety incidents

Despite this, our contractor fatality at Tarkwa demonstrates that continued vigilance in these regions remains essential.

All of our operations are certified to the OHSAS 18001 international safety management standard.

www.dmr.gov.za
www.bsigroup.com

3.3.3 Achieving a safe mining culture

We are actively countering perceptions around the 'latent' dangers of underground gold mining through the promotion of a 'Safe Production Mentality'. This is based on instilling the belief amongst employees that mining can – if approached in the right way – be carried out without the need for exposure to risks.

This is supported by our ongoing enforcement of our Safe Production Rules, as well as constant promotion of our 'Stop, Think, Fix, Verify and Continue' practice.

South Africa

In South Africa, the SPMP is continuing to help transform the safety mentality of our employees through high quality, two-way engagement. It is vital that we collectively achieve this transformation, as a significant proportion of serious safety incidents and fatalities continue to result from risky behaviour, non-compliance with standards or inadequate supervision/ leadership – rather than exogenous factors such as fall of ground. In 2011, for example, 37% of our fatalities resulted from non-fall of ground incidents (2010: 47%).

We are continuing to implement a range of activities aimed at cascading our Safe Production philosophy throughout the entire workforce.

What are the impacts of a mine-wide safety stoppage?

Mine-wide safety stoppages are imposed in the event of a fatality under Section 54 of South Africa's Mine Health and Safety Amendment Act 2008. This allows time for the investigation of the relevant incident. In addition, it acts as an administrative incentive to avoid fatalities due to the loss of production incurred during such a stoppage. It is estimated, for example, that each stoppage halts production for two days and it can take up to a week to restore full production.

What is the OHSAS 18001 standard?

OHSAS 18001 is an internationally-recognised standard that guarantees an organisation has implemented an occupational health and safety management system. This must incorporate a number of elements including, amongst other things:

- Risk assessment
- Definition of health and safety policy
- Implementation of a safety management system (including indicators)
- Technical and regulatory assessments
- Training
- Establishment of a health and safety committee
- Internal auditing
- Certification is subject to third-party auditing

Relevant new initiatives introduced in 2011 include:

- Rolling out the practice of removing crews, which are experiencing safety problems, from the workface for a day to deliver high quality safety training to all operations
- The continued holding of operation-level Indabas for two-way safety discussions between overseers, supervisors and crews – as well as the development of defined action plans
- Implementation of a mine-wide safety recognition programme to actively reward safe behaviour
- Implementation of a Supervisory Skills and Leadership Development programme to address a number of skills gaps identified through an internal audit – including those relating to safe production performance
- Compliance interventions, including implementation of a Priority Safety Disciplinary Case Procedure, increased inspection and audit activity, as well as a significant ramp-up in alcohol and drug testing

We also continued a number of similar, pre-existing behavioural-based initiatives, such as:

- Enhanced Safety Alarm questionnaires to help crews analyse actual safety incidents
- A Behavioural Safety Programme to encourage safety solidarity between supervisors and crews
- Monthly 'Shaft Communications' for operations and underground managers to engage the entire workforce

A consistent increase in 'Stop and Fix' stoppages by employees in South Africa (which average 1,000 per month) suggests these measures are starting to take effect. This illustrates the success of our 'Stop, Think, Fix, Verify and Continue' campaign, which is the practical application of our most important Value: 'If we cannot mine safely, we will not mine'.

Australasia and West Africa

During 2011, we continued to promote behavioural change in our other regions. In Australia, for example, this included the extension of our updated, psychology-based Zero Incident Process (ZIP) at St Ives – as well as the ongoing application of our three-year Going for Gold programme to improve performance, enhance safety management systems and improve safety management maturity. All working areas are expected to achieve an externally-audited top rating (i.e. 'Gold') by the end of 2014.

St Ives also progressed training on the Incident Causal Analysis Method, which is designed to de-personalise root cause investigation – and so help ensure the accuracy of analysis. Work was also initiated on a project to document physical capabilities for individual roles.

This is to ensure that pre-employment medical assessments adequately investigate individuals' capacity to do, without risk of injury, the job for which they apply.

In Ghana, we took specific measures to address the significant transition of contractor personnel into our workforce as a result of our move towards owner-mining. This included the participation of 97% of all of our employees in an industrial theatre campaign to help instil our Values – including our focus on safety. This was supplemented by the Yenshe Ase Foforo ('We Start Afresh') initiative, which was aimed at revisiting basic workplace safety practices.

Damang implemented the 'Walk the Talk' initiative, which promotes direct interaction between the mine general managers and the workforce on a weekly basis. Discussions focus on safety, costs and production – including updates on safety statistics and performance.

At Damang, we also continued to embed our 'safety referee' system, while consolidating our cross-departmental Fatal Risks Drive. This included the proactive management of the 10 highest identified risks, such as those relating to vehicle accidents, fire and conveyor belts, amongst others.

At Tarkwa, we maintained efforts to encourage employees to identify and address potential hazards under our existing Near Miss Hazard Reporting System. In addition, weekly visits by the management team focusing on physical conditions and workforce engagement have helped drive down injury frequency rates on the mine – with formal corrective action reviews established where relevant. The mine also implemented a 'Protect Your Hands' campaign, which has significantly reduced related injuries, as well as a dedicated Supervisors' Safety Training Course, which has been attended by 403 employees.

In addition – and in light of the single contractor fatality that took place at the mine in 2011 – Tarkwa placed particular focus on traffic safety. This included:

- Intensification of an ongoing traffic safety campaign, focused on regular road blocks, speed-checks, breathalyser-testing and driver training – as well as the engagement of public transport providers
- Implementation of on-board fatigue monitoring systems on our trucks to reduce tiredness-related accidents and improve operator awareness

Safety engagement

All of our employees receive both general and role-specific health and safety training during induction. This is supported through annual refresher training, risk-specific training (where required) and regular safety awareness campaigns. Relevant safety targets included in managers' Individual Balanced Scorecards determine approximately a third of their variable bonuses and incentives. This helps ensure that our safety policies and guidelines are 'mainstreamed' into everyday thinking and practice.

A total of 97% of employees in South Africa and 95% of employees in Ghana are represented through their unions at various levels on joint health and safety committees – and on a range of statutory and voluntary engagement forums between supervisors, line managers and organised labour.

Our ability to promote safe production is supported by the active involvement of our employee representative organisations and unions, host governments and regulators. This includes the Department of Mineral Resources (DMR) in South Africa, which continues to provide us with valuable guidance on how to improve our safety performance and meet their Mine Health and Safety Council health and safety milestones.

In February 2012 we held the Gold Fields Tripartite Health and Safety Summit, which involved our CEO, the Department of Mineral Resources and the President of the National Union of Mineworkers.

www.dmr.gov.za
www.num.org.za

3.3.4 Creating a safe mining environment

The 'engineering out' of safety risks at our deep underground mines in South Africa is a key senior management priority – as reflected by our comprehensive system of reporting to the Safe Production Management Task Team, the Safety, Health and Sustainable Development Committee and the Board of Directors.

New actions taken in 2011 in South Africa include:

- Region wide implementation of the Mining Industry Occupational Safety and Health (MOSH) leading practice for entry examination
- Full roll out of safety nets during the drilling shift to protect stope face employees from fall of ground hazards
- Elimination of night shifts, where the mining layout and configuration could result in elevated risk
- The rolling out of roof bolting to all stope panels, to supplement the pre-existing safety netting. Bolting has been completed at all up dip panels and wide raises, whilst bolting of all breast panels is due for completion in early 2012. This is specifically aimed at trying to prevent a resurgence in fall of ground fatalities
- Mechanisation of all of our flat-end South African development tunnels to improve productivity and reduce employee risk exposure
- Evaluation of auto-coupling and guard communication systems to reduce tramming-related risks, as well as the initiation of work to introduce proximity warning systems

These measures are in addition to our existing efforts to 'engineer-out' health and safety risks, including:

- The implementation of fully mechanised production at South Deep to improve production performance and reduce employee exposure to the safety risks posed by this deep level mine
- Implementation of 'Project 31' to reduce workplace temperatures to 31.0°C or less (32.5°C in trackless operations)
- Implementation of 'Project 10' to reduce exhaust column leakage to below 10% for conventional development ends and below 20% for trackless operations

We have already achieved a significant degree of compliance against these measures. In addition, our Seismic Task Team continues to play a leading role in minimising underground risks within our existing operations, by pre-warning mining teams of potential seismic-related fall of ground and enhancing our blasting scheduling and techniques to minimise safety risks. The positive impact of the Seismic Task Team remains evident.

Although there was a short-term increase in fatal seismic fall of ground incidents from 0 in 2010 to 5 in 2011 – the overall trend has nonetheless seen significant improvement, falling by 16% since the Seismic Task Team was formed in 2008. This is reflected in our long-term fatality trends and is making an important contribution to our journey towards Zero Harm.

Figure 3.12: Fatalities from Fall of Ground (FOG) in the South Africa region

Calandar Year	2011	2010	2009	2008	2007	2006
FOG (Gravity) fatals	7	9	3	3	4	17
FOG (Seismic) fatals	5	0	10	11	6	5
Non-FOG fatals	7	8	13	17	26	12
Total fatals	19	17	26	31	36	34

All of our project feasibility assessments include occupational health risk management. Relevant risks are addressed through targeted design interventions to ensure all infrastructure, equipment and processes are safe before they become operational.

At our new-generation South Deep mine, for example, we are 'building-in' safety measures from the start – particularly in relation to the technically sophisticated de-stress cut methodology. This includes, for example, the installation of yielding bolts in the de-stress excavations, the preconditioning of the de-stress faces and the use of semi-automated drilling machines for the installation of support in the de-stress panels.

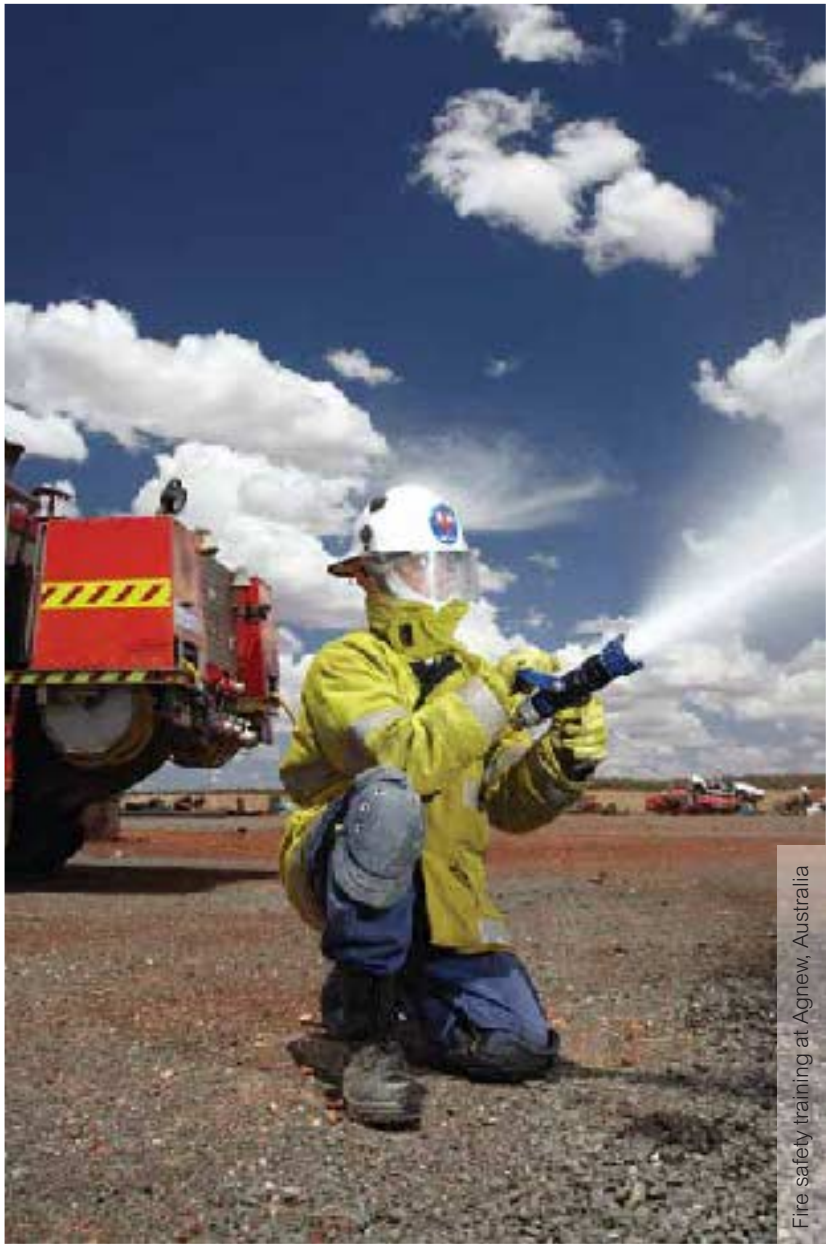
3.3.5 Recording and analysing safety performance

We seek to continuously improve the recording and analysis of our safety performance through the following means:

Holistic measurement of all safety incidents

During 2011, we continued to record Total Incident Frequency Rates (TIFR) at St Ives, which include a broad range of safety, environmental and operational measures. This a) delivers a holistic, risk-based view of safety performance; and b) reduces over-reliance on Lost Time Injury (LTI) reporting, which can discourage employees and managers from pursuing the early and effective treatment of some injuries.

In addition, our Australasia region removed Medical Treatment Injury Frequency Rate (MTIFR) as a performance metric in employees' Individual Balanced Scorecards. This is with the aim of encouraging employees to seek early medical attention.



Fire safety training at Agnew, Australia

Integrated risk management

St Ives has extended its use of CURA Risk Management software to integrate their operational risks. This required the installation of a new database, the modification of their risk matrix, training for system users and the incorporation of risk management into individuals' balanced score cards, in addition to safety.

Incident Causal Analysis

Both of our mines in Australia continued to apply the Incident Causal Analysis method. This 'blame-free' system helps identify the root causes of safety incidents to avoid repetition and promote accident prevention.

Peer analysis

Our Cerro Corona mine participates in monthly meetings with the National Society of Mining, Petroleum and Energy in Peru, where we work with peers to analyse serious safety incidents in the sector and identify lessons learned.

3.4 Respecting and protecting the environment

Our Vision, Values and risk management strategy – as well as increasingly stringent environmental regulation – means we remain highly committed to the continuous improvement of our environmental performance.

A significant proportion of our efforts are focused on the prevention of post-closure Acid Mine Drainage (AMD), the prevention of leaching from our tailings and the minimisation of our carbon emissions.

3.4.1 Managing the environmental impact of our operations

Our approach to managing the environmental impacts of our operations and exploration activities is defined by our sustainable development framework, as well as the ISO 14001 international environmental management standard. In 2011, we spent a total of US$54 million on environmental management. All of our operations are ISO 14001 certified.

Figure 3.13: Environmental incidents (Levels 2 and 3)[1]

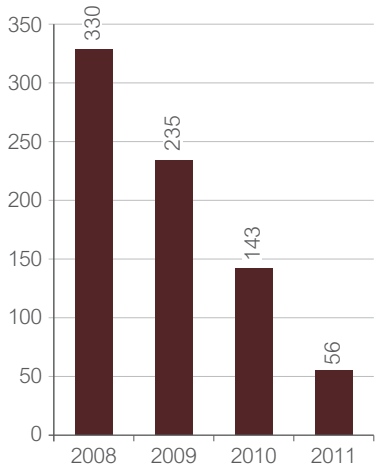


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Figure 3.14: Group environmental performance

Group	2011	2010	2009	2008
Environmental incidents (Level 2 and 3)[1]	56	143	235	330
Water withdrawal (Ml)	78,236	76,326	72,403	75,950
Water quality (mS/m)[2]	77	71	n/a	n/a
Water discharge (Ml)[2]	42,482	48,080	n/a	n/a
Closure costs (provisions) (US$m)	440	443	366	304
CO_2-e emissions (scope 1 and 2) ('000 tonnes)[3]	5,298	5,350	5,507	5,212
CO_2-e emissions (scope 3) ('000 tonnes)[3]	792	782	458	n/a
Carbon intensity (tonnes CO_2-e/oz)[4]	1.43	1.39	1.41	1.49
NO, SO and other emissions (tonnes)	5,358	5,871	5,379	5,528
Ozone depleting emissions[5]	n/a	n/a	n/a	n/a
Cyanide consumption (tonnes)	23,750	21,487	22,165	18,922
Mining waste ('000 tonnes)	189,409	193,577	167,569	103,856
Materials ('000 tonnes)	336	325	269	264

3.4.2 Implementing environmental stewardship throughout the mine lifecycle

We integrate proactive and responsible environmental management into every stage of the mining lifecycle. By doing so, we minimise our long-term environmental liabilities and maintain strong relations with our host governments, local communities and business partners.

From exploration to operation

All of our exploration projects incorporate environmental risk assessment and closure processes.

If exploration develops into project implementation, we then conduct a more extensive baseline environmental study (to identify the social and environmental status of an area, as well as related risks). Our projects are also subject to environmental/social screening and impact assessments, environmental management programmes and preliminary closure plans, depending on how advanced they are.

What is the ISO 14001 standard?

ISO 14001 is an internationally recognised standard that sets out how to implement an effective Environmental Management System (EMS). Its elements include:

- General requirements
- Environmental policy
- Planning implementation and operation
- Checking and corrective action
- Management review

It is aimed at helping organisations identify activities that impact on the environment, produce objectives for improvement and establish a management system to achieve these objectives – with ongoing monitoring for continual improvement.

[1] There were no Level 4 or Level 5 environmental incidents in 2011

[2] Data not available for 2008 and 2009

[3] 2010 figures restated in light of the Greenhouse Gas Protocol. Figures exclude fugitive mine methane emissions and include Tech. Transm./Distrib. losses (excl. theft) with respect to electricity

[4] Carbon intensity for 2008 to 2010 restated due to the revised basis of reporting with respect to ounces produced

[5] Although no data exists for ozone-depleting emissions by weight, this has not been identified as a relevant/material issue under our ISO 14001-compliant Environmental Management Systems

Figure 3.15: Details of Level 3 environmental incidents (including spills)

Operation	Date	Description	Impact	Remedial action
KDC	9 February 2011	Possible subsidence and ground movement	Cracks affecting two houses and the pooling of water in Letsasing Village. Drilling and grouting subsequently completed	Drilling and grouting completed to ensure ground stability
South Deep	6 June 2011	Damage to the gearbox and bearing of the wheel that drives the clarifier bridge. This stopped automatically stopped its operation and no return activated sludge was recalculated	Release of 6.6 million liters of untreated sewage water into the Leeuwspruit	Daily monitoring, the undertaking of a toxicological study and implementation of third party audits. The issue was reported to the National Nuclear Regulator, the Department of Mineral Resources and the Department of Water Affairs
KDC	17 June 2011	Suspected ingress of external water into the 10 Shaft water system	Discolouration of fissure water and the discharge of water from 10 Shaft into the bio-monitoring dam	Chorine dosage was increased and chlorine tablets were added to the water to render it safe. The issue was reported to the Department of Water Affairs
South Deep	2 December 2011	Power failure at the sewage works followed by a reporting delay	Release of 4.7 million liters of untreated sewage water into the environment	Power was restored to the sewage works and chlorine tablets were used to help disinfect the effluent
KDC	6 December 2011	Progressive failure of all tailings extraction pumps (e.g. associated with thickener transfer, CIP feed, CIP residue, disposal, George Dam, Brick Dam and No. 9/10 spillage)	Overflow of tailings from sumps and bunded areas to the Brick Dam, which also overflowed outside the plant into the river and nearby shops - resulting in a spillage of 40 tonnes	The plant was stopped to prevent further spillage. Samples were taken and subject to analysis, whilst a temporary dam was constructed outside the plant to contain the spill and prevent further impacts on the local river and shops. The issues was reported to the Department of Water Affairs

Each of our operations is subject to a tailored, ISO 14001-certified Environmental Management System (EMS).

These help us identify and manage the impacts of our activities and infrastructure, continuously improve and monitor our environmental performance and generate data for our centralised environmental database.

Closure and rehabilitation

Closure plans are in place at all of our mines, with the majority already being implemented – for example through concurrent rehabilitation. Our closure plans use 'worst case scenario' budgeting based on premature closure and excluding potential scrap values. This ensures that our financial provision for the responsible closure of our operations remains robust.

We have made provision in our financial statements for environmental rehabilitation costs of R3.19 billion (US$442 million).

A dedicated trust fund to support these provisions is currently valued at R1.31 billion (US$181 million), with the unfunded portion of these costs to be financed over the life of the operations.

Where we make significant changes to our operations, we work with local stakeholders to review and update our closure plans. Our planning is also subject to annual revision by our regional and group management teams, revision by third party experts, as well as annual internal and external audits

Additional content online

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3.4.3 Using and discharging water responsibly

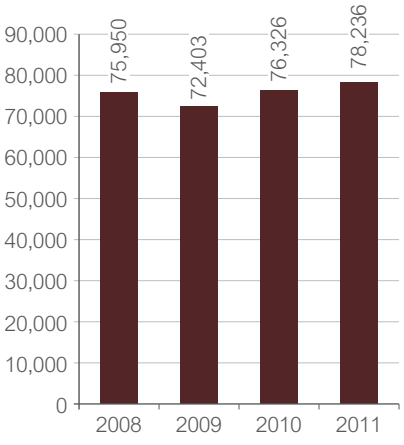
Water management represents a key risk in all of the regions in which we operate. It also forms a key component of each of our operations' EMS – through which water use and quality is assessed, managed, monitored and reported on.

Water use and quality

In 2011, we withdrew 78,236 Ml (2010: 76,326 Ml) and discharged 42,482 Ml (2010: 48,080 Ml).

The average quality of water discharged was 77 milli-siemens/meter (mS/m) (2010: 71 mS/m). Although this is within international standards, we are working to bring this within the 60 mS/m medium-term limit set by our water licences in South Africa.

Figure 3.16: Group water withdrawal (million liters)



None of our operations are currently located in water-stressed areas, but we are actively monitoring all water discharges and the quality of these discharges.

AMD risks

AMD risks are subject to rigorous evaluation from the exploration stage onwards, with AMD management plans covering both operation and closure. We will only proceed with a project if we are confident we can responsibly manage its AMD risks.

Water monitoring with community members near the Chucapaca project, Peru

AMD is considered a potential risk in Cerro Corona in Peru. We are, however, taking a range of actions to manage this risk, through the implementation of a full lifecycle risk mitigation strategy, continuous and comprehensive leach testing and the integration of relevant design measures into its Tailings Storage Facility. In addition, AMD management has been fully integrated into the mine's environmental management systems.

AMD in the Witwatersrand Water Basin

The historical legacy of gold mining in the Witswatersrand Water Basin in South Africa means AMD is a significant issue that continues to attract elevated levels of public and media attention.

Gold Fields has identified a risk of potential long term AMD issues at our mines in the West Wits area, which are currently experienced by peer mining groups. AMD relates to the acidification and contamination of naturally occurring water resources by pyrite bearing ore contained in both underground mines and rock dumps and tailings dams on the surface.

Despite its potential, AMD has not been detected at any of Gold Fields operations. Gold Fields has commissioned several technical studies to identify the steps required to prevent AMD at its facilities but none of these studies have allowed Gold Fields to generate a reliable estimate of the potential impact of AMD. Gold Fields has adopted a proactive approach by directing all studies and rehabilitation projects going forward to focus on AMD risk management. All actions in this regard are premised on a regional and integrated approach, with a long term objective of mine closure without residual liabilities.

It is within this context that we are taking a leadership role in efforts to address the long-term impact of AMD, through a number of initiatives including the Liquid Gold project and the Centralised Tailings Storage Facility (p64-65).

Other relevant actions taken in 2011 include:

- A review of different emergency scenarios in the event of local flooding, including the interaction of our shaft systems with those of other operators (both current and historical) and the potential AMD impacts
- Active participation in the Mining Interest Group (of which we are a founder), which represents the industry in the public steering committees set up to deal with legacy issues in the area. It also conducts public engagement and water monitoring in the Wonderfonteinspruit region
- Expansion of a continuous water monitoring and analysis system across the West Wits catchment area – as well as the identification and analysis of groundwater plumes within the region
- Ongoing support of local water forums, through which we engage local farmers, water consumers and other interested parties
- Enhanced engagement with environmental monitoring groups, such as the Federation for a Sustainable Environment
- Active cooperation with external consultants in the development of a public-sponsored action plan

In September 2011, we hosted a delegation from the National Council of Provinces (NCOP) to demonstrate our water management and environmental systems at KDC. The NCOP was visiting communities and mines in the region to familiarise itself with the environmental issues surrounding local gold mines and their potential impact on communities – with a particular focus on AMD.

Liquid Gold

Our most important initiative for addressing our potential long-term water liabilities in South Africa is the Liquid Gold project – which is expected to be a key element in our integrated water management strategy.

Environmental monitoring at Agnew, Australia

This regionally-focused project envisages the production of potable water from the fissure water (as well as process water) produced by our KDC and South Deep mines. By doing so, it offers the opportunity of mitigating a potential contingent liability, by establishing an economically sustainable model that addresses the key issues in an affordable manner.

During 2011, we completed a full pre-feasibility study for the project and our environmental impact assessment was approved by the Department of Environmental Affairs. We are now in the process of a full feasibility study which, on completion, could lead to a water treatment agreement, as well as developing an environmental management plan (p65).

www.environment.gov.za

Centralised Tailings Storage Facility

We are examining the potential for the reprocessing and centralisation of some of our 13 current and historical Tailings Storage Facilities (TSF) in the West Wits area into a new Centralised Tailings Storage Facility (CTSF) adjacent to South Deep's existing Doornpoort TSF. This project – known as the Tailings Treatment Project (TTP) – would seek to extract gold from the existing tailings, whilst also reducing our long-term tailings management costs and minimising our future environmental liabilities.

The economics of the TTP – including the potential cost savings offered by the utilisation of innovative Python processing plants in this process (p53) – are still under examination, with a final decision to be made in 2012.

Whether the TTP proceeds or not, tailings from the South Deep mine will be stored in the large-volume CTSF. The CTSF would offer a number of important advantages in terms of mitigating our long-term environmental liabilities.

In part, this is because (like South Deep's Doornpoort TSF) it would sit on geological strata that pose only minimal risks of groundwater contamination.

This is in contrast to the prevailing dolomitic geology of the West Wits area, on which 13 of our current and historical TSFs sit, which hosts naturally occurring dolomitic aquifers.

The CTSF would be modelled on similar lines to the Doornpoort TSF, which incorporates a number of innovative features to minimise potential contamination incidents.

These include, for example:

- Pre-isolation of the most acidic water before it enters the dam
- On-site water treatment to reduce the risk of acid drainage and spills
- Full plastic-lining of the return water dam, as well as a robust leak detection system
- Extensive earth bund walls and emergency catchment paddocks to contain spillages

Case study

Liquid Gold: Mitigating future liabilities and enhancing water security

Liquid Gold is Gold Fields long-term strategy for developing and implementing a sustainable business solution for water management in the South Africa region. It aims to establish a sustainable revenue stream to fund the on-going management of key water issues at the KDC and South Deep mines in the Far West Rand area of South Africa – whilst at the same time delivering potable water to local communities that face potential water shortages in the future. These issues include the long-term de-watering of Gold Fields mines in the Wonderfonteinspruit river catchment area – as well as the mitigation of any potential future Acid Mine Drainage (AMD) risks.

It is envisaged that potable water will be produced from fissure water (as well as process water) discharged by KDC and South Deep. This will be processed using leading-edge, customised treatment technology and robust monitoring systems that will ensure high levels of water quality. The technology used includes:

- A Crystalactor® to reduce calcium levels and produce mine-usable lime as a side-product. This is a pellet reactor that softens water and enables the crystallisation of a variety of (heavy metal) carbonates, phosphates, halides, sulphates and sulphides
- A cationic ion exchange to reduce residual calcium and magnesium
- A de-gassing tower to remove carbon dioxide

Gold Fields is collaborating with an independent water services provider to ensure these technical processes fully satisfy relevant quality standards for potable water. Gold Fields also plans to establish a water treatment agreement. It is envisaged that the water will then be delivered by local municipalities, or other agreed service providers, using established infrastructure. This will help ensure that dewatering continues at economically and environmentally sustainable levels – even after the closure of Gold Fields mines on the West Rand.

It is envisaged that the sustainability of the Liquid Gold project will be further augmented through the production of marketable chemicals – such as calcium magnesium nitrate (used to make fertiliser) – as a by-product of the water treatment processes. Gold Fields is investigating the establishment of third-party off-take agreements for these by-products.

"By implementing our Liquid Gold project, we are pro-actively and scientifically positioning ourselves to avoid potential AMD-related issues."

Peter Turner, Executive Vice-President: South Africa Region

Subsequent to the year-end, Gold Fields entered a Memorandum of Understanding ("MoU") with Gold One International to investigate the viability of concurrently reprocessing the two companies' combined surface tailings deposits, located on the West Rand region of South Africa. Under the MoU, Gold Fields and Gold One will jointly investigate the feasibility of establishing a joint venture into which both will contribute surface assets for retreatment. These assets are expected to comprise in excess of 700 million tonnes. A detailed scoping study is expected to be completed by mid-2012, following which a decision will be taken on whether to advance the study to a feasibility level. The intention of the joint venture, should it proceed, is to reclaim and retreat historic and current tailings material to recover residual gold, uranium and sulphur.

During 2012, we hope to advance our tailings treatment strategy to achieve a clearer outcome – having examined all the options set out above.

Additional water risks

Australasia region

In Australia, our primary water risks relate to availability. In 2011, we continued to diversify our supply of process quality water away from the bore-fields we have relied on in the past. Agnew sources its water both from a nearby decommissioned open pit and from underground. The mine also carries out extensive water recycling, including that of tailings water, pumped underground water and domestic waste water.

In 2011, St Ives sourced approximately 25% of its water for processing from a freshwater dam. It also commissioned a detailed, third-party study of the future viability of its current bore-field – with particular focus on future consumption patterns and alternative sourcing. The operation recycles up to 30% of its water, depending on tailings deposition locations and climatic conditions.

We have identified the early development of an underground salt plume at a 'legacy' TSF at Agnew. We have implemented a study and a survey to inform additional actions to be taken.

South Africa region

In South Africa, which faces potential future water shortages, our operations source their water from local utilities and from naturally occurring water found underground. The water from underground constitutes a much larger volume - in total more than 100 million liters per day. The larger portion of this volume is pumped to surface, without the mining process impacting on it, and released into the natural environment.

Our mines have a comprehensive monitoring programme that is used to continually check both the volume and quality of the water that is discharged into the natural environment. This requires regular sampling of all discharges through which salt and heavy metal levels are checked to ensure legally permissible volume and quality levels are not exceeded. We also have hundreds of sampling boreholes that are carefully positioned to monitor underground water and the potential pollution thereof.

Through this process, we can identify anomalies and rectify any problems that may arise from time to time. All such incidents are reported to the authorities and resolved in a transparent and collaborative manner. We are currently in the process of introducing continuous monitors on all of our surface discharges, which should assist us even further in identifying and mitigating risks associated with our water discharges.

South America region

In Peru, water use at our Cerro Corona mine is minimised through the use of a closed circuit water system. This means we do not use water from local rivers – instead relying on rain and groundwater – and only consume 17% of the water we are permitted to use under our licence.

Water quality represents a highly sensitive issue within communities in the Hualgayoc region, due to the negative environmental legacy of previous mining operators and heavy local reliance on agriculture. As a result, we are involved in a joint water monitoring programme led by the National Water Authority. This multi-stakeholder initiative, which carries out regular testing of the Tingo and Hualgayoc rivers, involves local water consumers, the regional director for agriculture and the local water authority.

Despite the joint water monitoring programme – as well as the fact that all of our discharges are within regulated limits – downstream communities continue to raise concerns around water quality. As a result, in 2011 we continued efforts to build community confidence, including:

- The seeking of government verification of downstream water quality
- Minimisation of the non-toxic sediments in our discharges
- Support for two public water treatment plants
- Precautionary water quality monitoring at two local springs

West Africa region

In Ghana, we face potential water risks in terms of both availability and quality. In 2011 we made good progress in reducing our water use through the application of closed-circuit water processes during the heap leaching process, as well as water recycling. For example, at Tarkwa we recycle approximately 35% of water used in the CIL process.

In terms of quality, we are implementing a number of initiatives to further minimise the risk of water contamination. During 2011, we completed the construction of the TSF3 tailings storage facility at Tarkwa, which incorporates a range of control measures such as an impermeable clay base and pen stock, extensive water monitoring boreholes, as well as enhanced embankments. We also installed a water clarification plant to remove suspended solids in the water to support our heap leaching process at Tarkwa. This – along with longer retention times – has helped ameliorate community concerns about our past discharge of limited amounts of non-toxic silt into the local water system.

3.4.4 Reducing our carbon and managing climate change impacts

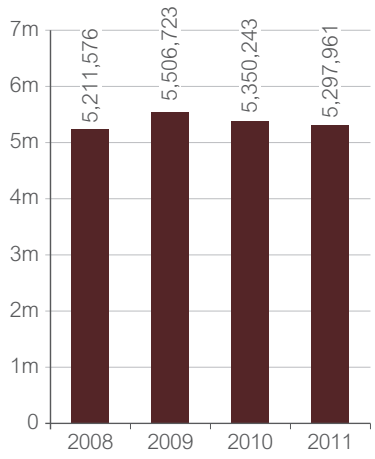
Growing international concern about climate change, as well as the increasing likelihood of carbon regulation in a range of jurisdictions, means we place strong emphasis on carbon and climate change management. In addition, rising energy costs mean that any success in reducing our energy consumption delivers important commercial benefits, while at the same time cutting our emission levels. Carbon-based electricity generation accounts for the bulk of our Scope 2 emissions.

As a result, we are developing a fully integrated, Group-level Energy and Carbon Strategy and management plan. This is with the objective of ensuring regulatory compliance, defining our energy usage, identifying key mitigation measures for reducing carbon emissions and energy consumption, embedding relevant management strategies and confirming reporting requirements and protocols. Training and awareness, as well as regular performance reviews, will be integral components of this new strategy.

In 2011, we embedded our new Carbon Management Policy, which commits us to reducing our carbon footprint, improving our energy efficiency and managing the risks posed by climate change. Under this policy, our regions are responsible for developing a Carbon Management Strategy tailored to local context and based on the following three pillars:

- Management and reporting, including carbon accounting, reporting and communication (p50-51)
- Adaptation, including the development of a strategy to manage climate change risks (p69)
- Mitigation, including the mitigation of carbon pricing risks, which will impact on our cost structures and NCE, as well as focus on the opportunities offered by the generation and sale of carbon credits (p68)

Figure 3.17: Group CO_2-e emissions (tonnes)[1]



During 2011, we started integrating carbon pricing into our financial planning. Although we are not currently subject to cap and trade carbon pricing schemes, we have taken this step to ensure we are well placed to thrive in a carbon-rationed future. Carbon pricing will also be included in our 2013 budgeting process – with specific carbon reduction targets to be determined by the Group Executive Committee.

Figure 3.18: Group CO_2-e emissions by type (%)[1]

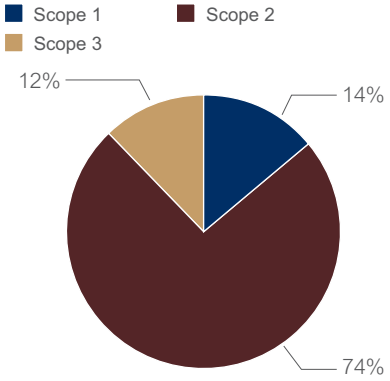


Figure 3.19: Carbon intensity (tonnes CO_2-e/oz)[2]

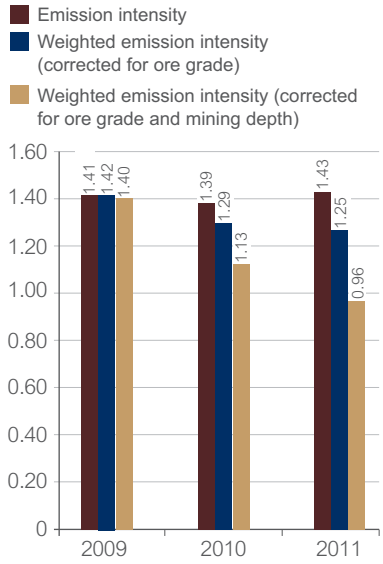
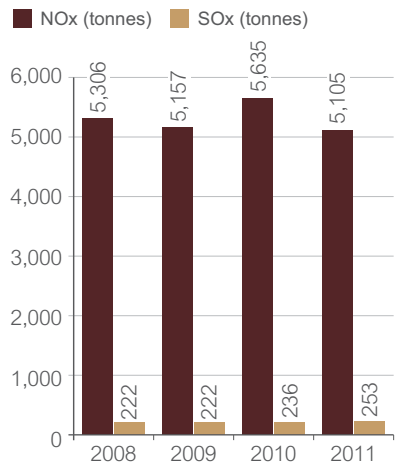


Figure 3.20: Group NOx and SOx emissions (tonnes)



Carbon emissions

Our reliance on coal-generated power for our deep-level mines in South Africa accounts for the majority of our carbon emissions (89% of Scope 1 and 2 emissions). Much of the remainder is accounted for by our truck fleets in our other regions.

During 2011, our total emissions (Scope 1, 2 and 3 including mine methane) amounted to 6.6 million tonnes CO_2-e (2010: 7.1 million tonnes). As part of our reporting under the Carbon Disclosure Project, we have broken our emissions down as follows:

- Scope 1 including mine methane emissions[3]: 1.01 million tonnes CO_2-e (2010: 1.40 million tonnes)
- Scope 1 excluding mine methane emissions: 0.46 million tonnes CO_2-e (2010: 0.44 million tonnes)
- Scope 2[4]: 4.84 million tonnes CO_2-e (2010: 4.91 million tonnes)[5]
- Scope 3[6]: 0.79 million tonnes CO_2-e (2010: 0.78 million tonnes)[5]

In 2011, Gold Fields was ranked first in the Top 100 Carbon Disclosure Leadership Index (CDLI) for the Johannesburg Stock Exchange (JSE). The CDLI rates JSE-listed companies on the disclosure of their carbon emissions and is carried out annually by the global Carbon Disclosure Project. Our disclosure rating of 98% is within 1% of the best score in the world, placing us among the best of the 3,700 companies surveyed by the CDP. Furthermore, Gold Fields was ranked joint first for Carbon Leadership Performance, which measures how companies set carbon reduction targets and how they perform against them.

[1] Scope 1 and 2 emissions only. Excludes fugitive mine methane emissions

[2] Carbon intensity for 2008/2010 restated due to revised reporting re ounces produced

[3] i.e. All direct greenhouse gas emissions

[4] i.e. Indirect emissions from consumption of purchased electricity, heat or steam

[5] Figures for 2010 have been restated in light of the Greenhouse Gas Protocol. Please refer to footnote 3 on p61 for an explanation

[6] i.e. Other indirect emissions, such as transport-related activities in vehicles not owned or controlled by Gold Fields, outsourced activities, waste disposal, etc.

Carbon regulation and alternative energy

Emerging carbon regulation in Australia and South Africa makes it particularly important that we continue to reduce our energy consumption, reduce our carbon emissions and generate Certified Emissions Reductions (CERs).

Australia's Clean Energy Act is due to introduce a carbon tax that prices carbon at A$23 per tonne. A national cap and trade scheme will be gradually introduced to replace the tax. Although we do not directly fall under this scheme, the legislation will also adjust fuel tax credits and excise duties to apply an equivalent carbon price to our diesel. We expect this to introduce additional costs of between A$6 and A$8 million (US$6 and US$8 million) a year at current levels of fuel consumption. Should we become subject to the cap and trade scheme in future, Gold Fields could possibly 'import' CERs where necessary – including self-generated CERs from our South Africa and West Africa regions. In 2011, we actively worked to understand the full impact of the Clean Energy Act and to identify any related opportunities.

In October 2011, the Government of South Africa approved the National Climate Change Response Policy, which envisages the imposition of carbon emissions caps on the country's largest emitters within the next two years – including those in the mining sector. This is with the aim of contributing to a cut in carbon emissions growth by 34% in the next decade and 42% by 2025. In the 2012 Budget, the government announced plans to introduce carbon taxes in 2013 at R120/tonne, although nearly two-thirds of emissions will be tax-exempt until 2020. Again, we are investigating opportunities to mitigate the impact of such regulation through the generation of CERs within South Africa, as well as from our Australasia and West Africa regions.

Our efforts to mitigate our carbon emissions have been given support by the continuation of the Kyoto Protocol as agreed by the United Nations Framework Convention on Climate Change (Cop 17) in Durban in December 2011. This will enable us to continue our efforts to generate carbon credits to fund some of our energy efficiency projects. We are already in a relatively good position to participate in future carbon markets, with a number of alternative energy projects either active or in the pipeline. These include the following:

Beatrix Methane Project

In 2011, our cutting-edge Beatrix Methane Project was registered under the Clean Development Mechanism (CDM). It was estimated that the flaring of underground methane gas and the surface bore-holes generated a total of 30,000 Certified Emission Reductions (CERs).

The value of these CERs on the international carbon trading market in 2011 totalled R1.2 million (US$166,000). We also advanced plans to construct a co-generation plant that will use this gas as a feedstock to generate approximately 4MW a year of electricity. It is expected that this could prevent the emission of approximately 12,000 tonnes of methane a year, equivalent to 252,000 tonnes of CO_2-e. In financial terms, this would be equivalent to around R10.4 million (US$1.4 million) in CERs a year – and R2.5 million (US$346,000) in annual energy savings.

Over the current first phase of the project (which will last to around 2020) we expect to generate around R85 million (US$11 million) in CERs and about R70 million (US$9 million) in energy savings at current CER prices and Rand-Euro exchange rates.

During 2011, we initiated work to establish a second methane extraction system, including a flare installation at Beatrix West, with construction to start in mid-2012. This would approximately double the amount of methane extracted from underground and the electricity generated.

Solar generation at Beatrix

In addition, we are investigating the potential for large scale, third-party solar power generation on our land at Beatrix, which would be subject to the South African feed-in tariff, a tariff that subsidises generation of electricity using alternative energies, such as solar and wind.

Bio-energy generation at Tarkwa

Plans are in place to establish a new 10 - 15 MW biomass energy plant on the boundary of our Tarkwa mine – with all power generated at the plant to be utilised by the mine. It is expected that the plant, which will initially use feedstock from maturing rubber plantations, will be commissioned in 2013.

We are analysing opportunities for the future sourcing of biomass from local communities. The project benefits from funding assistance through the international Clean Development Mechanism (CDM), and has the potential to produce up to 45,000 CERs a year, either to sell or to off-set carbon emissions from our other operations.

Wind generation at Lake Lefroy

At St Ives, we are continuing to collect wind data on nearby Lake Lefroy to assess the potential for large-scale wind-generation. This produced a wind resource model during 2011, which indicated a reliable wind resource and strong potential for wind farming. This will assist with the development of a wind farm feasibility study in 2012. The study will include analysis of the potential for the generation of CERs, which would considerably enhance project economics.

www.cop17-cmp7durban.com
www.cdm.unfccc.int

Climate change impacts

Although it is difficult to establish direct causation, there are signs that climate change may already be affecting our operations in Ghana. We have observed deviations from established weather patterns – with implications in terms of the intensity of rainfall during certain periods. This has had a limited impact on the 'washing out' of our waste rock dumps and rehabilitated sites. We are currently analysing potential actions to ensure such risks are mitigated in future. Likewise, in mid-2011 Tarkwa's Teberebie pit was subject to flooding, which temporarily impacted production. Pump capacity at the pit has subsequently been upgraded (p95).

In addition, we are carrying out certain projects under the 'adaptation' pillar of our Carbon Management Strategy, including:

- Designing chilling plants for higher daytime temperatures
- Increasing the freeboard in slimes dam design to mitigate flash flood risks

3.4.5 Managing materials responsibly

We are committed to the safe and responsible management of our input and output materials.

Figure 3.21: Group mining waste (million tonnes)

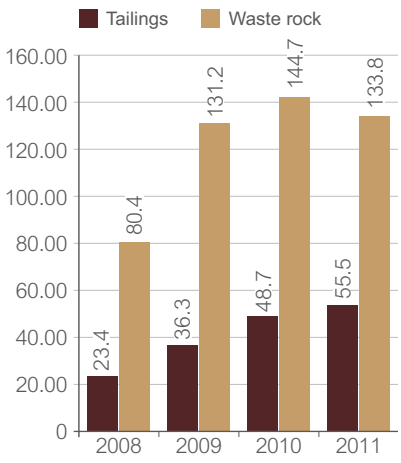
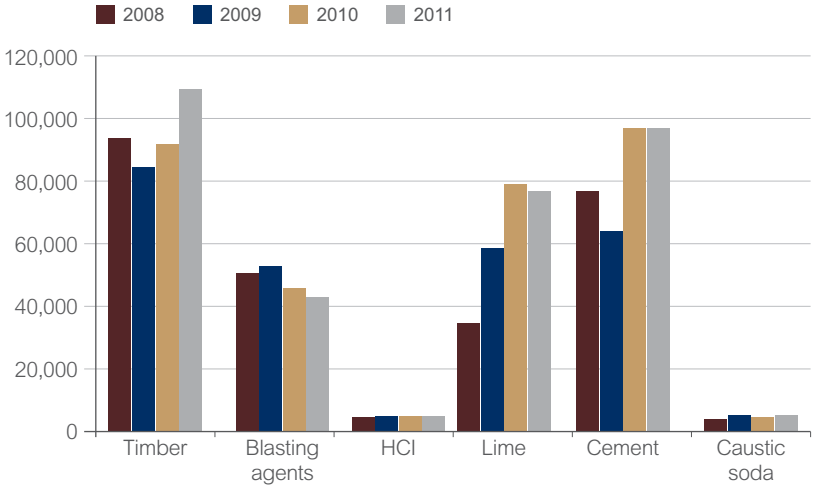


Figure 3.22: Group input materials (tonnes)



Our most significant input materials include timber, blasting agents, Hydrogen Chloride, lime, cement and caustic soda. However, cyanide represents the most potentially hazardous input material, meaning we place particular emphasis on its management. All our eligible operations have full accreditation under the International Cyanide Management Code (ICMC). This accreditation extends to our transport providers.

Our most significant output materials include tailings, waste rock, chemical waste and hydrocarbon waste.

Each of our mines has a life of mine tailings management plan, supported by relevant tailings management procedures and guidance. Our tailings storage facilities (TSFs) – as well as their associated pipelines and pumping facilities – are subject to daily inspections, as well as formal annual reporting. In addition, they are inspected for technical integrity by independent engineers at least once every three years – or more frequently where required by local circumstances or relevant permit or licence conditions.

Our TSFs are subject to a range of measures to minimise the risks they pose to the environment – including robust physical modelling and engineering. They are also subject to ISO 14001 certified, externally audited tailings management systems.

Additional content online

www.goldfields.co.za

What is the International Cyanide Management Code (ICMC)?

The ICMC is a voluntary gold industry programme to promote the responsible use of cyanide, protect human health and reduce potential environmental impacts. Signatories to the Code are subject to third-party auditing to ensure their compliance. Compliance with the Code is recognised as best practice for cyanide management by the World Gold Council, the Council for Responsible Jewellery Practices, the International Finance Corporation and the G8 group of countries.

View from Cerro Corona, Peru

Specific risk management measures include:

- Pollution containment facilities to capture any runoff
- Recycling systems to enable tailings water to be reused in metallurgical processes (including closed circuit systems)
- Dust and erosion control measures, including vegetation and/or dust palliatives on slope faces

Although most of our tailings are stored in TSFs, a proportion is recycled as paste fill (in combination with cement) in line with best practice rock engineering requirements.

In South Africa, we recycle a substantial amount of waste rock through reprocessing and use in construction projects carried out by our contractors. The remainder is kept in managed dumps, which are subject to comprehensive rehabilitation.

3.4.6 Respecting and promoting biodiversity

Our management of fauna and flora is based on an understanding of the complex relationships between biodiversity, climate change and water – as well as the need to manage ecosystems in their entirety. Where feasible, we aim to have a net positive impact on biodiversity.

All of our mines evaluate direct and indirect biodiversity risks under their EMSs and as part of mine lifecycle management. Where relevant, we work with local communities and environmental NGOs to develop biodiversity management plans – and to carry out joint monitoring of our biodiversity risks and impacts.

In Ghana, for example, we implement a total ban on hunting on our land holdings and have strict controls to protect local water bodies. Because of this, our operations act as de facto sanctuaries for local wildlife and enjoy high levels of biodiversity compared to their surrounds.

Gold Fields is a corporate member of the Ghana Wildlife Society, and their guidelines continue to inform our management of biodiversity at site-level. We are also a founding member of Leadership for Conservation in Africa (LCA), an organisation through which business, governments and environmental organisations work together to promote conservation-led socio-economic development.

Likewise, the shores of Lake Lefroy near St Ives in Australia represent an area of sensitive biodiversity. Internal and external permitting and monitoring systems are in place to assess the cumulative impacts of the operation's lake-based mining and to minimise related ecological impacts. The expansion of St Ives' lake-based operations has been assessed by the Office of the Environmental Protection Authority and ministerial approval was granted – with conditions – in November 2011.

Additional content online

www.goldfields.co.za

www.ghanawildlifesociety.org

3.5 Regional overview: Australasia

3.5.1 Introduction

Gold Fields operational activities in the region are centred on our St Ives and Agnew mines in Western Australia. Gold Fields also has an extensive greenfields exploration portfolio in the region, including the East Lachlan joint venture projects in New South Wales and the Delamarian project in South Australia (p109-110). The most promising growth project in the region is the highly prospective gold-copper Far Southeast project in the Philippines (p116-118).

In March 2012, we made a third down-payment of US$110 million under our US$340 million option agreement to acquire a 60% interest in the Far Southeast project. The first payment of US$54 million was made in September 2010 and the second of US$66 million in September 2011. If we exercise our option, the final payment of US$220 million is expected to be paid in 2012. Our extensive surface and underground drilling programme at Far Southeast continues to show promising results – supporting both the known core of mineralisation, as well as lateral and vertical extensions.

Performance in 2011

Overview

In 2011, we continued to stabilise our mining operations in Australia to provide a solid platform for near-mine production expansion – and to create a more robust regional NCE margin. Actions undertaken to support these goals included:

- Implementation of Business Process Re-engineering (BPR)
- Ongoing near-mine reserve replacement
- Achievement of full production at our Athena underground operation at St Ives and the Songvang open pit at Agnew
- Construction of the Hamlet underground deposit at St Ives

We have implemented a tailored recruitment and retention programme to address the competitive, 'fly in, fly out' labour market in Western Australia. Although our staff turnover rate is steady at 28% (2010: 30%), we expect the positive impacts of this programme to become apparent in the next few years.

Both St Ives and Agnew retained their OHSAS 18001 and ISO 14001 certification, and remained compliant with the International Cyanide Management Code.

Production and NCE margin

Attributable production in Australia increased by 6% in 2011 to 659,000 ounces (2010: 620,000 ounces). This reflected stable mill throughput at St Ives, as well as higher output from the underground Kim ore body and maiden production from the newly commissioned Songvang open pit at Agnew.

Over the same period, the regional NCE margin improved to 23% (2010: 20%). In part, this was due to improved output and higher gold prices, offset by increasing costs and capital expenditure.

Outlook for 2012

The regional target of 1 million ounces in production or development by 2015 remains our core objective. In 2012, we plan to achieve gold output of between 630,000 and 660,000 ounces at a total cash cost of A$890/oz and an NCE of A$1,415/oz (including the one-off cost to convert to owner mining at St Ives' open pit operations). We are confident that considerable amounts of our development ounces will come from our Far Southeast project in the Philippines.

Opportunities

- Continuous improvement of health and safety performance
- Highly prospective sites with scope for further development
- Leveraging of internal technical competencies to further improve productivity and costs

Figure 3.23: Attributable gold production (000'oz)

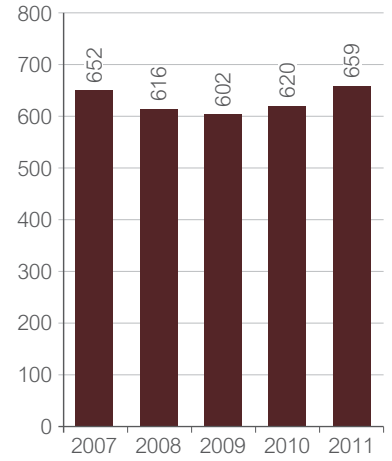


Figure 3.24: NCE margin (%)

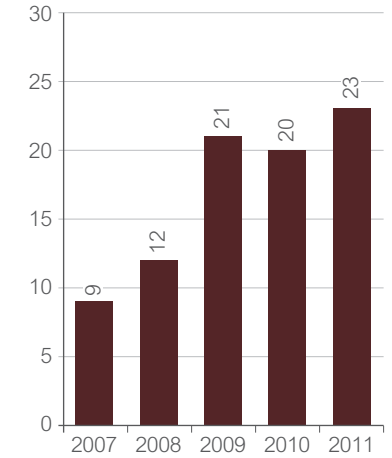
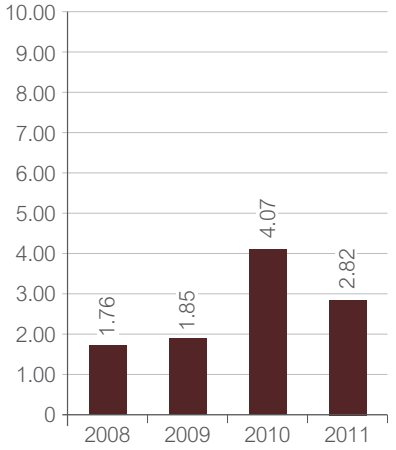


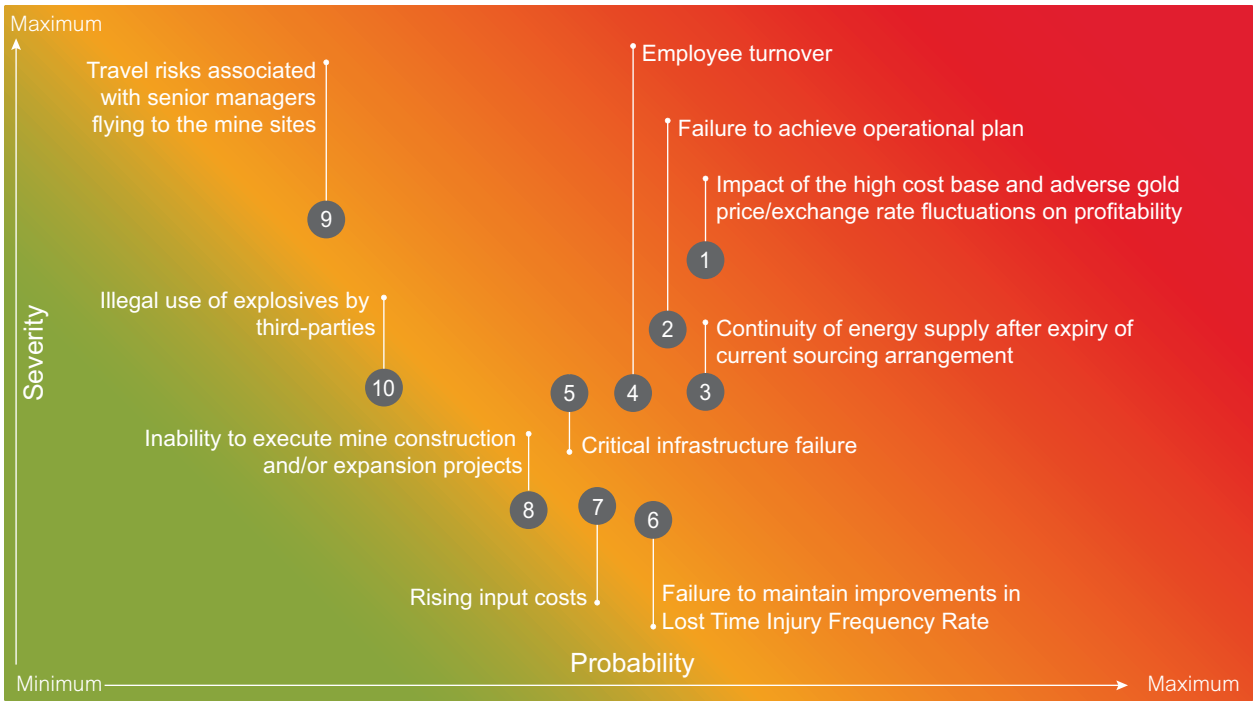
Figure 3.25: LTIFR[1]



[1] Restatement – figures for 2009 and 2010 previously reported as 1.18 and 4.08 respectively. See p4 for explanation

3.5.2 Top 10 Australasia region heat map

The heat map below sets out the top 10 Australasia region risks, as identified through our Enterprise Risk Management (ERM) process (p36-37).



Risk mitigating strategies	
1	• Aggressive and ongoing implementation of Business Process Re-engineering (BPR) to achieve targeted NCE margins • Implementation of our production reporting tool to analyse production performance
2	• Enhanced focus on inputs and outputs with a focus on improved mine planning and reporting
3	• Negotiation of new power purchasing agreement • Investigation of alternative supply sources, including self-generation
4	• Provision of a competitive employee value proposition • Acceleration of our graduate development programmes • Enhanced focus on leadership development as well as individual employee development
5	• Prioritisation of maintenance activities • Technical review and assurance by Group Technical Services • Engagement of specialist consultants
6	• Prioritisation of health and safety resourcing • Enhanced enforcement of health and safety standards
7	• Ongoing implementation of BPR to control cost escalation
8	• Appointment of designated, qualified Project Managers for relevant projects • Implementation of improved project reporting systems
9	• General review of company travel procedures • Prohibition on a 'critical mass' of managers travelling together
10	• Focus on strict explosive magazine procedures, including auditing

3.5.3 Operation overview: St Ives

The lease area of our St Ives mine is located near the town of Kambalda in Western Australia – 80km south of Kalgoorlie. It produces from four underground mines, three open pits and 10 surface stockpile sources, with processing taking place through a carbon in leach plant and a heap leach plant.

Performance in 2011

Overview

Notable achievements in 2011 include:

- Commercial levels of production at our new Athena underground operation
- Commissioning of the Mars/ Minotaur and Paddy's open pits
- Reaching full production at the Formidable open pit
- Successful transition to owner-mining at our underground operations

We continued to focus on managing the strip ratio, disciplined scheduling and enhanced mining plans. During 2011, our mining flexibility and our production sustainability were enhanced by the fact that we:

- Progressed our two new open pits into production
- Commissioned our Athena project and reached commercial levels of production
- Advanced the construction of the Hamlet decline and completed relevant surface infrastructure
- Extended the life of our Cave Rocks underground operation by 1-2 years as a result of extensive drilling
- Carried out extensive maintenance on our 15-year old Heap Leach Facility
- Completed a paste-fill plant for Athena and Hamlet, due for commissioning in March 2012. This will deliver greater mining flexibility and help improve safety

Figure 3.26: Key operating statistics St Ives

Key operating statistics	2011	2010	2009	2008	2007
Gold produced – attributable ('000oz)	465	468	415	415	451
Total cash cost (A$/oz)	873	776	816	739	582
Notional Cash Expenditure (NCE) (A$/oz)	1,248	1,064	1,056	1,014	806
Gold price (A$/oz)	1,532	1,336	1,241	1,033	832
Operating profit (A$m)	312	273	180	116	105
Operating costs (A$m)	403	376	345	301	257
Operating margin (%)	44	44	35	27	28
NCE margin (%)	19	20	15	12	3

Figure 3.27: Key sustainability statistics St Ives

Key sustainability statistics	2011	2010	2009	2008
Total taxation and royalties paid (A$m)	18	21	29	16
Employee wages and benefits (A$m)	47	43	36	32
Total employees	466	319	315	271
Fatal Injury Frequency Rate (FIFR)	0	0	0	0
Lost Time Injury Frequency Rate (LTIFR)	2.86	5.03[1]	0.82	1.60
Cyanide consumption ('000 tonnes)	2.79	2.60	3.00	3.10
CO_2-e emissions ('000 tonnes) (Scope 1&2)	174.7	183.8	198.1	212.1
Energy consumption (TJ)	1,718	1,805	1,919	1,980
Water withdrawal (million liters)	10,686	16,309	23,291	22,159

Figure 3.28: Mineral Resources and Mineral Reserves St Ives

Mineral Resources and Mineral Reserves St Ives	2011	% of Group total
Attributable Mineral Resources (million oz)	5.31	2%
Attributable Mineral Reserves (million oz)	2.81	4%

[1] Restatement – figure previously reported as 5.05. See p4 for explanation

St Ives also implemented a range of BPR initiatives. These included:

- Improvements to short-term interval controls, which have increased throughput at the heap leach plant
- Identification and implementation of a range of initiatives – including analysis of the heap leach and milling mixes, as well as mine scheduling – following an externally conducted optimisation study
- Implementation of owner-mining for all underground ore extraction, whilst maintaining contractor development. This included the integration of contractor employees, truck fleet and equipment

Energy efficiency and carbon emissions

During 2011, we progressed efforts to improve energy efficiency and reduce our carbon emissions. Aside from the direct cost savings this is likely to offer, such efforts are likely to offset changes to be made to fuel tax rebate credits under Australia's Clean Energy Act (p68, 155). In addition, we are using fuel additives to improve the burn efficiency of our truck engines and are exploring automated weighing systems to improve truck loading efficiencies.

In terms of processing, we implemented the heating of pre-treatment water using solar vacuum tube and heat pump technologies to improve productivity and lower energy consumption.

We also advanced the installation of Variable Speed Drives to mill water pumps to reduce wear and electricity consumption. Furthermore, we continued our two-year assessment of the St Ives wind resource and large-scale wind generation on Lake Lefroy. This produced a positive pre-feasibility study based on accumulated site data, in addition to potential turbine locations and costs (p68).

Production, development and NCE margin

Production performance remained relatively steady through 2011, with output reaching 465,000 ounces (2010: 468,000 ounces). Our focus has been on maintaining similar levels of production at the mine, whilst reducing its costs.

At the underground operations, ore mined increased from 1.61 million tonnes at 5 g/t in 2010 to 1.77 million tonnes at 4.7 g/t in 2011 – with increased tonnage from Athena replacing the Belleisle mine, which closed in May 2011. At the open pit operations, ore mined decreased from 5.42 million tonnes at 1.7 g/t in 2010 to 4.31 million tonnes at 1.8 g/t per tonne in 2011 – with a decrease in the open pit mining fleet and greater use of stockpiled ore.

Gold production from Lefroy decreased from 439,000 ounces to 433,200 ounces as a result of reduced underground grade and greater use of stockpiled ore. At the heap leach facility, gold production increased from 28,900 ounces to 31,400 ounces due to throughput improvements and a slightly higher average grade of ore stacked.

Operating costs rose at the start of the year due to higher waste normalisation costs after drawing-down on inventory to supplement lower production. The NCE margin declined marginally from 20% to 19% in 2011 as a result of higher capital expenditure, offset in part by improved gold prices.

Outlook for 2012

We plan for St Ives to produce between 440,000 and 460,000 ounces of gold at a total cash cost of A$935/oz (US$935/oz) and an NCE of A$1,540/oz (US$1,540/oz), which includes the one-off cost to convert from contractor to owner mining at the open pit operations.

This plan assumes:

- The achievement of a full production run rate at Athena
- Completion of a new paste-fill plant to support the Hamlet and Athena operations
- Bringing Hamlet into production by mid-2012
- Identifying ongoing opportunities to grow and consolidate our open pits in light of stable gold prices
- Continued implementation of BPR

St Ives, Australia

3.5.4 Operation overview: Agnew

Agnew is located 23km west of Leinster, which is itself 375km north of Kalgoorlie. The mine produces from the Kim, Main and Rajah ore bodies, which form part of the Waroonga underground mining complex as well as the Songvang open pit. Ore is processed through a carbon in pulp plant.

Performance in 2011

Overview

Notable achievements in 2011 include:

- Consolidation of owner-mining, with commensurate productivity and cost benefits
- Commencement of surface mining at the Songvang open pit
- Significant development work on the Main Vent Shaft
- Extensive drilling on the Main Lode ore body to support long-term mine sustainability

Our focus has been on operational stabilisation, following the implementation of owner-mining. The first half of the year was relatively challenging as a result of:

- Short-term challenges around the consistency of our paste fill cement, which limited our ability to bring stopes into sequence at Kim Lode – the highest grade section of the Waroonga complex. We have since achieved improvements in this respect
- A lack of open pit ore

Nonetheless, production recovered as a result of:

- Improved underground grade, resulting from effective planning
- The commissioning of the Songvang pit, which helped us utilise available mill capacity and improve operational flexibility

Figure 3.29: Key operating statistics Agnew

Key operating statistics	2011	2010	2009	2008	2007
Gold produced – attributable ('000oz)	194	152	188	201	200
Total cash cost (A$/oz)	675	684	536	524	472
Notional Cash Expenditure (NCE) (A$/oz)	1,062	1,098	799	701	646
Gold price (A$/oz)	1,564	1,326	1,241	1,034	841
Operating profit (A$m)	175	96	133	98	74
Operating costs (A$m)	134	105	99	101	98
Operating margin (%)	58	48	57	47	44
NCE margin (%)	32	17	36	32	23

Figure 3.30: Key sustainability statistics Agnew

Key sustainability statistics	2011	2010	2009	2008
Total taxation and royalties paid (A$m)	8	0	0	0
Employee wages and benefits (A$m)	27	21	20	21
Total employees	235	212	158	136
Fatal Injury Frequency Rate (FIFR)	0	0	0	0
Lost Time Injury Frequency Rate (LTIFR)	2.72	1.11	2.13	2.23
Cyanide consumption ('000 tonnes)	0.71	0.44	0.53	0.80
CO_2-e emissions ('000 tonnes) (Scope 1&2)	49.6	40.6	42.9	45.7
Energy consumption (TJ)	439	339	356	368
Water withdrawal (million liters)	1,287	1,213	1,564	1,096

Figure 3.31: Mineral Resources and Mineral Reserves Agnew

Mineral Resources and Mineral Reserves Agnew	2011	% of Group total
Attributable Mineral Resources (million oz)	3.84	2%
Attributable Mineral Reserves (million oz)	1.30	2%

Our transition to owner-mining has started to show benefits in terms of efficiency, with production costs falling by 1.3% on a per ounce basis.

This puts us in a strong position for the future as we look to develop the Kim ore body at depth.

In addition, during 2011 we focused on improving mine flexibility and sustainability through an extensive planning and development programme. This included the construction of the New Vent Shaft, which is essential for the future development of the Kim ore body. The Kim ore body is currently being operated at 900 meters but extends as deep as 1,500 meters.

We have already initiated early work to examine potential automation of our mining processes, including the trial operation of a remotely operated drill-rig and the ongoing development of our fibre optics infrastructure.

Such technology will become increasingly important as we mine at deeper levels.

The New Vent Shaft will also be necessary if we develop the prospective Main Lode beneath the current Main ore body, which we are in the process of drilling. If successfully developed, the potentially high-grade Main Gap ore body will play a key role in supporting future production levels.

During 2011, Agnew implemented a range of BPR initiatives. These included:

- Ongoing optimisation of our owner mining arrangements, including a focus on short-term interval controls to improve the amount of ore trucked from underground – as well as equipment scheduling and resourcing
- Introduction of owner maintenance to improve equipment availability and reduce costs. This means only development activity is currently undertaken by contractors at the mine
- An increase in the capacity of the gravity plant to improve recoveries and process efficiency

Energy efficiency and carbon emissions

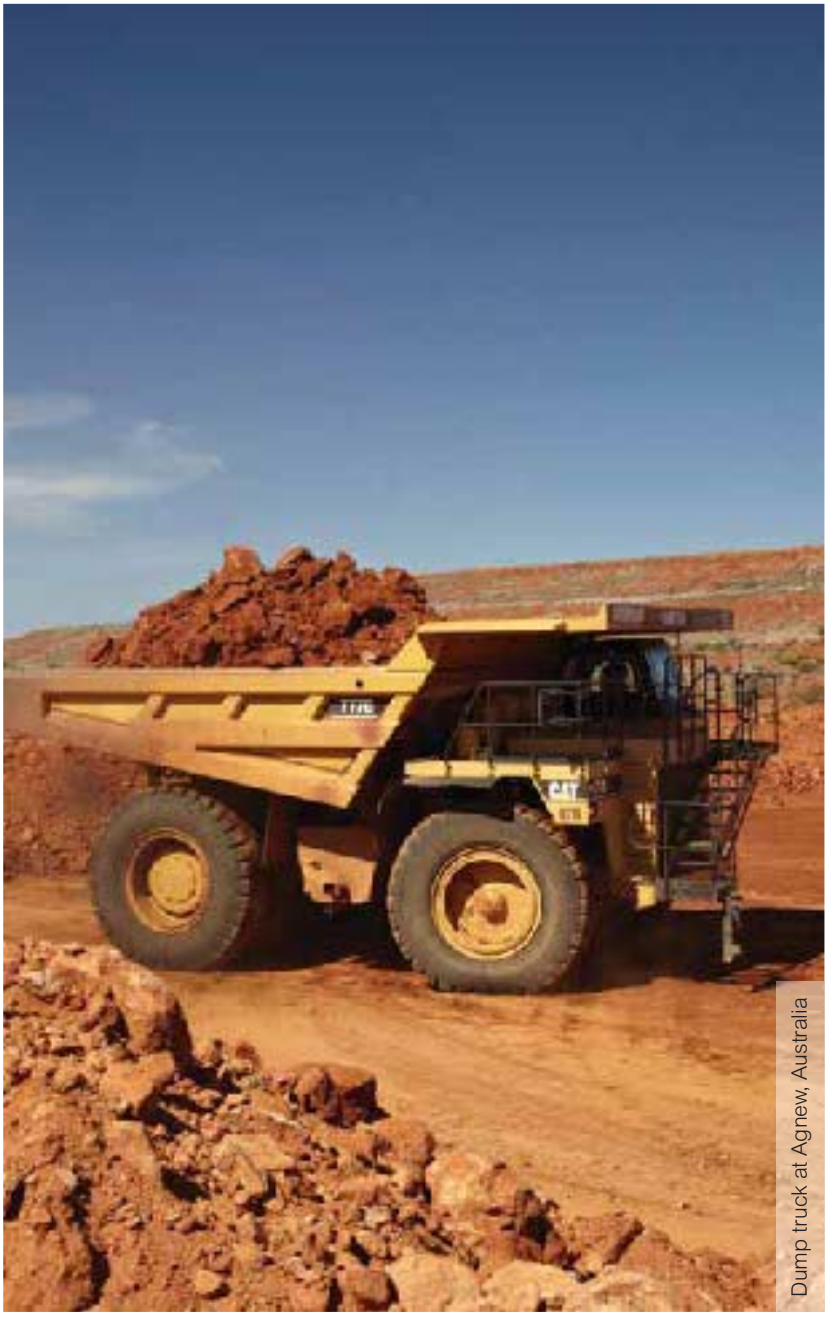
During 2011, Agnew upgraded the Waroonga underground ventilation system, resulting in further electricity savings. This included the fitting of Variable Speed Drives (VSDs) to underground fans to tailor ventilation and temperatures. In addition, we commenced the installation of VSDs to the surface high voltage fans.

Production, development and NCE margin

During 2011, total production increased to 194,000 ounces (2010: 152,000 ounces). Overall, our production performance was supported by the continuation of our approach to mining taken in 2010, which was characterised by a focus on disciplined mine scheduling and enhanced mining plans.

At the underground operations, ore mined increased from 594,000 tonnes at 8 g/t in 2010 to 621,000 tonnes at 9.7 g/t in 2011. Open pit operations recommenced in 2011, with a cutback on the Songvang pit delivering 586,000 tonnes at 1.6 g/t.

Total tonnes processed increased from 815,000 tonnes at a yield of 5.8 g/t to 935,000 tonnes at a yield of 6.5 g/t.



Dump truck at Agnew, Australia

This reflected improved underground mining performance and the greater availability of surface stockpiles after the Songvang cutback.

Lower levels of production at the start of the year pushed up our operating costs, as did the commissioning of the Songvang pit. Nonetheless, the impact on the mine's NCE margin was ameliorated by new production at Songvang, as well as higher gold prices. As a result, the mine's NCE margin improved markedly from 17% to 32%.

Outlook for 2012

We plan for Agnew to produce between 190,000 and 200,000 ounces of gold at an NCE of A$1,120/oz (US$1,120/oz) and a total cash cost of A$785/oz (US$785/oz). This plan assumes:

- Increased flexibility through the use of both high-grade underground production and lower-grade open pit production
- The initiation of mining at the Cinderella pit

3.6 Regional overview: South Africa

3.6.1 Introduction

The South Africa region not only represents our historical centre but it also continues to play a key role in the Group as a whole. This is reflected by the fact that in 2011 the region accounted for 49% of our attributable gold output (2010: 53%), 68% of our Mineral Resources (2010: 75%) and 72% of our Mineral Reserves (2010: 79%).

Our operations are concentrated within the historical gold producing region of the Witwatersrand Basin. This includes both our mature, deep underground Beatrix and KDC mines, which are mined using conventional methods. The latter is the largest mine in South Africa in terms of gold production.

The region is also home to our fully-mechanised South Deep project – the most significant gold development project in South Africa. South Deep, which is still undergoing development and ramping up production, is set to offer a mechanised, efficient and low cost operation focused on a world-class ore-body. This will help underwrite the region's long-term status as a critical contributor to Group performance.

Performance in 2011

Overview

In 2011, we continued to pursue our longstanding strategy of improving the operational sustainability of our mature South African mines – both in terms of enhancing efficiency and addressing a declining production trend. This is with the aim of leveraging the region's substantial Mineral Resource and Reserves (p120-121) well into the future.

In particular, we aim to achieve between 1.8 and 2 million ounces in production or development by 2015 – as part of our broader Group Goal of 5 million ounces.

This aim will depend on:

- The stabilisation of production and the improvement of NCE margins at our mature KDC and Beatrix mines
- Successful development and production ramp-up at our South Deep mine
- Ramping up surface production
- Recapitalisation of KDC East 4 Shaft to enhance higher grade production

During 2011, we undertook a range of improvements to reduce our costs and maximise production at KDC and Beatrix, including:

- A reduction in electricity consumption at KDC and Beatrix of 3%
- Continued cost reductions as a result of our strategic BPR programme (p48-49), including the achievement of an NCE margin of 23% at KDC (2010: 9%) and 25% at Beatrix (2010: 11%). This was partly due to cost reductions flowing from actions taken in 2010, as well as more recent initiatives such as ongoing workforce reduction efforts. Overall employee numbers continued to decline as a result of natural attrition, voluntary severance and the replacement of non-specialised contracting services by internal staff
- The embedding of our Shaft Full Potential (SFP) programme to improve the delivery of ore to the processing plants at KDC (p48). The SFP programme is now fully integrated into our management of production, and has realised significant improvements in face advance, rock fragmentation and mining quality during the latter part of 2011
- Extensive and ongoing efforts to promote Safe Production throughout our mines, to avoid safety incidents and production stoppages (see below and p56-60)

Figure 3.32: Attributable gold production (000'oz)

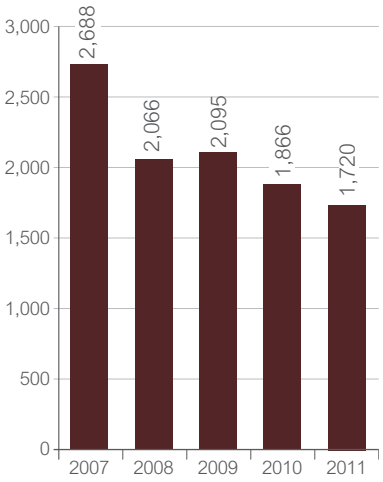


Figure 3.33: NCE margin (%) – excluding South Deep

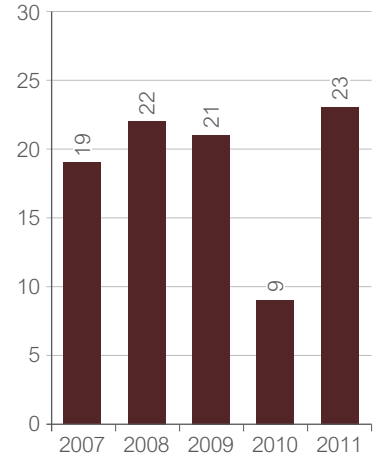
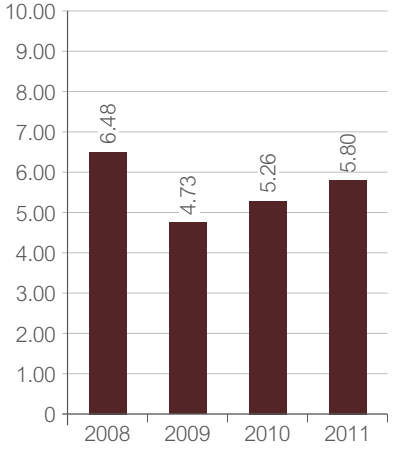


Figure 3.34: LTIFR[1]



[1] Restatement – figure for 2009 previously reported as 4.54. See p4 for explanation

In addition, we have extended mechanisation to the majority of flat development ends at the long life shafts, reducing employee exposure to safety risks. As a result of these efforts, we are continuing to address a development backlog dating from 2009, when crews were diverted to install secondary support throughout our mines.

All of our mines in South Africa are OHSAS 18001 and ISO 14001 certified, and are compliant with the International Cyanide Management Code. The Mineral Resources and Mineral Reserves are compliant with the SAMREC 2007 Code.

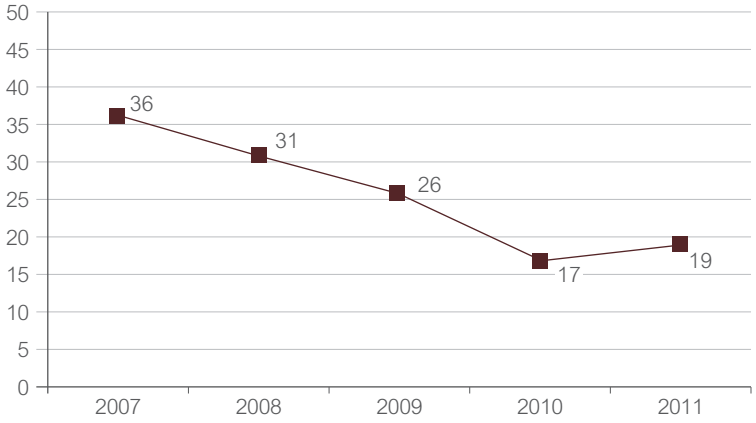
Safety

Despite a long-term trend of improving safety performance, 2011 saw a short-term regression in terms of fatalities. We had a total of 19 fatal injuries in South Africa – accounting for 95% of the Group total. This marked a 12% increase on 2010 (17 fatal injuries) but remains significantly lower than the average in the preceding five years. As a result of this latest regression, we placed renewed focus on a range of programmes, including:

The engineering-out of as many risks as possible through:

- The adoption of enhanced support systems in seismically active mining areas intersected by geological structures
- The introduction of stope netting to protect face employees from falls of ground
- The adoption of enhanced roof bolting patterns in development ends to address the risk of fall of ground
- Comprehensive bolting of the face area of all stope panels, which will be completed by the end of the first quarter of 2012
- The rolling out of safety systems on all underground rail-bound equipment – including guard communication and proximity warning systems – over the next two years

Figure 3.35: South Africa fatalities



A range of new leadership and behavioural change programmes to ensure the prioritisation of safety and compliance to standards through:

- The introduction of more intense workplace safety audits and the monitoring of hazard remediation
- Increased application of the "Stop. Think. Fix, Verify and Continue" practice
- Establishment of the Priority Misconduct Unit to prioritise and fast track disciplinary action with respect to safety related offences
- Adoption of the Mining Industry Occupational Safety and Health (MOSH) leading practice for entry examination
- Stronger enforcement of the 'No Go Zone' standard, particularly during face cleaning operations
- Deployment of behavioural based safety teams and coaches at all shafts
- Review of the bonus system to ensure greater employee focus on health and safety
- Tripartite, multi-level safety engagement with the Department of Mineral Resources and relevant labour organisations (p59)

The impact of such measures over the course of 2011 can be seen in the fact that whilst 17 fatalities took place in the first seven months of the year, only two took place during the remainder of the year.

Safety will remain the top priority for Gold Fields, principally due to the moral obligation to pursue Zero Harm, but also due to the operational impacts of incidents, which have the potential to undermine our efforts to achieve sustainable production.

KDC, South Africa

Production and NCE margin

In 2011, gold production in the South Africa region declined to 1.72 million ounces (2010: 1.87 million ounces). This reflected:

- Lower production at KDC at 1.10 million ounces (2010: 1.22 million ounces)
- Lower production at Beatrix at 347,000 ounces (2010: 377,000 ounces)
- Similar output at South Deep at 273,000 ounces (2010: 274,000 ounces) with increased mining volumes offset by lower grades

Overall production in South Africa was affected by the loss of 43,000 ounces after five days of industrial action in July 2011 (not including production wind-down and ramp-up). It was also impacted – in the case of Beatrix and KDC – by the loss of 52,500 ounces of production as a result of safety stoppages.

Nonetheless, the South Africa region saw a significant improvement in its NCE margin (excluding South Deep and its related development costs), which increased to 23% (2010: 9%), demonstrating the impact of the higher gold price received, as well as our ongoing cost-saving efforts.

Outlook for 2012

Our target remains to continue making progress towards production of between 1.8 and 2 million ounces from the South Africa region by 2015, whilst stabilising safe production at an NCE margin of 20% (excluding South Deep) in the short-term and 25% in the medium- to long-term. In 2012, we plan to achieve gold output of between 1.715 million and 1.820 million ounces at a total cash cost of US$997/oz and an NCE of US$1,473/oz.[1]

More specifically, we plan to:

- Resume our long-term downward trend in fatalities through the safety actions outlined above
- Continue development and production ramp-up at South Deep, which will partially offset potentially reduced production from KDC and Beatrix – whilst also replacing higher-cost output from these two mines with lower cost production
- Ensure stable and safe production at KDC and Beatrix and, at worst, reduce the rate of production decline
- Further reduce our energy intensity to off-set planned increases in Eskom's electricity prices (p50-51)

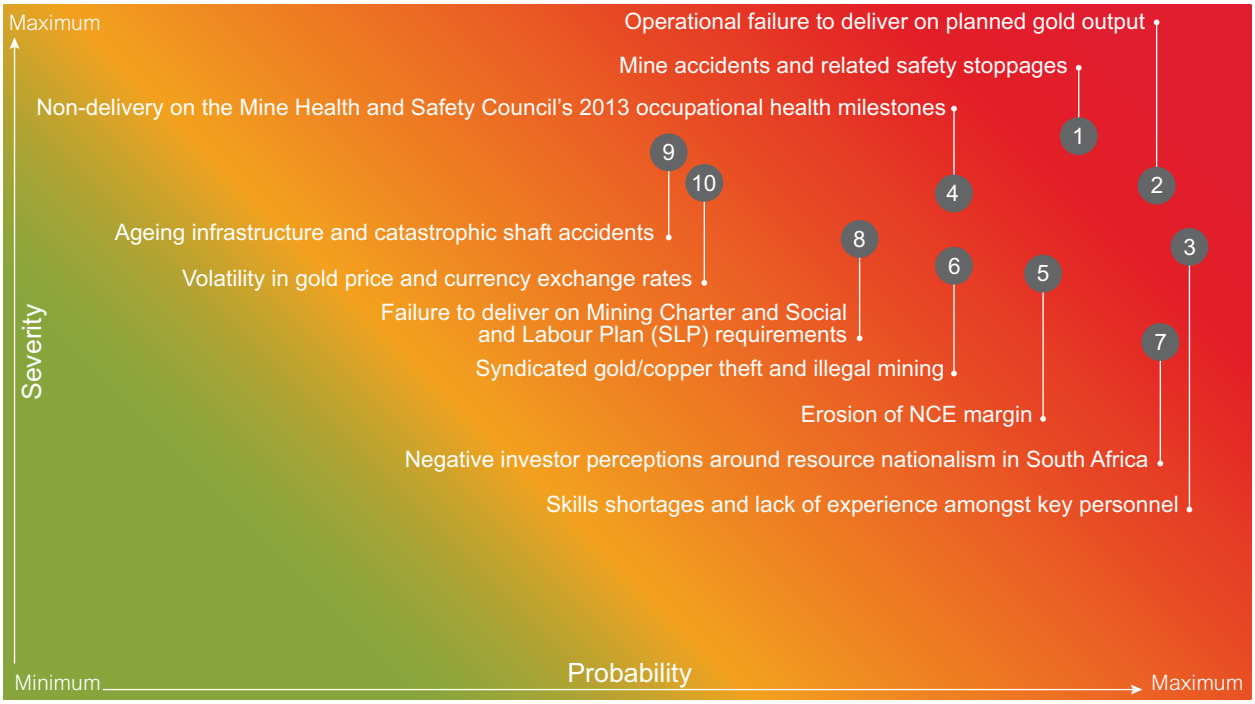
Opportunities

- Future leveraging of our strong Mineral Reserve position and well-established infrastructure
- Ongoing opportunities for cost reductions and efficiency gains through BPR
- An increase in the generation of carbon credits by the Beatrix Methane Project, the extension of methane extraction to Beatrix West and the future production of low cost energy
- A long-term strategy for developing and implementing a sustainable business solution for water management and key water issues at KDC and South Deep through the Liquid Gold project (p65)

[1] At an exchange rate of R/US$8.00

3.6.2 Top 10 South Africa region heat map

The heat map below sets out the top 10 South Africa region risks, as identified through our Enterprise Risk Management (ERM) process (p36-37).



Risk mitigating strategies	
1	• Enhanced focus on the 'engineering-out' of safety risks • Oversight through the Safety and Health Production Management Task Team (SHPMTT) • Improved safety compliance through the Safe Production Management Programme (p56-57) • Cultural transformation through effective leadership and safety behaviour
2	• Full realisation of the benefits of our Shaft Full Potential Programme (p48), including relevant initiatives relating to crew performance, quality and stope panel availability
3	• Implementation of new training initiatives through the Gold Fields Academy • Enhancement of our Employee Value Proposition and Talent Management Framework
4	• Adoption of relevant Mining Industry Occupational Safety & Health practices to reduce noise and dust exposure • Implementation of occupational health interventions • Proactive tailoring of our occupational health strategy to ensure alignment with the revised milestones
5	• Ongoing identification of cost saving opportunities • Removal of R500 million (US$63 million) from our costs over the next two years via Business Process Re-engineering (BPR) • Implementation of energy conservation measures • Improved face advance/mining quality via the Shaft Full Potential programme and review of organisational structure
6	• Implementation of protection measures at source • Intelligence gathering, investigation and increased use of detection technology
7	• Engagement with government, directly and through the Chamber of Mines • Enhanced local and national communication around our contribution to sustainable development
8	• Enhanced internal reporting on SLP performance to senior management • Ongoing, high level review of each mine's SLP and Mining Charter obligations and performance
9	• Structural integrity audits on engineering infrastructure and project management of repair/refurbishment programmes • Inspection, repair and maintenance in line with our comprehensive Planned Maintenance Strategy
10	• Optimisation of operating cost structures through BPR

3.6.3 Operation overview: KDC

KDC was established in 2010 as a result of a business merger of our Kloof and Driefontein mines. It is a large, well-established intermediate to ultra-deep-level gold mining complex, with its lowest working level around 3,350 meters below surface. It consists of a total of 11 producing shaft systems and five processing plants and is located around 60km west of Johannesburg. Despite KDC's long history of production, it retains considerable Mineral Resources and Mineral Reserves of 67.5 million ounces and 16.6 million ounces respectively.

Figure 3.36: Key operating statistics KDC

Key operating statistics	2011	2010	2009	2008	2007
Gold produced – attributable (kg)	34,218	37,790	45,362	46,430	59,948
Gold produced – attributable ('000oz)	1,100	1,215	1,458	1,493	1,927
Total cash cost (R/kg)	219,642	193,948	145,177	125,503	86,955
Total cash cost (US$/oz)	946	824	536	476	384
Notional Cash Expenditure (NCE) (R/kg)	285,017	262,141	198,646	173,500	121,684
Notional Cash Expenditure (NCE) (US$/oz)	1,228	1,114	733	658	538
Gold price (R/kg)	368,309	287,499	261,611	228,856	156,916
Gold price (US$/oz)	1,587	1,222	965	868	693
Operating profit (Rm)	5,150	3,398	4,969	4,505	3,937
Operating costs (Rm)	7,452	7,467	6,898	6,121	5,470
Operating margin (%)	41	31	42	42	42
NCE margin (%)	23	9	24	24	22

Figure 3.37: Key sustainability statistics KDC

Key sustainability statistics	2011	2010	2009	2008
Total taxation and royalties paid (Rm)	895	348	834	674
Total taxation and royalties paid (US$m)	124	48	99	82
Employee wages and benefits (Rm)	4,119	4,303	3,896	3,313
Total employees	26,335	31,033	32,196	28,693
Fatal Injury Frequency Rate (FIFR)	0.17	0.13	0.24	0.18
Lost Time Injury Frequency Rate (LTIFR)	7.95	6.31	5.26	6.72
Cyanide consumption ('000 tonnes)	2.34	2.37	1.96	1.64
CO_2-e emissions ('000 tonnes) (Scope 1&2)	3,295.9	3,348.2	3,492.3	3,311.7
Energy consumption (TJ)	12,126	12,293	12,334	12,066
Water withdrawal (million liters)	38,971	36,859	22,797	27,182

Figure 3.38: Mineral Resources and Mineral Reserves KDC

Mineral Resources and Mineral Reserves KDC	2011	% of Group total
Attributable Mineral Resources (million oz)	67.50	30%
Attributable Mineral Reserves (million oz)	16.58	21%

Performance in 2011

Overview

Notable achievements in 2011 include:

- The embedding of the merger between Kloof and Driefontein through the clustering of shafts into five operating units and the combination of all reef and waste plants under one structure
- A reduction in power consumption of approximately 8MW a year through a range of energy saving initiatives (p50-51)
- Continued reduction in the labour force through natural attrition and voluntary severance
- A record achievement of over two million fatality free shifts in the fourth quarter

During 2011, KDC continued to implement its Shaft Full Potential programme. This is optimising operational dynamics such as:

- Crew performance (e.g. reduced safety incidents and quality blasting of available face length)
- Mining quality (e.g. optimal fragmentation and application of our management principles to high-grade panels)
- Panel availability (including improved access to the stope face)

The programme is also addressing issues such as production planning, leadership development and infrastructure rehabilitation. In addition, a number of practical operational initiatives were advanced that will help improve the longer-term sustainability of the mine.

These included:

- Continued use of around 40 mechanised rigs on flat-end development at the long-life shafts
- Introduction of a modular, mobile Python processing system for accelerated treatment of surface rock waste material (p53)

- The K4 Shaft rehabilitation project, which is focused on upgrading infrastructure and shaft capacity to accelerate higher-grade production
- The Mpilo project to recover residual gold from previously mined areas
- The dropdown of KDC West Hlanganani (formerly Driefontein 5) Shaft below 50 level, which is in feasibility
- Ongoing rehabilitation of steel work in shafts
- Examination of the potential for mechanised mining of remaining high grade pillars, including 2 million ounces that were previously written off

Energy efficiency and carbon emissions

Around 18% of KDC's total costs relate to energy. The mine undertook a number of measures to address energy efficiency in 2011, including:

- Commissioning the first of our three chamber pipe feed system to improve pumping efficiency, which will realise full savings in 2012
- Pilot operation of an energy recovery turbine to generate electricity from downcast water
- Introduction of high efficiency ventilation fans
- Sealing of isolated and mined-out areas to reduce ventilation demands
- Auditing of underground air and water leaks

As a result of such measures, we have reduced power demand by 8MW a year from 2010. This has off-set some of the 26% increase in electricity tariffs imposed by state energy utility Eskom. Furthermore, they are helping reduce our carbon profile in South Africa – a key issue as the government has announced plans to introduce taxes on carbon emissions from 2013 onwards (p68).

Production, development and NCE margin

During 2011, production at KDC fell to 1.10 million ounces (2010: 1.22 million ounces), due to a number of factors, including:

- Unplanned mine-wide safety stoppages and a number of localised safety stoppages, which resulted in the loss of 47,000 ounces of production
- Interventions aimed at reducing employees exposure to potential seismic and fall-of-ground accidents
- Five days of lost production resulting from industrial action in July 2011, which led to a loss of 43,000 ounces
- Reductions in the face length and area available for mining, mainly due to safety considerations
- Revised work organisation to improve safety, including the removal of the night shift in high risk areas
- Reduced grades at selected shafts at KDC West

Production is derived from underground mining as well as the processing of surface waste rock dump material. The area mined averaged 62,888 m^2 per month during 2011, with underground ore processed at 401,000 tonnes per month and surface material treated at 501,000 tonnes per month. Underground tonnage of 4.8 million tonnes was processed at an average yield of 3.2 g/t.

KDC advanced 45km of main development in 2011. On-reef development totalled 7.7km at an average centimeter grammes per tonne (cmg/t) of 2,100 cmg/t.

At the start of 2011, the mine's operational costs fell as a result of our cost-savings initiatives, including workforce reduction, lower electricity consumption and decreased store costs. They subsequently rose, however, as a result of the increase in electricity tariffs and additional mine support costs.

Nonetheless, the mine's NCE margin rose to 23% (2010: 9%) – supported by the higher gold price received, our energy efficiency measures and natural attrition among the workforce.

Outlook for 2012

We plan for KDC to produce between 1.06 and 1.13 million ounces of gold at an NCE of US$1,360/oz and a total cash cost of US$1,000/oz. This will rely on:

- Further reducing fatalities and other key safety indicators
- Ramp up in production from low cost surface sources through additional Python plants
- Increased development and improvements in mining volumes, mix and quality
- Continued implementation of BPR to save around R500 million (US$63 million) over two years
- Further improvements in energy efficiency, including investigation of the potential for a 'compressed air-less' mine and an ice-based underground cooling system to reduce pumping demands
- Improvements to flat-end development advance rates through enhanced mechanised development performance
- More efficient movement of people, materials and rock

Beyond this, we are implementing a longer-term mine sustainability strategy based on production optimisation, cost minimisation and safety excellence. Execution of this strategy will rely on, for example:

- Appropriate infrastructure (including equipment and capital investment)
- An effective and 'fit for the future' workforce, supported by the '24 Hours' programme (p140), strong training, appropriate incentives and behavioural support

3.6.4 Operation overview: Beatrix

Our underground Beatrix mine has been in production since 1985. Beatrix was established, in its current form, following the incorporation of the St Helena Gold Mine into Freegold in 2002.

Performance in 2011

Overview

Notable achievements in 2011 include:

- An improvement in the NCE margin from 11% to 25% through the effective management of face length flexibility, labour, volume and grade
- Generation of R1.2 million (US$166,000) through the sale of 30,000 Certified Emissions Reductions (p68)
- Enhanced ore reserve development – including the introduction of hydro-powered, remote controlled flat-end development rigs at 3 Shaft – resulting in greater flexibility
- Accelerated extraction of the 2 Shaft pillar

Energy efficiency and carbon emissions

Like KDC, Beatrix undertook a number of measures to address rising energy costs in South Africa – as well as potential carbon regulation. These included:

- Ongoing application of energy-efficient drill rigs and rock drills at 3 Shaft – reducing reliance on energy intensive compressed air infrastructure
- Gradual reduction of its underground footprint
- More efficient trucking of waste rock and ore
- Targeted sealing of isolated and mined out areas at the South Section to reduce ventilation demands
- Optimisation of our surface fans

Figure 3.39: Key operating statistics Beatrix

Key operating statistics	2011	2010	2009	2008	2007
Gold produced – attributable (kg)	10,787	11,715	12,443	12,696	15,022
Gold produced – attributable ('000oz)	347	377	400	408	483
Total cash cost (R/kg)	222,073	194,406	169,847	142,045	102,323
Total cash cost (US$/oz)	957	826	627	539	452
Notional Cash Expenditure (NCE) (R/kg)	279,957	255,066	228,128	196,282	147,963
Notional Cash Expenditure (NCE) (US$/oz)	1,206	1,084	842	745	654
Gold price (R/kg)	371,772	287,187	259,126	231,750	157,249
Gold price (US$/oz)	1,602	1,220	956	879	695
Operating profit (Rm)	1,602	1,026	1,021	1,052	746
Operating costs (Rm)	2,409	2,339	2,203	1,891	1,616
Operating margin (%)	40	30	32	36	32
NCE margin (%)	25	11	12	15	6

Figure 3.40: Key sustainability statistics Beatrix

Key sustainability statistics	2011	2010	2009	2008
Total taxation and royalties paid (Rm)	35	18	2	1
Total taxation and royalties paid (US$m)	5	3	0	0
Employee wages and benefits (Rm)	1473	1422	1307	1141
Total employees	9,151	9,485	10,327	11,151
Fatal Injury Frequency Rate (FIFR)	0.19	0.18	0.10[1]	0.08
Lost Time Injury Frequency Rate (LTIFR)	2.95	3.31	3.92[2]	4.74
Cyanide consumption ('000 tonnes)	0.88	0.92	0.88	0.81
CO_2-e emissions ('000 tonnes) (Scope 1&2)[3]	798.6	845.3	901.8	892.8
Energy consumption (TJ)	3,234	3,325	3,470	3,508
Water withdrawal (million liters)	10,226	10,834	14,866	16,678

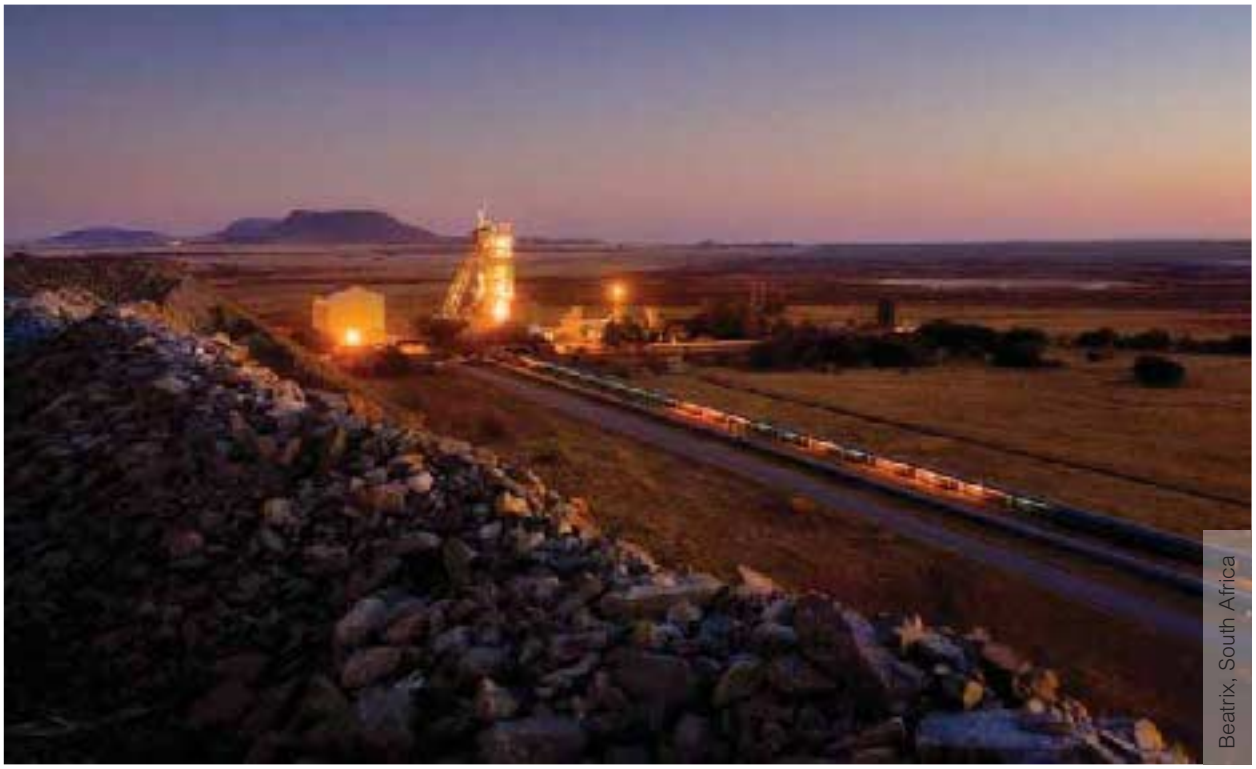
Figure 3.41: Mineral Resources and Mineral Reserves Beatrix

Mineral Resources and Mineral Reserves Beatrix	2011	% of Group total
Attributable Mineral Resources (million oz)	11.28	5%
Attributable Mineral Reserves (million oz)	4.96	6%

In addition, the Beatrix Methane Project became partially operational, flaring 200 liters of methane a second from underground sources and 120 liters a second from surface exploration boreholes. We plan to raise this to 800 liters a second through the ramp-up and installation of a second extraction system and a new flare at the Beatrix West section.

Longer-term we are planning to develop a power generation plant using the methane to potentially produce 6 MW of power for Beatrix – around 8% of its current total usage (p68).

[1] Restatement – figure previously reported as 0.06. See p4 for explanation
[2] Restatement – figure previously reported as 3.71. See p4 for explanation
[3] Excludes fugitive mine methane


Beatrix, South Africa

Production, development and NCE margin

During 2011, Beatrix produced 347,000 ounces (2010: 377,000 ounces) – marginally short of its production target. The stability of its performance was temporarily undermined by a number of factors, including:

- The presence of smectite, which impeded production at 4 Shaft – as well as a number of equipment failures
- Five lost days of production in July as a result of industrial action
- An increase in fatality-related safety stoppages (as well as a number of localised stoppages), which resulted in the loss of 5,500 ounces of production

In an effort to address the increase in fall-of-ground fatalities at the mine we installed in-stope roof bolting at 1, 2 and 3 Shafts and 'blast-on props' at 4 Shaft.

Underground tonnes milled totaled 2.34 million tonnes at a yield of 4.4 g/t, due to a low mine call factor. Various initiatives to improve the mine call factor, including improved fragmentation and water control, are being implemented. A change in explosives during the fourth quarter resulted in a marked improvement in fragmentation. Furthermore all hydropower drilling machines at the North Section were fitted with connections to capture 60% of the water used during drilling. A total of 1.48 million surface tonnes were milled at a yield of 0.3 g/t.

Total main development for 2011 was 23.4km, of which 5.7km was on-reef – returning a value of 1,237 cmg/t.

Operating costs remained relatively steady, but were impacted by the 28% annual increase in electricity prices as well as the annual wage increase. This was partially off-set by strong cost controls – including a particular focus on energy efficiency. In addition, high gold prices mean we have been able to process low grade surface stockpiles profitably. As a result, the mine's NCE margin improved from 11% to 25%.

Outlook for 2012

We plan for Beatrix to produce between 350,000 and 370,000 ounces of gold at an NCE of US$1,280/oz and a total cash cost of US$960/oz. This will rely on:

- Enhanced focus on safety to eliminate fatalities and reduce safety-related stoppages
- Stronger focus on mining quality through reduced underground dilution and gold loss
- Optimisation of reef and waste processing to reduce ore re-handling costs and extract incremental ounces
- Maintenance of capital expenditure on definition drilling to minimise geological and grade risk
- Extension of methane extraction to Beatrix West and completion of the energy generation feasibility study for the Beatrix Methane Project (p68)

3.6.5 Operation overview: South Deep

South Deep is a long-life, deep-level mechanised gold mine operating at between 2,000 and 3,000 meters below surface. The mine, which is still undergoing development, was acquired by Gold Fields in 2006 and is located 45km south-west of Johannesburg. South Deep is one of the greatest undeveloped ore bodies in the world.

Performance in 2011

Overview

Production at South Deep was at similar levels to 2010. Notable achievements in 2011 include:

- A 15% increase in managed Mineral Reserves to 39.6 million ounces (Dec 2010: 34.5 million)
- Completion of the Centralised Tailings Storage Facility (p64-65) and the first deposition of tailings
- Completion of the sinking of the Ventilation Shaft
- Innovative installation of the award-winning A-frame headgear at the Vent Shaft (p55, online)
- Completion of 1 million fatality free shifts in August 2011
- Progress in the implementation of South Deep's Social and Labour Plan

In 2011, we invested a total of R1.98 billion (US$275 million) in the development of South Deep, which is on-schedule in all key areas. For example, development below 95 Level exceeded the 2011 operational plan by 3% by the end of the year. Progress has been supported by continual re-modelling of the ore-body to enhance mine design, improved scheduling, the application of our rigorous Capital Investment Framework, as well as full mechanisation.

Figure 3.42: Key operating statistics South Deep

Key operating statistics	2011	2010	2009	2008	2007
Gold produced – attributable (kg)	8,491	8,524	7,373	5,124	8,630
Gold produced – attributable ('000oz)	273	274	237	165	278
Total cash cost (R/kg)	249,146	215,157	183,358	226,776	138,944
Total cash cost (US$/oz)	1,073	914	677	860	614
Notional Cash Expenditure (NCE) (R/kg)	485,314	431,335	379,004	403,044	214,629
Notional Cash Expenditure (NCE) (US$/oz)	2,091	1,833	1,398	1,529	948
Gold price (R/kg)	363,538	288,022	259,921	231,187	156,899
Gold price (US$/oz)	1,566	1,224	959	877	693
Operating profit (Rm)	948	584	509	-24	120
Operating costs (Rm)	2,138	1,871	1,408	1,209	1,242
Operating margin (%)	31	24	27	-2	9
NCE margin (%)	-34	-50	-46	-74	-37

Figure 3.43: Key sustainability statistics South Deep

Key sustainability statistics	2011	2010	2009	2008
Total taxation and royalties paid (Rm)	15	0	0	0
Total taxation and royalties paid (US$m)	2	0	0	0
Employee wages and benefits (Rm)	934	742	565	578
Total employees	3,503	3,077	2,683	2,488
Fatal Injury Frequency Rate (FIFR)	0.04	0.07	0.08	0.94
Lost Time Injury Frequency Rate (LTIFR)	1.67	2.87	2.74	12.45
Cyanide consumption ('000 tonnes)	0.81	0.55	0.47	0.76
CO_2-e emissions ('000 tonnes) (Scope 1&2)	546.7	572.5	559.1	463.0
Energy consumption (TJ)	2,092	2,171	2,039	1,719
Water withdrawal (million liters)	4,674	2,926	2,770	3,870

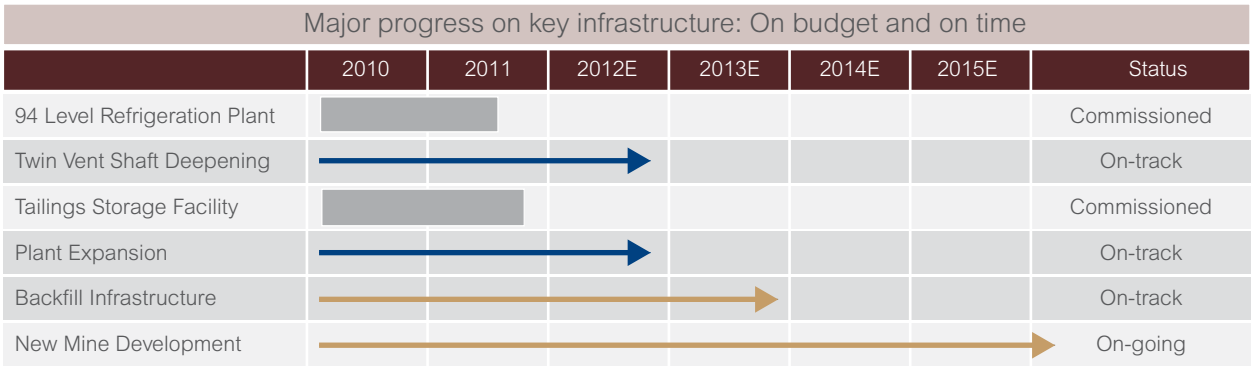
Figure 3.44: Mineral Resources and Mineral Reserves South Deep

Mineral Resources and Mineral Reserves South Deep	2011	% of Group total
Attributable Mineral Resources (million oz)	75.22	35%
Attributable Mineral Reserves (million oz)	36.58	45%

The completion of the Vent Shaft to enhance our hoisting capacity remains on-track for commissioning by the second half of 2012. In 2011, we completed the final portion of shaft sinking from 100a Level to 110 Level – with commissioning on-track for mid-2012. This will add the substantial new hoisting capacity needed to boost future production. This year also saw the completion of the head gear at the Vent Shaft, using one of the largest fabricated steel head gear frames in the world. This marked the completion of our 'early lift' strategy and de-bottlenecked final shaft construction and commissioning activities scheduled for 2012.

We also initiated the expansion of the South Deep Metallurgical Plant, which is being constructed on an accelerated schedule – with commissioning planned for the second half of 2012. This will increase capacity from 220,000 to 330,000 tonnes per month.

Figure 3.45: Capital projects progress at South Deep



Although there have been delays around the Full Plant Tailings (FPT) backfill project, these are not expected to have a material impact as there is excess capacity at the Classified Cycloned Tailings backfill. The first FPT backfill placement is due in late-2012. We are intensifying our monitoring of the FPT backfill project to avoid further delays.

Production, development and NCE margin

Production was maintained at 273,000 ounces (2010: 274,000) – largely as a result of lower grades of ore mined and processed. This was short of our target, though we are confident of achieving an annual production run-rate for South Deep of 700,000 ounces by end-2015.

Production build-up was slower than anticipated due to delays in the application of the de-stress methodology that is required to open up the ore body. This was largely due to shortfalls in the availability and utilisation of the mechanised fleet and occasional shortages of relevant skills. Plans are in place to augment existing on-site training with a dedicated surface training centre for operators and maintenance personnel, which will be completed in 2012. Furthermore, additional underground workshops should be ready by early 2013.

Furthermore, as with our other operations in South Africa, South Deep lost five days of production as a result of industrial action in July 2011.

During 2011, underground reef tonnes processed increased by 12% to 1.6 million tonnes. The underground yield decreased from 4.8 g/t in 2010 to 4 g/t in 2011, primarily due to increased infrastructure development through the lower grade reefs. This development was necessary to access additional de-stress mining projects and to provide excavations for the movement of ore to the new mine area.

Development increased from 10,848 meters in 2010 to 12,018 meters in 2011. New mine capital development in Phase 1, sub 95 level, increased from 3,384 meters to 4,284 meters, development in the current mine areas above 95 level improved from 6 570 meters to 6,730 meters and vertical development was extended from 894 meters to 1,004 meters. Operational costs at the mine increased during 2011. This reflected the carrying out of maintenance work early in the year, a 28% increase in annual electricity prices, as well as increased costs associated with the maintenance of mechanised equipment.

As expected, South Deep's NCE margin remained negative at –34% due to the significant capital investment that is still taking place at the mine. Nonetheless, this was an improvement on 2010, when it was at -50%.

We expect South Deep to be cash positive during 2013 (at current gold prices), as production increases and the capital development phase is completed.

Outlook for 2012

We plan for South Deep to produce between 305,500 and 328,000 ounces of gold at an NCE of US$2,090/oz and a total cash cost of US$1,030/oz. This will rely on:

- The achievement of targeted levels of de-stress mining
- Continued sub-95-level development, with a target of about 4,500 meters a year
- Commissioning of the Vent Shaft to gradually build-up to full hoisting capacity of 195,000 tonnes a month. This will raise the combined ore-hoisting capacity of South Deep's three shafts to 330,000 tonnes a month
- Commissioning of the expanded South Deep Metallurgical Plant to mill 330,000 tonnes per month
- Establishment of an on-site mechanised mining training centre
- Completion of the FPT backfill project

The removal of hoisting, milling and backfill constraints in 2012 will eliminate key bottlenecks – and will help ensure there is sufficient infrastructure, ventilation and cooling in place to ramp-up production in the next three years to deliver 330,000 tonnes per month to the mill.

3.7 Regional overview: South America

3.7.1 Introduction

Our South America region currently has only one operation, the Cerro Corona copper and gold mine, in which we hold a 98.5% interest through our subsidiary company Gold Fields La Cima S.A.A. This follows an offer to minorities at the beginning of 2011 when our shareholding in La Cima was 80.7% (p118). La Cima remains separately listed on the Lima Stock Exchange.

Peru is also home to our Chucapaca advanced exploration project, which is located in the south of the country. This project is being managed by our subsidiary exploration company Canteras del Hallazgo S.A.C., in which we hold a 51% interest and Peruvian mining group Buenaventura holds a 49% interest.

It is expected that we will reach a development decision on Chucapaca in 2012. In anticipation of this decision, we are implementing an extensive, early-stage community engagement and socio-economic plan to gain the support of surrounding communities.

Opportunities

- Ongoing potential to convert Mineral Resources into Mineral Reserves at Cerro Corona
- Well-established and supportive relations with local stakeholders at Chucapaca and Cerro Corona
- Continued government promotion of mining investment in South America's fastest growing economy

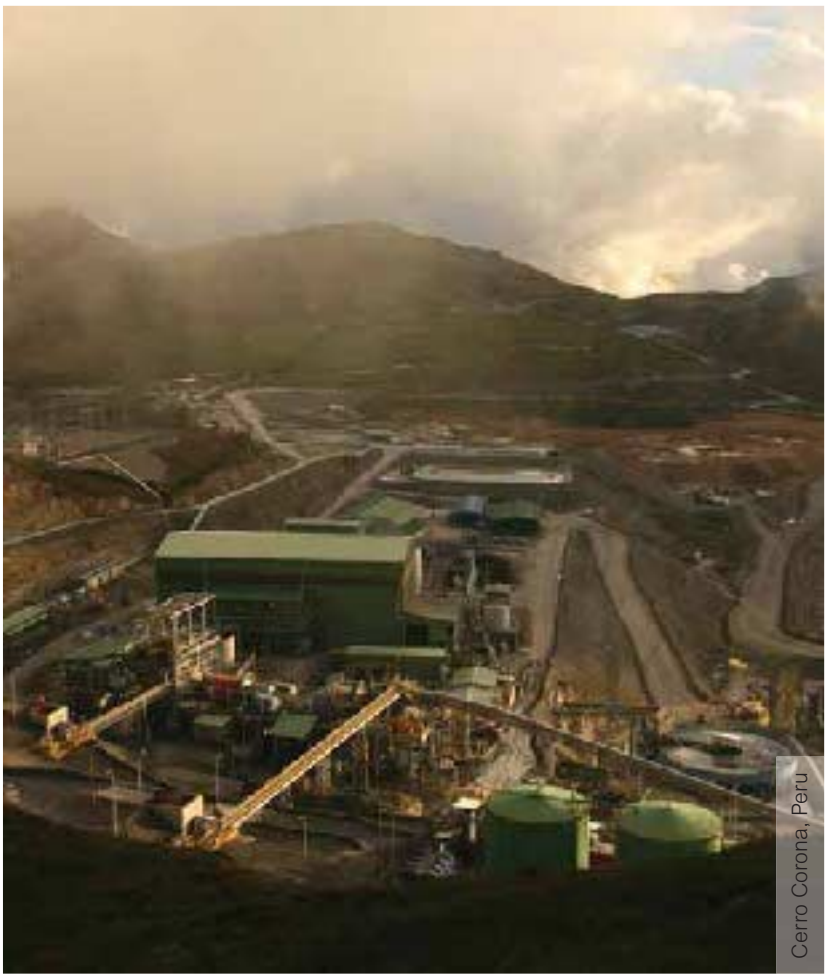

Cerro Corona, Peru

Figure 3.46: Attributable gold equivalent production ('000oz)

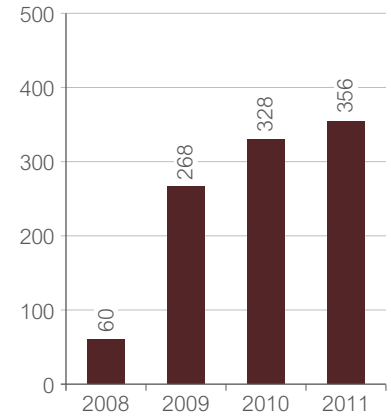


Figure 3.47: South America region NCE margin (%)

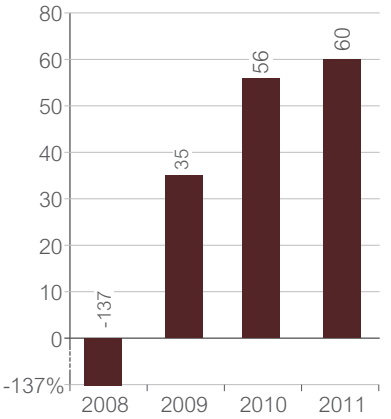
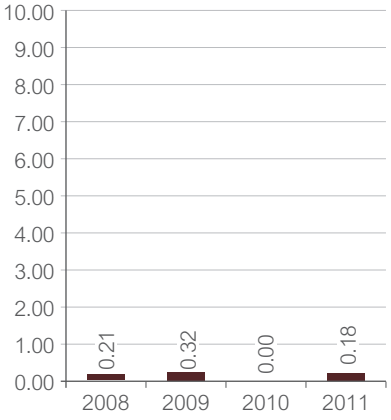


Figure 3.48: LTIFR[1]



[1] Restatement – figure for 2009 previously reported as 0.00. See p4 for explanation

3.7.2 Top 10 South America region heat map

The heat map below sets out the top 10 South America region risks, as identified through our Enterprise Risk Management (ERM) process (p36-37).

Risk mitigating strategies	
1	• Direct engagement with government • Participation in industry engagement efforts through the Chamber of Mines
2	• Development of a dedicated talent management programme with Group support • Focus on the maintenance of a strong Employee Value Proposition
3	• Ongoing implementation of high-impact socio-economic initiatives • Enhanced focus on transparency around – and delivery of – our socio-economic commitments
4	• Implementation of cost containment initiatives • Renewed negotiations with contractors
5	• Implementation of road safety training, as well as the monitoring of driving behaviour and road conditions • Implementation of accident prevention and mitigation programmes
6	• Increased focus on internal auditing to pre-empt compliance with regulatory requirements • Enhanced analysis and awareness-raising around evolving regulatory requirements
7	• Renegotiation of contracts and supplier training • Ongoing market research and identification of additional suppliers of key materials and services
8	• Enhanced co-ordination with authorities • Ongoing and proactive participation in relevant industry associations
9	• Implementation of preventative contractor reviews to avoid non-compliance • Ongoing local and external auditing of contractors
10	• Implementation of a threat-awareness programme for key personnel • Implementation of the Regional Crisis Management Team

3.7.3 Operation overview: Cerro Corona

Cerro Corona, which is currently the most profitable mine in our Group, is located in the highest part of the western Cordillera of the Andes Mountains in northern Peru and produces gold and copper from a large open pit. The copper-gold concentrate is trucked to the port of Salaverry for export.

Performance in 2011

Overview

Notable achievements relating to the Cerro Corona mine in 2011 include:

- A first place award in the open-cast Peruvian Annual Mining Safety competition for the second year running
- Completion of the third raise of our tailings dam
- A 15% increase in the Mineral Reserves to 6.1 million gold equivalent ounces

This recently established mine continues to perform strongly. In 2011, it exceeded its design capacity and base case planning in the following respects:

- Plant throughput of 802 tonnes per hour compared to a design capacity of 775 tonnes/hour
- Plant availability that is just ahead of the design availability of 91.32%
- Gold equivalent production that is ahead of budget

Figure 3.49: Key operating statistics Cerro Corona

Key operating statistics	2011	2010	2009	2008	2007
Gold produced – attributable equivalent ('000oz)	356	328	268	60	n/a
Total cash cost (US$/oz)	437	363	361	380	n/a
Notional Cash Expenditure (NCE) (US$/oz)	592	532	626	1,560	n/a
Gold price (US$/oz)	1,463	1,201	970	658	n/a
Operating profit (US$m)	403	341	206	19	n/a
Operating costs (US$m)	157	146	122	32	n/a
Operating margin (%)	72	71	62	43	n/a
NCE margin (%)	60	56	35	-137	n/a

Figure 3.50: Key sustainability statistics Cerro Corona

Key sustainability statistics	2011	2010	2009	2008
Total taxation and royalties paid (US$m)	126	73	46	1
Employee wages and benefits (US$m)	49	33	22	9
Total employees	367	350	337	n/a
Fatal Injury Frequency Rate (FIFR)	0	0	0	0
Lost Time Injury Frequency Rate (LTIFR)	0.18	0.00	0.32[1]	0.21
Cyanide consumption ('000 tonnes)	0.13	0.14	0.08	n/a
CO_2-e emissions ('000 tonnes) (Scope 1&2)	70.8	49.4	22.8	n/a
Energy consumption (TJ)	1,006	895	425	n/a
Water withdrawal (million liters)	3,582	574	187	n/a

Figure 3.51: Mineral Resources and Mineral Reserves Cerro Corona

Mineral Resources and Mineral Reserves Cerro Corona	2011	% of Group total
Attributable Mineral Resources (million oz)	7.56	4%
Attributable Mineral Reserves (million oz)	6.01	7%

During 2011, the mine benefited from a processing optimisation programme initiated in late 2010. Results show that the programme – which included improved reagent dosing – increased recoveries by 2%-3%. Recovery is currently 65% for gold and 83% for copper.

A number of new projects have been implemented by our Metallurgical Task Team to further improve recoveries and throughput. These include improved mechanical slurry conditioning, gravimetric concentration and automatic reagent dosing.

A total of 15,000 meters of infill drilling has been carried out on the mine since 2010, with special focus on the confirmation of mineral reserves at depth. In addition, we investigated the feasibility of an expansion of our tailings and waste storage capacity, which resulted in an increase in the Mineral Reserves from 5.3 million ounces to 6.1 million ounces during 2011. Cerro Corona is OHSAS 18001 and ISO 14001 certified and compliant with the International Cyanide Management Code.

[1] Restatement – figure previously reported as 0.00. See p4 for explanation

Cerro Corona, Peru

Production, development and NCE margin

Managed production at Cerro Corona decreased by 6% to 383,000 gold equivalent ounces (2010: 406,000 ounces). This comprised gold production of 161,000 ounces (2010: 152,000) and copper production of 38,641 tonnes (2010: 41,402). Despite an increase in the absolute amount of gold produced, the copper price fell relative to the previous year – reducing gold equivalent production. Attributable production, however, was up from 328,000 ounces to 356,000 ounces as a result of the buyout of minority shareholders.

During 2011 a total of 12.59 million tonnes were mined compared with 13.24 million tonnes in 2010, in line with the operating plan. At 6.58 million tonnes, ore mined during 2011 was 6% up on the previous year, while gold and copper yields during 2011 were similar to the previous year at 0.8 g/t and 0.6 g/t respectively.

The mine's NCE margin increased from 56% in 2010 to 60% in 2011. Cerro Corona continues to have the highest NCE margin of all our operations – as well as the lowest costs (at US$592/oz NCE). As a result, it remains a major cash-contributor to the Group.

Outlook for 2012

In 2012, we plan to produce between 325,000 and 350,000 gold equivalent ounces at an NCE of U$780/eq-oz and cash costs of US$515/eq-oz. This plan will rely on:

- Ongoing process plant optimisation
- Completion of a feasibility study for a heap leach process for the existing stockpiled oxide ores
- Investigation of a potential expansion at our sulphide plant
- Implementation of a drilling programme to support the future expansion of Cerro Corona

3.8 Regional overview: West Africa

3.8.1 Introduction

Production in the West Africa region is focused on our Damang and Tarkwa open pit mines, which are located near one another in south-western Ghana. Tarkwa is Africa's largest open pit gold mine by production, with a substantial and well-defined Mineral Resource position. Damang, which is smaller, is expected to play an increasingly important role due to successful near-mine exploration.

Gold Fields has a major exploration prospect at Yanfolila in Mali (p111). A further increase in its defined Mineral Resources and completion of an updated scoping study are expected by the end of 2012.

Performance in 2011

Overview

During 2011, we completed a US$667 million acquisition of IAMGOLD's 18.9% indirect stake in the Tarkwa and Damang mines. This raised our interest in both operations from 71.1% to 90% – with the Government of Ghana holding the balance.

We maintained our focus on growing production in line with our 2015 Group Goal, whilst optimising our NCE margin. This is within a context in which we are seeking to ensure the long-term commercial sustainability of our operations in Ghana, through:

- Growth of our Mineral Resources and Mineral Reserves at Damang
- Optimisation of production and leveraging of assets at Tarkwa

The cost base of our Ghanaian operations is facing a number of upward pressures, including rising input costs (including labour), an increase in royalties from 3% to 5% and a range of new taxes on the mining sector (p155-156).

Attempts to improve our cost structure were supported by:

- The 'feed-through' of existing Business Process Re-engineering (BPR) efforts at both mines (p49)
- The entrenchment of owner-maintenance at Tarkwa (p94)
- The introduction of owner mining and the entrenchment of owner-maintenance at Damang (p96)

Damang and Tarkwa are OHSAS 18001 and ISO 14001 certified and compliant with the International Cyanide Management Code.

Production and NCE margin

Managed production in West Africa declined by 3% in 2011 to 935,000 ounces (2010: 963,000 ounces) but attributable production improved by 9% to 750,000 ounces (2010: 685,000 ounces), due to the buyout of the minorities. Over the same period, the regional NCE margin improved to 39% (2010: 29%).

Outlook for 2012

The regional target of 1 million ounces in production or development by 2015 remains our core objective. In 2012, we plan to achieve managed gold output of between 930,000 and 970,000 ounces at a total cash cost of US$700/oz and an NCE of US$1,091/oz. In particular, we are planning to:

- Continue near-mine exploration at Damang
- Continued drilling at Yanfolila to establish the minimum Mineral Resource of 1.5 million ounces required for project development
- Implement a drilling programme to further define the cut-back potential of Tarkwa's active pits

Opportunities

- A strong social licence to operate amongst local communities
- Potential for further production growth through near-mine exploration and development at Damang

Figure 3.52: Attributable gold production ('000oz)

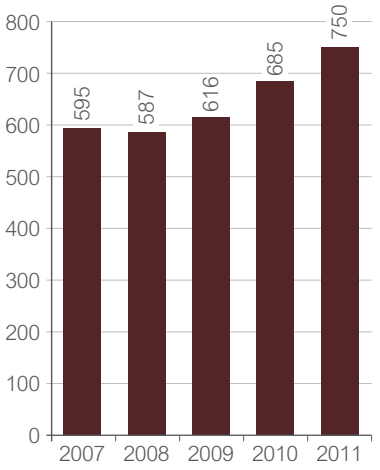


Figure 3.53: NCE margin (%)

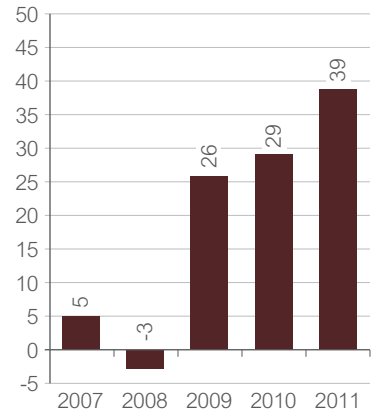
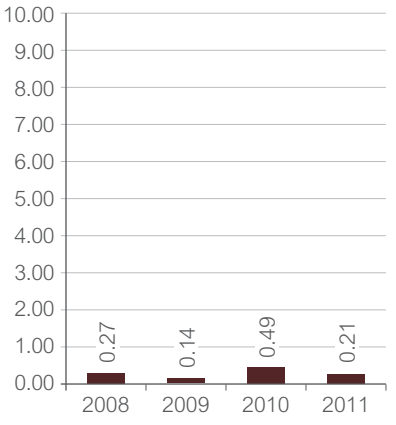


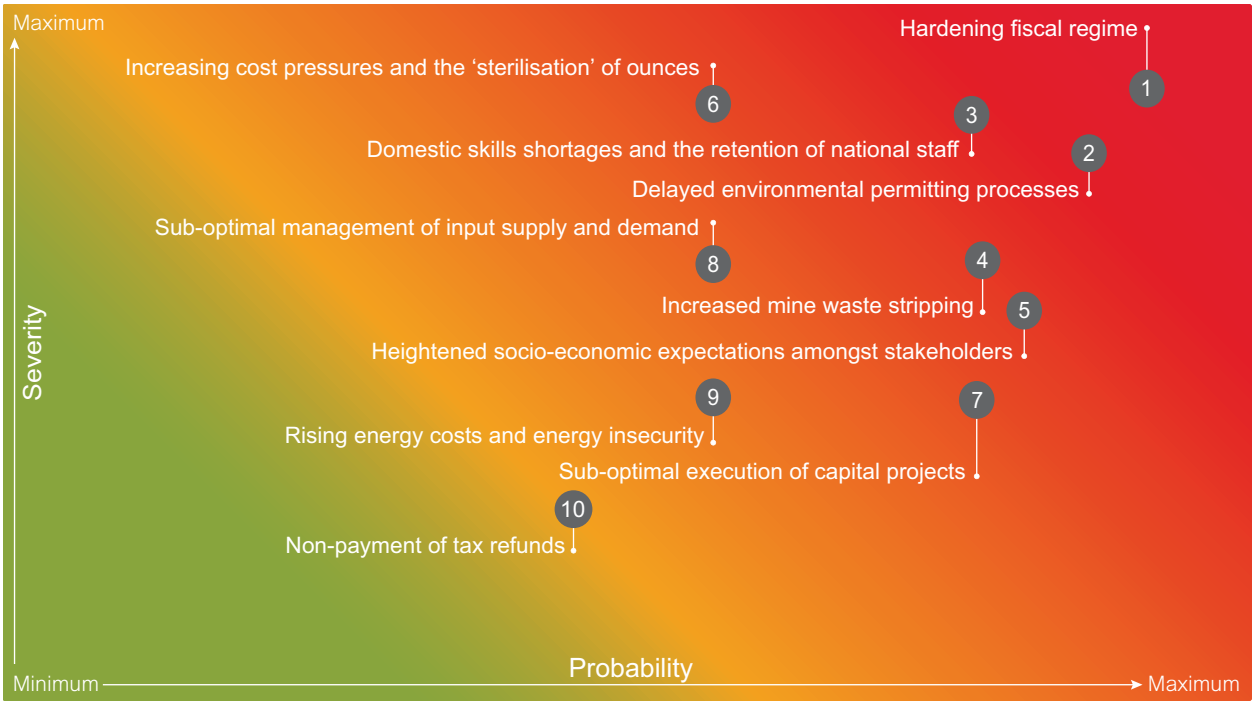
Figure 3.54: LTIFR[1]



[1] Restatement – figure for 2010 previously reported as 0.44. See p4 for explanation

3.8.2 Top 10 West Africa region heat map

The heat map below sets out the top 10 West Africa region risks, as identified through our Enterprise Risk Management (ERM) process (p36-37).



Risk mitigating strategies	
1	• Enhanced communication of the national and local economic benefits delivered by Gold Fields • Direct engagement of government in support of a 'level fiscal playing field'
2	• Ongoing efforts to maintain transparent and constructive relations with the permitting authorities
3	• Implementation of employee development programmes to enhance long-term incentives • Improved remuneration and benefits, as well as regular surveys of sector norms
4	• Investment in support infrastructure to ensure heavy mining equipment is maintained to required standards • Ongoing application of Business Process Re-engineering (BPR) to reduce costs • Implementation of heavy mining equipment 'swing units' to maintain production capacity during major rebuilds
5	• Enhancement of internal sustainable development structures and operating models • Ongoing, proactive engagement with communities, local officials and other stakeholders • Compliance to environmental monitoring requirements by regulators
6	• Implementation of BPR to reduce costs • Implementation of energy efficiency measures • Enhancement of our capital project management approach
7	• Comprehensive review of project execution processes and performance • Enhancement of capital project management approach
8	• Enhancement of supply chain management structures • Regular review of minimum/maximum inventory levels
9	• Ongoing identification of additional/alternative energy supply options • Implementation of energy efficiency measures • Ongoing monitoring of the domestic power sector
10	• Engagement of the Government of Ghana through the Chamber of Mines • Direct engagement of the Government of Ghana in support of an equitable fiscal environment

3.8.3 Operation overview: Tarkwa

Our Tarkwa mine is located in south-western Ghana, about 300km west of Accra. It consists of six open pits, two heap leach facilities and a CIL plant. The operation is currently mining multiple-reef horizons from open pits and there is potential for underground mining in the future.

Performance in 2011

Overview

Notable achievements in 2011 include:

- Completion of transition to owner maintenance
- Achieving stable throughput of 11.4 million tonnes a year at the CIL plant
- A world class CIL recovery rate of 97%
- Installation of tertiary crushers at the North Heap Leach facility to maintain output
- Ongoing implementation of BPR, achieving material cost savings and efficiency improvements that largely mitigated the impact of higher fuel and power costs

During 2011, we completed a number of processing enhancements at Tarkwa to help maintain its status as a world-class gold mine. This included the commissioning of three new tertiary crushers at the North Heap Leach Facility. Along with efforts to reduce crushing and process downtime, this reduced bottlenecks around our existing processing plants and improved the ability of the mine to process higher grade, hard ore. These crushers produce a finer product size, which help maintain existing recoveries and throughput.

Figure 3.55: Key operating statistics Tarkwa

Key operating statistics	2011	2010	2009	2008	2007
Gold produced – attributable ('000oz)	576	523	473	447	467
Total cash cost (US$/oz)	556	573	488	494	373
Notional Cash Expenditure (NCE) (US$/oz)	913	831	719	926	637
Gold price (US$/oz)	1,565	1,223	966	863	695
Operating profit (US$m)	752	480	320	231	212
Operating costs (US$m)	436	416	342	324	259
Operating margin (%)	67	53	50	43	46
NCE margin (%)	42	32	26	-7	8

Figure 3.56: Key sustainability statistics Tarkwa

Key sustainability statistics	2011	2010	2009	2008
Total taxation and royalties paid (US$m)	202	110	31	37
Employee wages and benefits (US$m)	55	45	36	32
Total employees	2,575	2,073	1,917	1,748
Fatal Injury Frequency Rate (FIFR)	0.05	0.06	0.00	0.00
Lost Time Injury Frequency Rate (LTIFR)	0.21	0.43	0.13	0.31
Cyanide consumption ('000 tonnes)	14.2	12.2	13.0	10.1
CO_2-e emissions ('000 tonnes) (Scope 1&2)	270.5	246.7	225.2	215.2
Energy consumption (TJ)	3,853	3,743	3,397	3,130
Water withdrawal (million liters)	3,684	4,610	6,023	4,528

Figure 3.57: Mineral Resources and Mineral Reserves Tarkwa

Mineral Resources and Mineral Reserves Tarkwa	2011	% of Group total
Attributable Mineral Resources (million oz)	13.61	6%
Attributable Mineral Reserves (million oz)	9.31	12%

We also 'bedded-down' the piloting of High Pressure Grinding Roll (HPGR) technology at our South Heap Leach Circuit, which increased our recovery by between 5% and 10% and has added 50,000 ounces of gold to our 2011 output. As a result of these strong results, we are evaluating the application of this technology to the North Heap Leach Circuit, where it is expected to further enhance recovery. Plans are also in place to evaluate the potential use of this technology to reprocess the decommissioned South Heap Leach pads. Based on heap leach performance records these are believed to contain between 400,000 and 500,000 ounces of residual gold.

In addition, construction was completed on Tarkwa's TSF3 tailings storage facility, which will support expanded production at the mine by addressing increased CIL throughput.

We also implemented a range of BPR initiatives at Tarkwa to address higher input costs. These included:

- Suspension of contract waste mining as part of an overall move to full owner-operation
- Removal of operational bottlenecks through improved utilisation and availability of mining equipment. This maximised the supply of high quality ore to the processing plants and improved capital strip tonnages

- Optimisation of the mining fleet and fuel consumption, including through the implementation of localised 'satellite' fuelling, fuel monitoring systems, vehicle optimisation systems and vehicle tracking and management systems. These actions helped improve truck availability by 8%
- Enhancement of drill yield through the use of more powerful explosives, improved drill patterns and higher blasted capital waste bench heights
- Strategic sourcing, as well as the renegotiation of supply agreements relating to chemicals, explosives, grinding media and mill liners

Production, development and NCE margin

In 2011, managed production at Tarkwa dropped to 717,000 ounces (2010: 735,000 ounces), while attributable production improved by 10% to 576,000 ounces (2010: 523,000 ounces) as a result of the larger shareholding owned by Gold Fields. The decline in managed production was due to the harder ore blend, power supply interruptions and extensive rainfall that slowed down mining activities.

Production was also temporarily affected by flooding in the high-grade Teberebie pit, which has been fitted with enhanced pump capacity as a result. The use of six open pits – as well as the stockpiling of ore from the Teberebie pit – means we have considerable operational flexibility in this respect. Nonetheless, a further period of heavy rainfall in the third quarter had a negative impact on planned running hours, which had a marginal effect on production.

Total tonnes mined, including capital stripping, decreased from 137 million tonnes in 2010 to 115.8 million tonnes in 2011 – largely as a result of the haul fleet rebuild programme. Ore mined also decreased slightly from 22.2 million tonnes to 21.9 million tonnes, while the total strip ratio dropped from 5.2 to 4.3 in 2011.

Tarkwa, Ghana

CIL plant throughput increased slightly from 11.3 million tonnes to 11.4 million tonnes, leading to higher gold production from the plant of 518,000 ounces in 2011 (2010: 508,900 ounces). The feed to the North and South Heap Leach decreased from 12.4 million tonnes in 2010 to 11.7 million tonnes in 2011 due to a harder ore blend. The North Heap Leach tertiary crushing circuit upgrade was commissioned in May 2011. Gold production at the South Heap Leach section increased from 46,800 ounces to 51,800 ounces, but gold output at the North Heap Leach section fell from 179,300 ounces to 147,500 ounces during 2011.

During 2011, operational costs increased as a result of escalating fuel and electricity prices, but higher gold prices and the benefit of cost savings initiatives helped the mine raise its NCE margin to 42% from 32% in 2010. Such efforts will do much to ensure the ongoing commercial sustainability of Tarkwa's world-class deposit.

Outlook for 2012

In 2012, we plan to produce between 720,000 and 750,000 ounces at an NCE of US$1,050/oz and a total cash cost of US$675/oz.

This plan will rely on:

- Successful commissioning and ramp-up of the CIL secondary crusher in the first quarter of 2012
- Improved equipment availability and utilisation
- Continued success of the BPR programme, which is now well embedded in the operation
- Stable fuel and power prices
- A positive outcome in negotiations with the Government of Ghana around the new tax regime

We expect to further enhance the long-term sustainability of Tarkwa by adding a secondary crusher to our CIL plant in early 2012. This would enhance the plant's ability to process significantly harder ore over the remaining life-of-mine at the planned rate of 12.3 million tonnes per year.

We are working to secure additional tailings storage capacity to deal with the increased volume of tailings this will produce. We are also examining other options such as the co-disposal of tailings and in-pit tailings deposition.

Beyond this, we are examining how to leverage future processing options, which along with near-mine exploration, will help guarantee the long-term future of the mine. This potentially includes increased focus on CIL processing in favour of heap leaching to raise recovery rates – and so address increasing volumes of lower grade, harder rock.

3.8.4 Operation overview: Damang

Our Damang mine is located 30km north of our neighbouring Tarkwa mine. It consists of multiple open pits, surface stockpiles and a CIL plant.

Performance in 2011

Overview

Notable achievements in 2011 include:

- Ongoing drilling, which increased the Mineral Reserves at Damang from 2.1 million ounces to 3.4 million ounces and delivered a new Mineral Resource position of 10 million ounces
- Delivery of the proof of concept for the Damang Super Pit, an increase in the Mineral Reserves for the project from 1.1 million ounces to 2.5 million ounces and commencement of the pre-feasibility study. The successful development of the project could increase the life of Damang from 2024 to 2029
- Implementation of owner mining, which will support future production expansion whilst reducing long-term costs
- Completion of our extensive capital strip programme, which has increased flexibility and lays the ground for future production growth
- The maintenance of stable secondary crusher availability to allow for increased hard-ore processing

Production at Damang was supported by the installation of a secondary crusher in 2010. This improved the mine's ability to process hard ore – enhancing both its flexibility and output. Because this pushed our crushing output beyond our processing capacity, we examined how we could further enhance the plant. As a result, we carried out optimisation work on the SAG mill liner design and pebble ports.

Figure 3.58: Key operating statistics Damang

Key operating statistics	2011	2010	2009	2008	2007
Gold produced – attributable ('000oz)	174	162	144	140	128
Total cash cost (US$/oz)	701	660	635	629	520
Notional Cash Expenditure (NCE) (US$/oz)	1,056	973	698	783	735
Gold price (US$/oz)	1,565	1,230	963	863	696
Operating profit (US$m)	201	134	71	45	31
Operating costs (US$m)	142	146	122	134	99
Operating margin (%)	59	48	36	26	25
NCE margin (%)	33	21	28	9	-6

Figure 3.59: Key sustainability statistics Damang

Key sustainability statistics	2011	2010	2009	2008
Total taxation and royalties paid (US$m)	45	39	16	8
Employee wages and benefits (US$m)	17	14	10	9
Total employees	969	463	411	414
Fatal Injury Frequency Rate (FIFR)	0	0	0	0
Lost Time Injury Frequency Rate (LTIFR)	0.19	0.64[1]	0.17	0.16
Cyanide consumption ('000 tonnes)	1.89	2.26	2.24	1.78
CO_2-e emissions ('000 tonnes) (Scope 1&2)	90.3	63.7	59.8	71.0
Energy consumption (TJ)	1,303	1,046	976	1,122
Water withdrawal (million liters)	5,127	3,011	906	436

Figure 3.60: Mineral Resources and Mineral Reserves Damang

Mineral Resources and Mineral Reserves Damang	2011	% of Group total
Attributable Mineral Resources (million oz)	9.04	4%
Attributable Mineral Reserves (million oz)	3.05	4%

Production would potentially have been even higher, but for the temporary 'sterilisation' of high-grade ore around the East Ramp on the Main Cut-Back, due to safety risks associated with potential rock-fall. `The East Ramp, which was completed in December 2011, will allow access to additional ore supply by increasing the mining width. In addition, third quarter production was impacted by power supply interruptions linked to the Electricity Company of Ghana (ECG). Our emergency power station has since been refurbished to minimise the impact of such power outages – and the ECG has provided assurance on future supply reliability.

Damang's strong production performance was further supported by our implementation of owner-mining, which meant we were able to effect a strong production recovery – through, for example, the alternative sourcing of ore and flexibility improvements. In 2011, we completed our transition to owner-maintenance and expanded our truck fleet from 18 to 24 – with further growth to come in 2012.

During 2011, we fitted a 'safe-start' process to our mill at Damang, following successful implementation at Tarkwa in 2010. This will mitigate the risk of 'lock charges', which can potentially stop production for weeks.

[1] Restatement – figure previously reported as 0.47. See p4 for explanation

Damang, Ghana

The mine also implemented a range of BPR initiatives, including improved truck-loading practices and the optimisation of cycle times.

Production, development and NCE margin

In 2011, managed production at Damang dropped by 4% to 218,000 ounces (2010: 228,000 ounces), in part due to a fall in mill throughput, resulting from an unstable supply of power. As a result of Gold Fields' larger shareholding attributable production rose by 7% to 174,000 ounces (2010: 162,000 ounces).

Total tonnes mined, including capital stripping, increased to 23.5 million tonnes in 2011 (2010: 13.8 million tonnes, as the mining strip programme was accelerated. Ore mined also increased from 4.2 million tonnes to 4.8 million tonnes, while the total strip ratio improved from 2.2 to 3.9 in 2011.

At 4.9 million tonnes the tonnage processed in 2011 was lower than the 5.1 million tonnes achieved in 2010, as power interruptions led to lower mill availability.

Operational costs fell during the course of the year due to the savings realised from owner-mining and increased gold-in-mining credit. This was partially offset by increased fuel and electricity costs. The NCE margin increased to 33% from 21% in 2010 as a result of higher gold prices received, as well as lower operating costs.

Outlook for 2012

We plan to produce between 210,000 and 220,000 ounces of gold at a total cash cost of US$785/oz and NCE of US$1,230/oz. This will rely on:

- Successful implementation of a four shift system to improve productivity
- An improvement in the mechanical availability of our mining fleet
- An improvement in the mine call factor from 89% to 92%

Beyond this, we plan to continue our near-mine exploration and feasibility studies to better define the Damang Super Pit project, as well as growth potential around the Greater Damang area (p114-115).

Together with owner maintenance and mining, our extensive capital waste strip programme and ongoing resource and reserve drilling we will be well placed for the long-term development of what looks like an increasingly large ore body.

As a result, we are analysing the benefits of a potential ramp-up in processing between 2011 and 2015. This potentially includes the upgrading of our existing plant, the installation of a new processing plant – or even the utilisation of processing capacity at Tarkwa.

Our ability to pursue the expansion of production at Damang is likely to be impacted, however, by the hardening fiscal environment in Ghana. This includes an increase in royalty rates from 3% to 5% in April, as well as a 2012 budget that looks set to raise the Corporate Income Tax for the mining industry, introduce a new Windfall Profit Tax and tighten capital allowances (p155-156). We are currently assessing the implications of these changes and engaging with government with the hope of negotiating a more favourable tax regime.

4. Growing Gold Fields

Growing Gold Fields is not only about increasing our production and development. It is about ensuring sustainable growth in our profits, earnings and returns to shareholders on a per share basis – as well as our Mineral Resources and Mineral Reserves. Furthermore, it is about augmenting our position as a truly global mining company that has moved beyond its historical base in South Africa.

In the medium-term, our target is to grow into a global gold producer with the aim of having approximately 1 million gold equivalent ounces a year in production or development in each of our Australasia, South America and West Africa regions, and approximately 2 million ounces in the South Africa region.

Our growth strategy is built on three key pillars:

- Ongoing replacement and expansion of our Mineral Resources and Mineral Reserves at our existing operations through near-mine exploration
- Growth of the Group's Mineral Resources, Mineral Reserves and production through the execution of our major advanced stage projects in Finland, Ghana, Peru and the Philippines (p112-118)
- Continued discoveries through highly effective and well-resourced greenfields exploration in our established Australasia, South America and West Africa regions – and in highly prospective locations such as Canada, Kyrgyzstan and the Philippines (p109-112)

In 2011, we bolstered our equity position in Cerro Corona through our US$382 million purchase of minorities' shares in Gold Fields La Cima S.A.A. This took our economic interest from 80.7% to 98.5%. Likewise, our US$677 million purchase of IAMGOLD's 18.9% indirect stake in the Damang and Tarkwa mines increased our holding to 90% (p118).[1]

[1] The remaining 10% is held by the Government of Ghana

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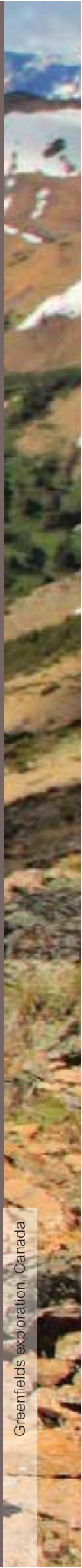
- Mineral Resource and Mineral Reserve Statement. Page 119

Highlights

98.5%
Equity position in the Cerro Corona mine, Peru – following purchase of minorities' shares in Gold Fields La Cima S.A.A

40%
Ownership of the Far Southeast project, Philippines – following third down-payment of US$110 million

80.6 Moz
Mineral Reserves as of 31 December 2011 (an increase of 4 million ounces)



Greenfields exploration, Canada

4.1 Sustainability and the new growth environment

We believe that long-term, sustainable and value-added growth is best achieved through exploration. While we are still open to opportunities to acquire producing or late stage projects, this is not a core strategy and we will be opportunistic in this area. Our growth focus is largely organic, which requires us to:

- Proactively maintain and develop our industry-leading, in-house exploration expertise
- Sustain a diversified and aggressive exploration portfolio
- Ensure we are well-equipped to navigate potentially challenging new operating environments
- Effectively transition our resource development and feasibility projects into production
- Selectively buy-out minorities as this will offer us a greater return on our investment at these operations

The measure of success for this approach will be the ongoing expansion and diversification of our Mineral Resources and Mineral Reserves base. With respect to our existing operations, this includes:

- A significant increase in our Group attributable Mineral Reserves from 76.7 million ounces in December 2010 to 80.6 million ounces in December 2011
- Raising our share of both Mineral Reserves and Mineral Resources at Tarkwa, Damang and Cerro Corona after buying out minority shareholders during 2011 (p118)
- An increase in our managed Mineral Reserves at Tarkwa, Damang and Cerro Corona

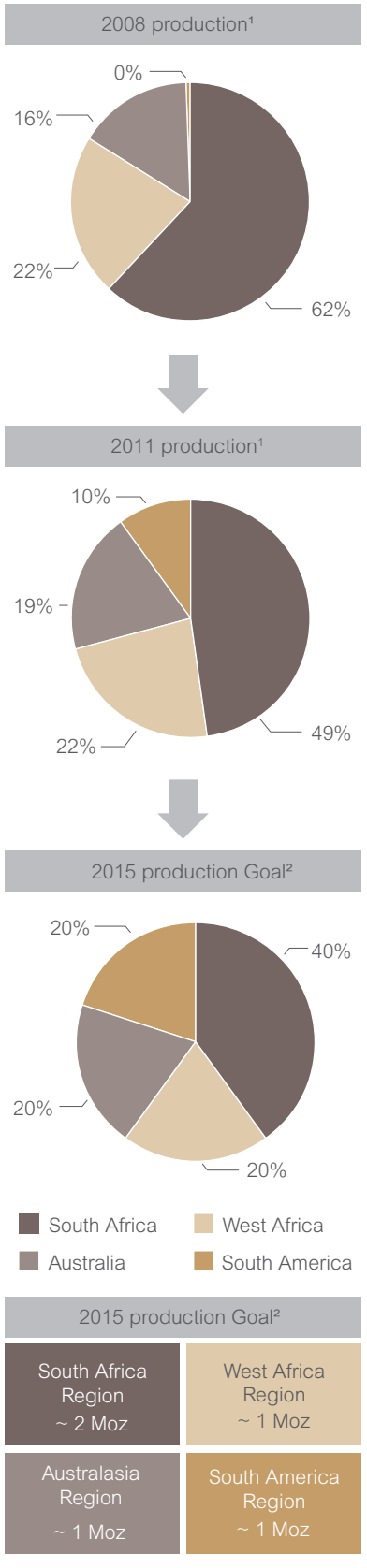
Beyond this, growth has been most marked with respect to:

- A 5.0 million ounce increase in Mineral Reserves at South Deep
- The first time inclusion of 2.9 million ounces of Mineral Reserves from the West Wits Tailings Treatment Project (p64)
- An increase in Mineral Reserves for our Damang mine from 1.1 million ounces to 2.5 million ounces
- A first-ever Inferred Mineral Resource of 1,060 million pounds copper declared for the Woodjam Project in Canada (p110)
- An increase in Mineral Resources at our Chucapaca project from 5.6 million gold equivalent ounces to 7.6 million gold equivalent ounces

Particularly strong growth is taking place – or is due to take place – outside the well-established historical mining centres. These new operating environments offer potentially very rewarding but complex growth opportunities.

As a result we place particular emphasis on effective and proactive risk management. This includes the establishment and maintenance of a strong social licence to operate, based on close stakeholder engagement and the generation of shared benefits.

Figure 4.1: Gold Fields production diversification



[1] Attributable gold equivalent ounces

[2] Goal of 5 million ounces in production or development

4.1.1 Strategy

Our overall growth strategy is to use exploration to contribute towards our Goal of having 5 million ounces a year in production or development by 2015 – and to expand our presence beyond our historic production base in South Africa.

More specifically, we aim to:

- Grow our Mineral Reserves and production on a per-share basis
- Use our greenfields project pipeline to contribute to our 2015 production/development Goal, two-thirds of which is to come from outside of our South Africa region
- Support organic development and near-mine exploration in all our operating regions
- Pursue exceptional prospects in a small number of underexplored sites outside of our operating regions

Our production growth will be underpinned by our existing operations, with our intent being to maintain existing production levels in the medium- to long-term as our legacy mines in South Africa decline after 3 to 5 years.

Our production growth will also be underpinned by:

- Continuing production ramp-up at South Deep (p86-87)
- The leveraging of Cerro Corona's oxide project to increase production (p91)
- Bringing Damang's Super Pit project into production (p114-115) subject to tax changes in Ghana (p155-156)

Beyond this, we have three additional resource development and feasibility projects – in Finland, Peru and the Philippines – that, once operational, will significantly boost Group production.

Figure 4.2: Gold Fields growth pipeline

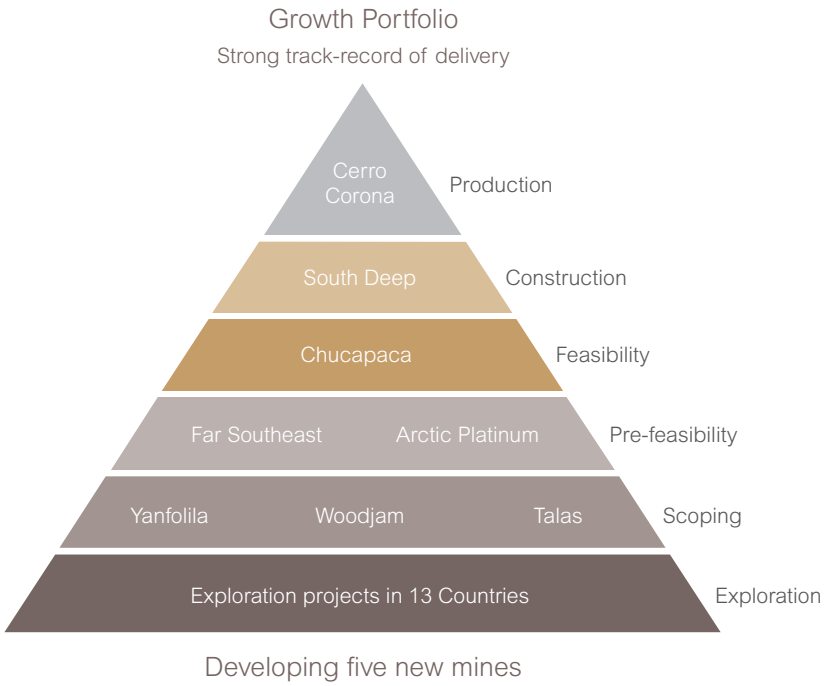
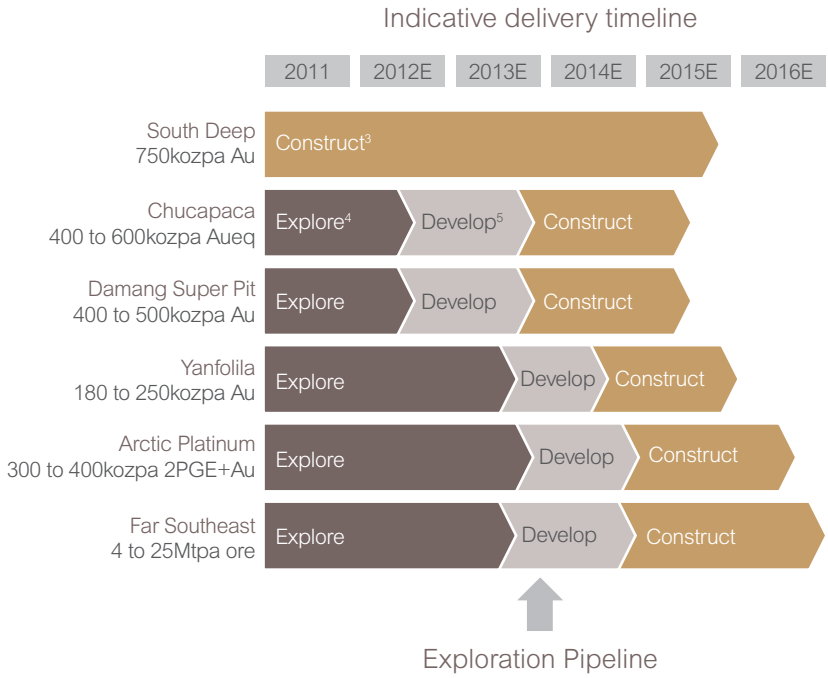


Figure 4.3: Indicative project delivery schedule



3 'Construct' includes all construction activity until commissioning and handover to operational teams

4 'Explore' includes all exploration and study-related activity

5 'Develop' includes all engineering, permitting, long lead orders and pre-construction activity

4.1.2 Approach

In 2011, we combined our Exploration and our International Capital Projects functions to form the new Growth and International Projects function. This aims to deliver seamless project development, from early exploration through to operation.

It will do so whilst applying our commitment that 'all new projects will be better than what we have' – in terms of their operational, sustainability and financial performance.

The new function includes four teams:

- Greenfields Exploration, which is responsible for the identification, assessment and development of opportunities – including potential joint-ventures and acquisitions
- Concept and Studies, which conducts conceptual modelling to establish the strategic fit of discoveries and implements relevant scoping studies to take projects through to pre-feasibility
- International Projects, which is responsible for the 'physical' part of the exploration development pipeline, from pre-feasibility through to construction
- Project Generation, which drives strategic exploration targeting on a global basis, as well as 'step-change' thought-leadership for greenfields exploration, projects, and near-mine exploration at the established operations

This new structure deliberately 'overlaps' team responsibilities along the exploration development pipeline to ensure seamless integration.

We aim to use this new structure to maintain a 'steady-state' growth pipeline based on reliable and repeatable models, so that at any point in time we have at least:

- Three advanced drilling projects
- Two resource development projects
- One feasibility study

Greenfields exploration, Canada

Through this approach, we will always be constructing a new mine – and aim to establish a strong, predictable and repeatable track record for the execution of growth projects that will last well into the future.

Excellence in greenfields exploration

Our exploration portfolio covers five continents and is co-ordinated and supported from our main Growth and International Projects centres in Perth, Australia and in Denver, United States. These are supported by a network of local offices located in a range of locations, from Santiago in Chile, Vancouver in Canada and Baguio in the Philippines.

We believe we have one of the best greenfields exploration teams in the industry. In 2011, we drilled 227,344 meters (2010: 187,713 meters) at an all-in drilling cost of US$350/metre (2010: US$366/meter). Over the past two years, our exploration efforts have added about 12.1 million gold equivalent Mineral Resource ounces to Gold Fields, at an average cost of approximately US$33/oz. These figures compare favourably with our peers.

The quality of our team is a direct result of our long-term investment in, and cultivation of, our in-house capabilities.

Figure 4.4: The exploration development pipeline

Identification and assessment

Our target portfolio is developed by reviewing and ranking the most prospective areas in the world, having assessed relevant country risks and strategic suitability. This includes the application of our unique Acquisition and Competitor Intelligence System (ACIS), as well as our proprietary Global Business Area Rating (GBAR) system.

Gold Fields exploration is based on a disciplined assessment of opportunities to both improve the likelihood of success and reduce project development timelines.

Gold Fields maintains rigorous quality control and assurance protocols on all of its exploration programmes. These use industry best practice in data acquisition, laboratory verification and sign-off by qualified persons under the 2007 edition of the SAMREC code.

What is ACIS?

ACIS is an internal network-based system that uses extensive databases covering global geophysical data, project data, mine data and Geographical Information System data – as well as internally-derived intelligence. It uses proprietary software to consolidate and analyse this data to produce value-added analysis to inform our acquisition activities, as well as our interactions with other operators in the market.

What is GBAR?

GBAR is an internal system that provides quantitative and qualitative analysis of potential exploration locations. This includes 'prospectivity' (e.g. geology, exploration maturity, etc.), as well as 'mineability' (e.g. political risks, competitiveness, etc.). It uses a wide range of our existing data – as well as content from external experts.

Figure 4.5: Variables used to evaluate advanced exploration opportunities

Mineral Reserve and production potential	Development timeline
Operating and NCE margin	Net asset value
Payback period	Earnings
Initial capital costs	Cash flow

Our approach has already proven its ability to create value for our shareholders by driving production and Mineral Reserve growth on a per-share basis – and will continue to do so.

Navigating the new growth environment

A legacy of global underinvestment in grass-roots exploration over the last few decades, as well as the depletion of traditional mining areas, means gold mining companies increasingly have to explore higher-risk environments to ensure their future growth. This makes the 'non-technical' aspects of exploration ever more important.

Responsible exploration

In line with our Values, Gold Fields has an overriding commitment to responsible health and safety practices, as well as environmental stewardship, during the exploration process. In particular, we seek to create a mind-set and working environment that means employees know exploration can take place without incident – no matter where they are operating.

This philosophy gets built into the 'DNA' of our exploration projects from the start – ensuring 'best practice' management of each project's unique safety, health, environment and socio-economic risks as it proceeds to development and construction.

Our Environment, Health and Safety Management System is certified to ISO 14001 and OSHAS 18001.

Establishing a licence to operate

A number of the prospective or underexplored areas that offer future growth opportunities are located in relatively under-developed locations with little history of large-scale, industrialised mining. In many cases, they can present complicated social, political and economic challenges that require careful and sensitive management. Because of this, we place great emphasis on ensuring our teams have the right knowledge, skills and resources to secure our social licence to operate at the start of activities – and maintain it thereafter.

This includes detailed internal and third-party analysis of the risks and opportunities presented by the operating environment, the establishment of dedicated community relations teams and the proactive engagement of key stakeholders – including traditional leaders, local NGOs and officials at all levels of government.

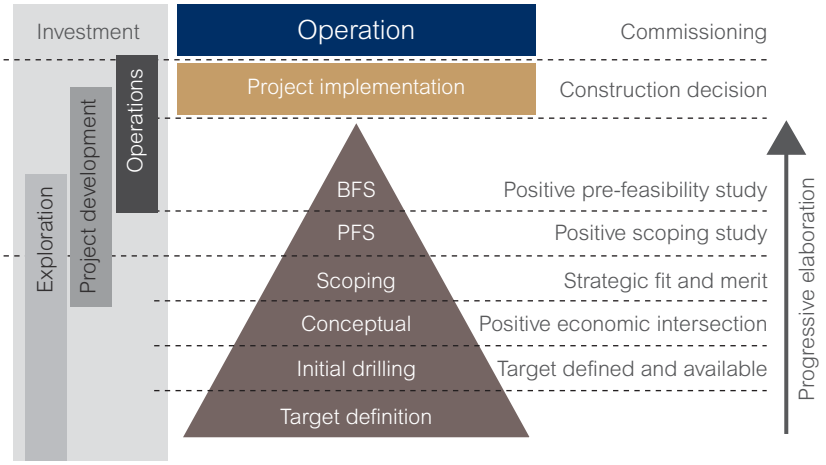
Furthermore, it is our aim to establish situations where it is in the mutual interest of both Gold Fields and our in-country stakeholders for our exploration projects to succeed – and to generate long-term shared benefits.

Aside from supporting operational continuity, this approach supports our ability to win new licences. Experience has shown that many governments actively favour companies with a proven track record of constructive community engagement and development.

4.1.3 Capital investment

Bringing a project from early exploration to operation requires considerable management and investment. This takes place through our Capital Investment Framework (CIF), which provides a clear structure and process for the management of capital investment in projects, including the definition of roles and responsibilities, reporting and accountability.

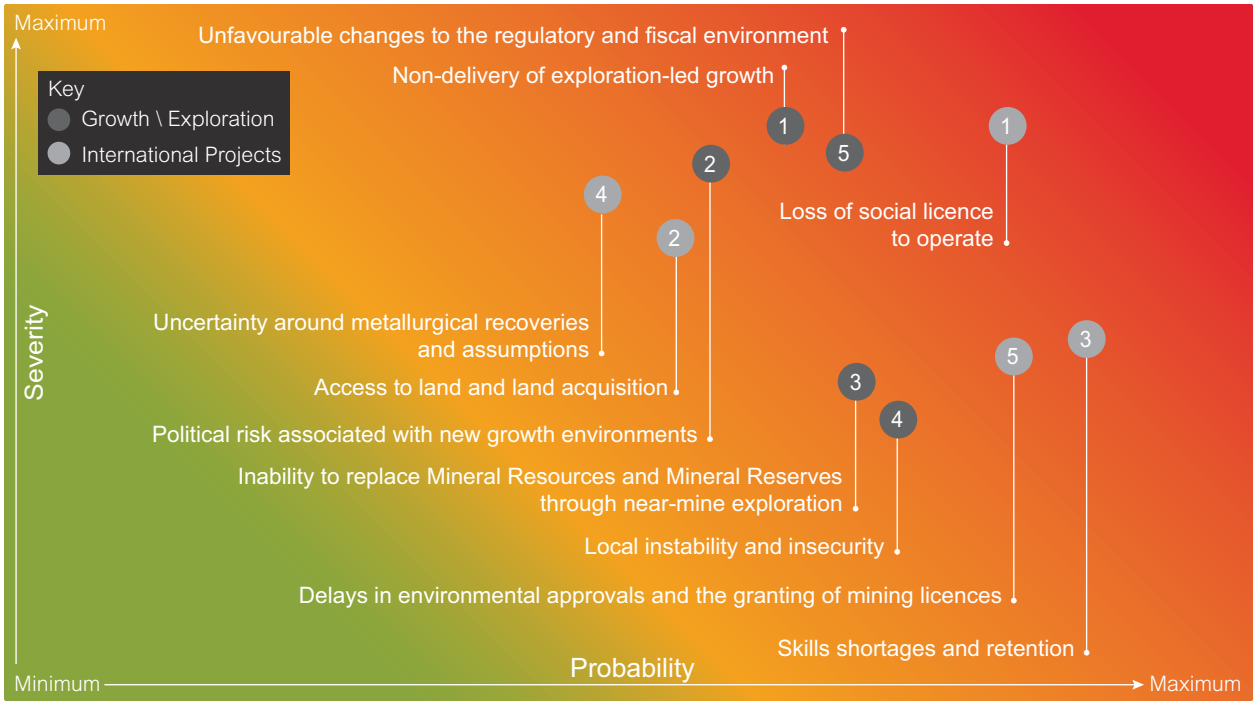
Figure 4.6: Capital Investment Framework phases



Exploration drilling at Chucapaca, Peru

4.3.5 Top 10 Growth and International Projects heat map

The heat map below sets out the top 10 Growth and International Project risks, as identified through our Enterprise Risk Management (ERM) process (p36-37).



Risk mitigating strategies	
Growth \ Exploration	
1	• Implementation of the Gold Fields growth strategy • Identification and management of potential project challenges
2	• Stringent geographic and socio-political risk analysis • Maintenance of strong corporate governance
3	• Implementation of growth strategy for near-mine exploration • Enhanced human resource structures to support near-mine exploration
4	• Establishment of crisis management plans • Extensive community relations and stakeholder engagement programmes
5	• Stringent compliance with legal and non-legal obligations and commitments • Effective monitoring of political developments and regulatory changes
International Projects	
1	• Implementation of community relations and stakeholder engagement plans • Focus on meeting all commitments made to communities
2	• Ongoing community engagement • Investigation of alternative mining methodologies
3	• Competitive remuneration and benefits strategy • Proactive support of tertiary education through bursary programmes and sponsorship of mining schools • Proactive leadership development and talent management
4	• Comprehensive sampling, test work and controls • Implementation of independent peer reviews
5	• Establishment and maintenance of strong stakeholder relationships • Continuous tracking of project progress in relation to the environmental approval process

Securing community support at Far Southeast

The Far Southeast gold-copper project (located in northern Luzon in the Philippines) potentially represents one of the most exciting projects in Gold Fields growth portfolio. Nonetheless, it represents a relatively challenging socio-political environment. This means the project's ultimate success is more dependent than most on close consultation with local stakeholders.

The Far Southeast Community Sustainable Development team

Far Southeast has established a particularly strong Community Sustainable Development (CSD) team made up of 52 people – or 21% of the total project workforce. The majority of the team is made up of local and indigenous people from the Municipality of Mankayan – where the ore body is located. The CSD team's tasks include:

- Ensuring a broad-based social licence to operate for the project
- Securing the formal Free, Prior and Informed Consent (FPIC) of the indigenous Kankana-ey community for Far Southeast activities
- Gaining access to land to carry out proof of concept and due diligence drilling

Community mapping

Far Southeast's approach to community engagement is informed by comprehensive community stakeholder mapping, carried out with the assistance of the nearby Benguet State University (BSU). This was based on an innovative household survey of almost all of Mankayan's 35,000 residents, carried out using a team of 340 student volunteers and analysed using advanced geo-spatial software.

Geo-spatial image from community stakeholder mapping programme

Engagement activities

The community stakeholder mapping exercise – as well as subsequent work with local officials and the BSU to develop strategic Barangay[1] development plans – helped inform Far Southeast's targeted community programmes, including:

- Communication campaigns to address negative perceptions around mining, land stability and water quality/availability
- Engagement with local people and land claimants to expedite drilling
- Support for local health missions, benefiting more than 8,600 people
- Implementation of teacher training for 133 high-school teachers, and 79 day care and pre-school teachers
- 'Cultural renewal' activities, coordinated by local elders, to promote indigenous Kankana-ey tradition
- Disaster management training for Barangay emergency response teams through the Philippine Red Cross

1. Local administrative unit

FPIC and its relationship to Far Southeast

The Indigenous Peoples Rights Act (IPRA) requires development activities to be aligned with four key considerations:

- Recognition and protection of 'ancestral domain': At Far Southeast, this includes all of Mankayan
- Self-governance and empowerment: This includes FPIC – which underpins the right to accept or reject certain development activities
- Cultural integrity: This includes the right to indigenous culture, customs and traditions
- Social justice and human rights: This includes access to basic social services

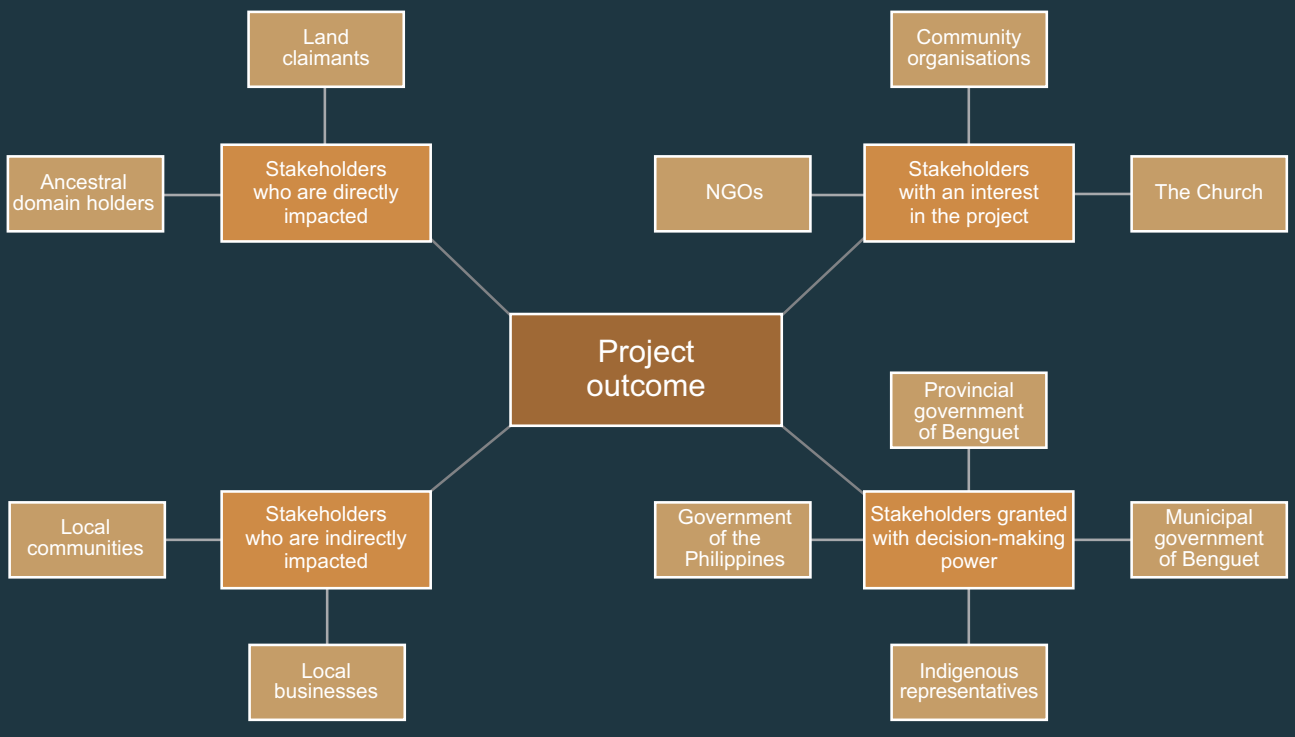
Far Southeast is currently seeking FPIC from Mankayan's Kankana-ey communities to carry out further exploration activities. Although there is a less formal, faster route for obtaining FPIC directly, Far Southeast is applying the more transparent, consultative and formalised process that requires FPIC to be secured on its behalf by the National Commission of Indigenous Peoples. Despite the extra time and cost this entails, it is believed this approach will deliver a stronger social licence to operate.

The FPIC – and the acquiescence of local elected representatives – is necessary if Far Southeast is to convert its Mineral Production Sharing Agreement (MPSA) into a Financial or Technical Assistance Agreement (FTAA). Unlike an MPSA, an FTAA would allow for majority foreign ownership and control of the project.

At the time of writing, the process for obtaining FPIC was in motion.

Community members meeting with the CSD and operational teams at the Far Southeast project, Philippines

Far Southeast stakeholders



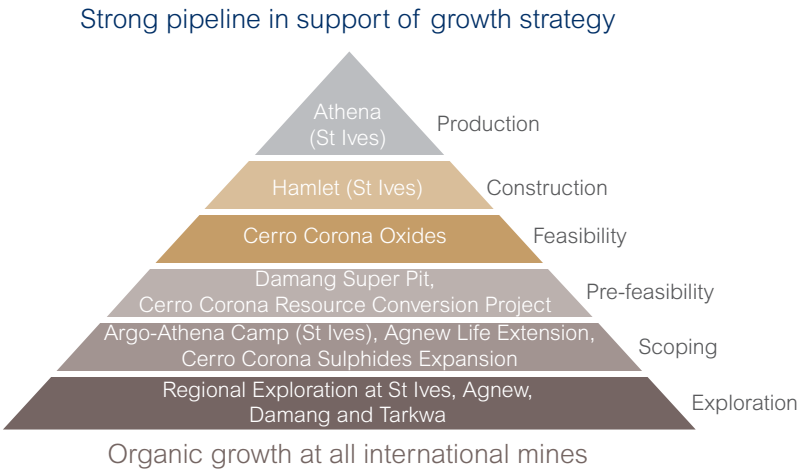
4.2 Expanding our growth pipeline

In 2011, Gold Fields invested almost US$300 million on exploration and growth, including:

- Near-mine exploration: US$75 million (2010: US$57 million)
- Greenfield exploration: US$132 million (2010: US$99 million)
- Resource development and feasibility projects: US$87 million (2010: US$14 million)

In addition we spent US$1.06 billion on mergers and acquisitions (p118).

Figure 4.7: Gold Fields near-mine growth pipeline



4.2.1 Near-mine exploration

A significant proportion of the increase in our international regions' Mineral Resources (62%) and Mineral Reserves (47%) has been as a result of our portfolio of near-mine exploration programmes. This not only adds to our total Mineral Reserve base, but ensures we are able to continue leveraging our existing mine infrastructure well into the future.

Australasia region

Agnew

During 2011, we continued our efforts to assess the various mining options for the Waroonga Main Lode using directional, surface-based drilling. In the course of doing so, we identified three high-grade ore-shoots at depth on the Waroonga Main Lode North; the Fitzroy, Bengal and Hastings shoots. These may intersect with the Porphyry Link target zone between the Kim and Main Lodes. The pattern of mineralisation between the Kim Lode and the Fitzroy shoot is scheduled for further investigation in 2012.

Additional Reverse Circulation (RC) drilling was carried out on an up-dip extension at the Cinderella open pit project, which intersected shallow, high-grade mineralisation. Optimisation of the Cinderella resource suggests a potentially economic open pit position.

St Ives

During 2011, the prospective Neptune and Revenge open pit expansion areas were subject to intensive resource development drilling. This included in excess of 25,000 meters of RC and diamond drilling, which delivered positive results. These were used to update final resource inventory models, which assisted with the optimisation of the Greater Neptune project area.

Additional resource development drilling totalling more than 130,000 meters was completed at the Greater Santa Ana, Cave Rocks, Argo-Athena and Leviathan areas. These programmes targeted potentially economic extensions to the established mining centres.

Further activity included:

- Aircore drilling at the Incredible prospect, which identified an extensive and coherent zone of anomalism – with follow-up diamond drilling confirming economic bedrock mineralisation
- Framework drilling around the Victory complex, which identified prospective new mineralisation
- Target definition drilling in the highly prospective Argo-Athena camp area
- Reserve conversion and extensional drilling at Athena, Hamlet and Cave Rocks

South Africa region

At South Deep, six surface holes have been completed since drilling started in 2007. Of the six surface holes currently being drilled, two will be completed by the end of the first quarter of 2012, two by the end of 2012 and the remaining two by mid-2013.

The intersections obtained so far continue to support our current understanding of the position, geometry and grade distribution of the Upper Elsburg Reefs. The latest geological models incorporate these drilling results, providing greater confidence in terms of grade and tonnage estimates.

South America region

Over the course of the year, we carried out infill and extensional drilling within the Cerro Corona pit. This was aimed at defining the geological parameters to support future mine planning, as well as the potential for higher-grade ore extensions in proximity to the current pit. The results of this drilling programme generally confirmed the December 2010 resource model and were used to better define the mine's Mineral Reserves.

In addition, we identified localised, higher-grade zones, which may potentially provide short-term production grade increases over the life of the mine. Drilling also identified a number of intersections outside of the planned pit designs, particularly at depth. This may offer potential Mineral Resource expansion opportunities for the future, which will be further explored in 2012.

We completed our Oxide Stockpile drilling project in June 2011. This confirmed the estimated grade and distribution of the stockpile – as well as very low levels of soluble copper. Full analysis and modelling of the stockpiles was completed in July 2011. We are doing a feasibility study to investigate the potential for a heap leach facility to recover the oxide ores.

In the third-quarter of 2011, we completed exploration drilling on the adjacent Sylvita project. This delivered localised indications of copper mineralisation in extensions to the Cerro Corona intrusive body.

West Africa region

During 2011, our near-mine exploration programme at Damang increased the mine's Mineral Resource base by 56%. This has increased the life of the mine from 2024 to 2029.

In May 2011, we completed the first phase of the Damang Super Pit proof of concept 29,000 meter drilling programme. This covered the entire strike length of the geological complex to assess the cut-back potential of the Huni, Damang and Juno deposits. Another 38,000 meters were drilled in the second half of the year. The programme produced positive results and is being fed into a pre-feasibility study, which is explored on p114-115.

Beyond this, we carried out drilling targeted at the possible extension of deposits in the Greater Amoanda area. Detailed geological studies produced as a result have identified opportunities for extension at both the Rex and Amoanda deposits.

Figure 4.8: Creating a globally diversified portfolio

4.2.2 Greenfields exploration

Gold Fields has a broad portfolio of early stage greenfields projects around the world. These will help ensure the sustainability of our growth and diversification well into the future.

Argentina

In October 2011, Gold Fields signed a joint venture agreement to earn up to 70% of the Taguas gold-silver project in San Juan province from Minera S.A., a private company. Diamond drilling commenced in December 2011 and will continue into 2012.

Australia

East Lachlan

In the East Lachlan Fold Belt of New South Wales, Gold Fields holds an 80% interest in six project areas (Wellington North, Cowal East, Jemalong, Moorefield, Parkes-Clancy and Parkes-Centaurus) and has completed the 51% earn-in of a potential 80% on the Myall joint venture. Gold Fields has expanded its own ground position in this world-class gold-copper porphyry belt to approximately 2,100km^2 with the addition of four new project areas in its own right.

A substantial full-field aircore drilling programme remains ongoing at the Myall concession, focused on the discovery of concealed porphyry gold-copper systems that have breached the paleo-surface. Elsewhere in the belt, 14 initial drill targets were tested in 2011 with encouraging results. Focused target definition work consisting of airborne and ground geophysical surveys, as well as drilling coupled with multi-element and multi-spectral analysis, has revealed a number of porphyry-related anomalies at the Wellington North project. Further work at the Cowal East joint venture is identifying both epithermal gold and porphyry copper-gold targets. These, and other targets, are scheduled for initial drilling in early 2012 while greenfields target definition work continues.

www.clancyexploration.com

Delamerian

Gold Fields currently manages over 20,000km^2 of tenements at its Delamerian project in South Australia. This is an early stage greenfields project targeting the potential for covered orogenic gold mineralisation in an unexplored province. Geophysical surveys, aircore drilling and soil sampling have identified a number of target areas with low level anomalism. A single diamond drill hole completed at the Haylands target in late 2010 intersected hydrothermal alteration associated with anomalous gold, zinc, copper and bismuth values, which validates the targeting criteria. Additional targets have been defined in 2011 and prioritised for initial drilling in 2012.

Central Victoria

During 2011, the Central Victoria project was divested to Timpetra Resources as part of their initial public offering on the ASX. Under the terms of the agreement, Gold Fields retained a 21.8% equity ownership in Timpetra post-initial public offering and anti-dilution rights to acquire and maintain up to a 40% shareholding.

www.timpetra.com

Canada

Woodjam

Gold Fields has a joint venture agreement to earn into a 70% interest of the Woodjam projects in British Columbia. The projects are held by Consolidated Woodjam Copper Corp. and include:

- Woodjam North, with 42,343 ha covering several known porphyry copper and gold targets in south-central British Columbia
- Woodjam South, with 14,199 ha covering the Southeast Zone porphyry copper target

In 2011, we completed a 20,000 meter drilling programme on the Southeast Zone porphyry copper-gold-molybdenum targets to support the development of a SAMREC 2009-compliant Mineral Resource and a Conceptual Mining Study in mid-2012. As a result, we have a first-ever Inferred Mineral Resource of 1,060 million pounds copper declared. Infill drilling and reconnaissance drilling was also carried out on the Deerhorn, Megabuck and Tisdall Lake prospects.

Toodoggone

We have a joint venture project with Cascadero Copper Corp. to earn up to a 75% interest in its 30,409 ha Toodoggone copper and gold project in British Columbia. In 2011, we carried out a 2,248 meter diamond drilling programme to test high priority geochemical and geophysical anomalies on the Mex porphyry copper-gold target. This successfully intersected porphyry-related copper-gold mineralisation. A decision on the way forward will be made in 2012.

www.woodjamcopper.com
www.cascadero.com

Far left: Greenfields exploration in British Columbia, Canada
Right: Salaras Norte project, Chile

Chile

Gold Fields has option agreements to acquire 100% of the Salares Norte and Piedra properties held by SBX Asesorias e Inversiones, as well as the Pircas property held by S.C.M. Aguas Heladas.

In 2011, we started RC drilling at the Salares Norte property to test selected geophysical and geochemical targets for evidence of high sulphidation gold-silver mineralisation. We also signed a 100% option agreement for the adjacent third-party owned Rio Baker property, which will be incorporated into the Salares Norte exploration plan. A follow-up diamond drilling programme commenced at Salares Norte in December 2011 and will continue in the first half of 2012.

At the Pircas epithermal gold project, we carried out further drilling to test the limits of a deeply oxidised vuggy silica-hosted gold-silver mineralisation identified in 2010. Trenching was carried out on a new target area in late 2011 and a follow-up drilling programme is planned for the first half of 2012.

Ghana

During 2011, we completed a 4,800 meter drilling programme at the Asheba project (Gold Fields 90%). The drill results have confirmed mineralisation in two prospect areas. Conceptual modelling showed sufficient resource potential and follow-up drilling commenced in November 2011.

Guinea

At the Telikan gold project in Guinea, Gold Fields completed follow-up soil sampling and trenching on two targets that warrant drilling. A 5,350 meter RC drilling programme was completed in December 2011. A decision on the way forward will be made once all assay results have been received in early 2012.

Mali

In 2011, we continued exploration activity at our Yanfolila project in south-western Mali (Gold Fields 85%). Work included drilling on the Komana East, Komana West and Kabaya South deposits, in parallel with efforts to advance a scoping study that was completed in the third quarter. Target definition work and initial drilling also took place on a number of additional prospective targets within 25km of Komana East.

The scoping study suggests that the project requires about a 1.5 million ounce Mineral Resource base before a capital investment decision can be made. Although drilling in 2011 did reveal potential for additional ounces, the required threshold has not been achieved as quickly as expected. As a result, the project remains in the advanced drilling stage – with resource development dependant on stronger drill results. Nonetheless, the extensive nature of our work in the area means that Yanfolila has the potential to move with great speed into the resource development stage, should further Mineral Resources be identified.

On the Kangare project, which is located north of Yanfolila in Mali, Gold Fields has completed extensive geophysical and geochemical surveys, as well as aircore drilling, to define several gold targets. Initial bedrock drilling using combined RC and diamond drilling at the Tinguele target in August 2011 defined a large gold-bearing system. Follow-up drilling commenced in late 2011 and will continue into the first half of 2012.

Peru

Gold Fields is exploring the Tacna and Moquegua projects in the southern Altiplano region of Peru. Initial RC drilling partially tested the Ichocollo porphyry gold target at the Tacna project in September 2011. However, the drilling programme was suspended after two holes due to regional social unrest. This programme is scheduled to resume in 2012 followed by initial drilling programmes on two other nearby target areas.

At the Moquegua project, an initial drilling programme of six diamond drill holes was completed between August and November 2011 on the Pacosani breccia target. Final assay results are still incomplete but results to date have not been encouraging.

In December 2011, initial diamond drilling commenced on the Chapi Chiara epithermal gold target. This is part of the Amantina joint venture signed with Vena Resources Inc. to earn up to a 70% interest. The Amantina joint venture property is contiguous with the Moquegua project.

www.venaresources.com

Philippines

In September 2011, Gold Fields signed an option agreement with Bezant Resources Plc to acquire 100% of the Mankayan copper-gold project located on the island of Luzon. The Mankayan project is immediately adjacent to the Far Southeast project (p116-118) and contains a significant buried gold-copper porphyry deposit located at Guinaoang, about 4km east of the Far Southeast deposit. Diamond drilling is planned at Mankayan in 2012.

www.bezantresources.com/

Kyrgyzstan

In north-western Kyrgyzstan, Gold Fields owns a 60% interest in the Talas joint venture with partner Orsu Metals Corp. The Talas joint venture covers four exploration licences, which are prospective for copper-gold porphyry deposits. Most of the exploration work completed has focused on the Taldybulak copper-gold deposit. At the end of 2011, a total of about 30,000 meters of diamond drilling had been completed on the Taldybulak deposit to delineate a SAMREC-compliant copper-gold resource of about 10.5 million ounces of gold-equivalent.

Due to ongoing social and political unrest in Kyrgyzstan, which began with a revolution in April 2010, field work has been suspended. In October 2011, a new president was elected and he is now consolidating a new government. In January 2012 Gold Fields and Orsu Metals signed an agreement with the community to resume drilling in April 2012.

www.orsumetals.com

4.2.3 Resource development and feasibility projects

In 2011, we increased the Mineral Resources and Mineral Reserves of our advanced stage greenfields exploration project portfolio. These projects are driven by our new Growth and International Projects function (p102), which – supported by our established in-region teams – is designed to deliver seamless project development and a predictable steady state project pipeline. These projects are intended to be developed into our next generation of new-age mines.

Arctic Platinum Project, Finland

During 2011, we completed a pre-feasibility consolidation study on the Arctic Platinum Project (Gold Fields 100%), focused on the Konttijarvi and Ahmavaara resources in the Suhanko area.

This was with a view to establishing a starter mine for future resource development. The study incorporated the results of our pilot plant testing of bulk floatation and hydrometallurgical processing on two 50 tonne ore samples – using Platsol® technology for enhanced metal recovery (p52).

This pilot study was completed during 2011 and generally confirmed earlier bench-testing work indicating that the Platsol® process can be successfully utilised to recover copper, nickel, gold and platinum group elements (platinum, palladium and rhodium) from the Suhanko ores at an onsite facility.

Under the base case assumptions, the economics of the project are relatively robust. There are several other potential resource positions that could considerably improve the project's economics by significantly increasing the life of the mine. These require additional drilling to declare Inferred and Indicated Resources and to complete test work to confirm amenability to the Platsol® hydro-metallurgical process.

'Bulking up' additional deposits would not only optimise the efficiency of up-front capital expenditure (including the substantial capital cost associated with Platsol® processing), but would also offer opportunities to improve project economics. These include:

- Mitigation of the impact of the large Ahmavaara pre-strip by offering more flexible ore scheduling from additional ore sources – thereby reducing strip ratios and improving the grade mix in the short-term
- The possibility of higher-grade open pit resources from the SK Reef deposits (Siika Kama, Kuohunki and Nutturalampi), which would allow us to bring forward higher-grade ore – and to reduce the strip ratio at the Suhanko North deposit
- Potential for less selective, lower cost mining

We are further evaluating future production rates above the base case, the likely impacts on capital efficiency and project economics, as well as further metallurgical enhancements to recovery.

The broader market context will also help inform the future of this potentially important strategic project. Our modelling suggests that much of the platinum industry faces long-term cost challenges due to the mature nature of many of the major platinum mines in South Africa. As a result, an extended life-of-mine at the Arctic Platinum Project would improve its relative position over time, with potential to be amongst the lowest cost producers in the industry (excluding up-front capital costs from NCE). Furthermore, the project is located in a strong and stable operating environment, with a sound regulatory framework and straightforward licensing processes.

In addition to our pre-feasibility work on the Suhanko area, we carried out a preliminary assessment on the Suhanko II extension area (including the Suhanko North, Vaaralampi and Tuumasuo deposits), which is subject to a mining lease application.

Sustainable development

Sustainability risks around the Arctic Platinum Project are limited. The main concern of local communities is that the deposit is brought into production promptly to contribute to the local economy.

Chucapaca, Peru

Chucapaca is likely to become our second mine in the South America region – and the next of our new-generation international growth projects. The feasibility project, which is located in southern Peru, is a joint venture between Gold Fields (51%) and Buenaventura (49%), operated through the joint venture company Canteras del Hallazgo S.A.C (CDH).

The gold-copper-silver Canahuire deposit, which forms part of the Chucapaca project, is amenable to conventional open pit mining with copper floatation and CIL treatment of the copper tailings to recover gold. The fact that the Canahuire deposit is located at an altitude of approximately 5,000 meters above sea-level means it is likely to offer its own unique operational challenges. Nonetheless, our successful development of the high-altitude Cerro Corona mine (p88-91) means we are well placed to manage such issues.

Our main focus has been on the resource definition of the Canahuire deposit. During 2011, we increased the Indicated and Inferred Mineral Resource to 133 million tonnes at 1.4 g/t gold, 10.8 g/t silver and 0.09% copper for a total of 7.6 million ounces of gold equivalent. This represents a 35% increase on the 5.6 million ounces of gold equivalent declared in May 2010 and is based on a total of 85,000 meters of drilling up to May 2011. Mineralisation remains open to the west at depth.

We advanced the development of our mine planning based on the new resource model, including a three phase pit design. RC and diamond drilling remains ongoing and is focused on tailings and waste dump civil geotechnical drilling, as well as sterilisation drilling. We also initiated an environmental impact assessment baseline study, which is due for submission in the third quarter of 2012.

We plan to complete the feasibility study for Chucapaca in late 2012. This will incorporate a total of 106,000 meters of resource and geotechnical drilling, as well as metallurgical test work. We plan to make a development decision by year-end, subject to agreement with local communities on land purchases.

The Canahuire deposit is one of several targets in the 12,700 ha Chucapaca project area. Gold Fields has also consolidated a significant portfolio of additional concessions adjacent to the project area and is exploring these on an independent basis.

Sustainable Development

Our activities in Chucapaca are supported by formal, five year agreements with the Corire, Santiago de Oyo Oyo and Chucapaca communities.

Amongst other things, these agreements provide for a range of community benefits, including:

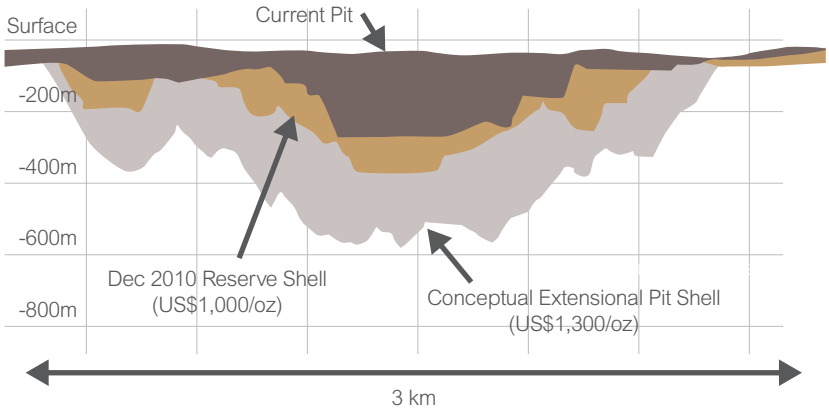
- The delivery of health and education programmes, in partnership with relevant local authorities
- The delivery of other socio-economic development programmes identified by the communities, including training initiatives for local people

Although these agreements give CDH a formal social licence to complete the exploration and study phases of the work programme over the next four years, 2011 did raise some challenges. In late August/early September, work on the project was temporarily disrupted as a result of activism by the Oyo Oyo community. This was attributable to a lack of internal consensus within the community in its negotiations with Gold Fields – as well as issues around our land acquisition process and plans to decrease field activity towards the end of 2011.

As a result, we are intensifying our existing community engagement efforts. This includes, for example, our efforts to negotiate ground-breaking collective agreements covering land acquisition. These will offer production-based payments to local communities – and so help entrench a strong social licence to operate throughout the mine lifecycle. In addition, we are implementing an intensive training and local employment programme in anticipation of project development.

We are also taking an innovative approach to water management, which remains a relatively sensitive issue in this high altitude agricultural area. It is anticipated that water will be provided to the mine from a new 30 million cubic meter reservoir. Although the mine only requires a 10 million cubic meter reservoir, the majority of water from the dam will be used to supply local communities – whilst significant excess capacity will be maintained to avoid supply disruptions.

Figure 4.9: Damang Super Pit conceptual shell



Damang Super Pit, Ghana

At Damang, we are in the process of transforming what was a relatively small operation facing potential closure into a primary asset that will make a significant contribution to Group production for many years to come.

The Damang Super Pit project is focusing on the significant expansion of our existing Damang pit and the exploitation of ore at-depth and along strike into the adjacent Huni and Juno pits. It now has a 7.4 million ounce resource to support a potential doubling of production.

The project represents a low-risk growth opportunity supported by high-levels of existing data, as well as established infrastructure.

According to our conceptual exploration model, the pit contains 50 to 80 million tonnes of ore at grades of 1.6-1.8 g/t for a total of approximately 4 million ounces of gold. Following completion of the initial 25,000 meter proof of concept drilling programme in May 2011, a second phase of drilling was completed in October 2011. This phase covered an additional 38,000 meters of resource definition drilling, confirming the extent of mineralisation consistent with current mined ores over the entire 3.5km strike length – and at depths of up to 500 meters below the current pit floor. This provided the geological and assay data to achieve a 7.4 million ounce Mineral Resource position. Final pre-feasibility optimisation should be completed by early 2013.

In parallel to the resource drilling programme, mining, metallurgical and engineering studies advanced on-schedule during 2011. We also completed a desk-based tailings disposal study, which was supported by geotechnical and hydro-geological site investigations.

The pre-feasibility study anticipates a number of options, including a conventional tailings storage facility, in-pit tailings storage, and the co-disposal of waste rock and tailings.

The pre-feasibility study includes an engineering design study, covering the design of the metallurgical plant, infrastructure and services, potential in-pit crushing, mechanised conveyance of waste rock and a hydro-geological study for the enlarged pit.

Two options are being considered for the metallurgical plant. The first is to refurbish the existing plant and construct a second plant with a capacity of 5 million tonnes a year. The second is to decommission the existing plant and construct a new 9.5 million tonnes a year plant.

Although we plan to complete the pre-feasibility study in mid-2012, we are considering the potential impact of recent changes to the fiscal regime in Ghana and are involved in ongoing dialogue with the government. This includes a full review of existing stability agreements, with a view to levelling the playing field in the country. Gold Fields does not have a pre-existing stability agreement.

Sustainable Development

The project is fully integrated into Damang's broader sustainability management systems.

Case study

Bringing new life to the Damang mine through the Super Pit project

The Damang Super Pit project in Ghana is part of Gold Fields Greater Damang strategy, which is being implemented in two phases:

- Phase 1: The Damang Super Pit aims to expand the current pit through both the aggressive exploitation of ore at-depth and through the combination of the existing Huni, Juno and Damang deposits into a 'Super Pit'. Gold Fields conceptual model indicates that the Super Pit contains between 50 and 80 million tonnes of ore at grades of 1.6 to 1.8 g/t
- Phase 2: The Greater Damang Project focuses on the significant expansion of Damang's Mineral Resources and Mineral Reserves beyond the existing pit

The Damang Super Pit project aims to transform what was previously a relatively modest operation into a long-term contributor to Group production by significantly expanding production at the mine. Given the mine's established infrastructure and wealth of existing geological data, the project represents a high-potential growth opportunity for Gold Fields. The project now has a 7.4 million ounce resource to support a potential doubling of production and increase Damang's life of mine from 2024 to 2029.

The Super Pit project will require the development of enhanced mine infrastructure to cope with increased production. To this end, Gold Fields is planning the construction of a new processing plant, as well as an upgrade of the existing plant. Once both plants are in operation (scheduled for early 2015), they will double Damang's processing capacity to about 10 million tonnes. In addition, the new plant is targeting a recovery rate of about 95%, compared to a recovery rate of about 92% delivered by the existing plant. This – along with the construction of additional tailings storage capacity – will ensure that the Super Pit project is able to deliver on its exciting potential.

By significantly extending the life of the mine, the Damang Super Pit project will also deliver key benefits to local stakeholders. These include:

- The creation of new employment opportunities – as well as the maintenance of existing positions
- The long-term maintenance of Damang's contribution to local socio-economic development – and the economic sustainability of Damang village. This includes key health, water and sanitation projects funded through the Gold Fields Ghana Foundation (p145) – as well as the indirect economic contributions of mine employees

The detailed operational and financial modelling for the Super Pit project will take account of the final format of the new Ghanaian tax regime for the mining industry, which was tabled by the government.

Far Southeast, Philippines

The Far Southeast gold-copper project in the Philippines continues to represent one of our best greenfields growth opportunities. Far Southeast is located in an existing mining camp operated by Lepanto Consolidated Mining Company in northern Luzon. As a result, the project has good access to established infrastructure, including roads, tailings facilities, power and water.

Following positive ongoing drilling results we made a third down-payment of US$110 million in March 2012 under our option agreement with Lepanto and Liberty Express Assets to acquire a 60% interest in the deposit. Gold Fields now owns 40% of Far Southeast and should we decide to proceed with the acquisition of the remaining 20% interest, the final payment of US$110 million is expected to be paid during the second half of 2012. The total acquisition price for this 60% interest is US$340 million.

The deep nature of the deposit – beginning at 900 meters below surface – means it will require underground shafts, a refrigeration plant, ventilation and other related infrastructure. In this context, Gold Fields is particularly well placed to leverage its extensive deep-underground mining experience in South Africa.

Local stakeholders visiting the Far Southeast drilling site, Philippines

Historic third-party drilling indicates the presence of a large, concealed gold-copper mineralised porphyry system. Over 80 diamond drill holes totalling more than 35,000 meters have been drilled into the system.

The mineralised zone has approximate dimensions of more than 1,000 meters from east to west, 800 meters from north to south and 900 meters vertically.

Far Southeast's extensive drilling programme has taken place from 700 meters above sea level, targeting an initial resource in a 550 meter vertical section between 350 meters above and 200 meters below sea level. Activity has included:

- 24,000 meters of proof-of concept drilling via 17 holes
- 12,000 meters of due diligence drilling via 13 holes

Initial results support the existence and extent of the known core of mineralisation – as well as further extensions beyond this core, both laterally and at depth. The indicative scoping study parameters for the project are based on a 900 million tonne target at 0.77g/t Au and 0.54% Cu – equivalent to 52 million ounces of gold-equivalent.

These figures will be used to inform the final option payment – expected during 2012 – and ongoing conceptual mining studies. Should we exercise the option, we currently plan to complete an Inferred Resource model in the second half of 2012.

Far Southeast is evaluating bulk underground mining of between 4 million and 25 million tonnes per year – depending on the development of a plan that is socially, environmentally and economically responsible.

The mine is expected to utilise twin declines and twin shafts, as well as a conventional copper floatation process plant.

In terms of infrastructure, Far Southeast is evaluating a pipeline to take the copper concentrate to the coast – as well as other transport alternatives. Plans are in place to source power from the national grid through a purchase agreement.

Other activities carried out to support the project in 2011 include:

- The filing by Lepanto and Far Southeast of an application to convert the existing Mineral Production Sharing Agreement (MPSA) licence into a Financial or Technical Assistance Agreement (FTAA). This will allow for majority foreign ownership and control of the project
- Initiation of a full cultural and human resources due diligence exercise to manage the potential transition of Lepanto employees. This is being undertaken in cooperation with the Southeast Asia Interdisciplinary Development Institute (SAIDI) School of Organisational Development
- Initiation of a water management plan for surface and groundwater, a biodiversity study and a legal obligations register

Resolution on the proposed mining method remains outstanding and the full sustainability impact of the proposed method would have to be assessed.

Sustainable Development

The well-established nature of mining in the area has contributed to a largely cooperative stance on the part of local communities. Nonetheless, the area offers a relatively complex social, political and cultural context.

As a result, particular emphasis has been placed on the development and implementation of a comprehensive sustainable development strategy (p106-107).

In 2011, Far Southeast implemented a Community Sustainable Development (CSD) programme to address some of the negative historical mining legacies that exist in the area. This includes community perceptions around the association between underground mining and ground movement, concerns around water quality, and employment expectations.

These activities have been guided by an innovative household survey of almost all 35,000 residents in the area using a team of 340 volunteers from Benguet State University (p106).

"We are pleased with the [Far Southeast] results to date and excited at the prospect of establishing a long-standing mutually beneficial relationship in a promising region in the Philippines."

Nick Holland, Chief Executive Officer of Gold Fields

Local children near the Far Southeast project, Philippines

Key activities undertaken by the Far Southeast CSD team in 2011 include:

- Delivery of Integrated Barangay Development Plans for each of the local 'barangays' (i.e. local administrative areas) in the municipality of Mankayan, in collaboration with the Municipal Council and Benguet State University
- Provision of computer literacy courses in each barangay (in collaboration with Mankayan's local business forum)
- The enrolment of around 1,000 indigenous people in a government health programme (with the Department of Health)
- The carrying out of Medical health missions to all 12 barangays (with the support of the Mankayan Municipal Council and Department of Health)
- Water management planning and bio-filter training (with NGO, A Single Drop of Water)
- The rolling out of a 'Mining 101' awareness-raising course to the Mankayan Municipal Council, run by the University of the Philippines

A key component in our ability to proceed with the project is the securing of the statutory Free Prior and Informed Consent (FPIC) of the local Kankana-ey indigenous group for an exploration FTAA (p107). Far Southeast is also in the process of securing relevant local government approvals.

www.saidi.edu.ph
www.singledrop.org

4.2.4 Mergers and acquisitions

Although our strategy is based on exploration-led growth, we made two important acquisitions during 2011 that have not only contributed to the expansion of our Mineral Resources and Mineral Reserves – but also our strategic aim of achieving 100% ownership of the assets in our portfolio.

The first of these was our April 2011 acquisition in Peru of a further stake in Gold Fields La Cima S.A.A. for US$382 million. Our offer to minority shareholders in La Cima saw our stake increase from 80.7% to 98.5% - giving us almost total ownership of the Cerro Corona mine.

As a result of this acquisition, we acquired:

- An additional 70,000 ounces of attributable annual production at an NCE of about US$592/oz
- An additional 900,000 reserve ounces and an additional 1.4 million resource ounces
- Additional Mineral Resource and Mineral Resource growth potential

The second was our June 2011 acquisition of IAMGOLD's 18.9% indirect minority stake in the Damang and Tarkwa mines in Ghana for US$667 million. This has taken our total interest in the mines from 71.1% to 90% – with the remaining 10% interest held by the Government of Ghana. As a result of this acquisition, we acquired:

- An additional 180,000 ounces of attributable annual production at an NCE of about US$940/oz
- An additional 2.14 million reserve ounces at a cost of about US$300/oz
- An additional 3.27 million resource ounces at a cost of approximately US$198/oz
- Significant resource and reserve upside potential, at Damang in particular

In addition, we entered into an option agreement with Bezant Resources Plc to acquire its interest in the Guinaoang porphyry copper-gold deposit (known as the Mankayan project) in the Philippines. The Mankayan project is located just 4km east of our Far Southeast project (p116-118). Subject to shareholder approval and an option fee of US$7 million, Gold Fields will be granted the option to acquire Bezant's entire interest for US$63 million.

www.iamgold.com
bezantresources.com

4.3 Mineral Resource and Mineral Reserve Statement

The Gold Fields Mineral Resource and Mineral Reserve reporting strategy is to ensure integrity and consistency in reporting, compliance with public and internal regulatory codes and to inform all stakeholders on the status of the Group's fundamental asset base. A comprehensive review of the Group's Mineral Resources and Mineral Reserves as at 31 December 2011, including locality and mine infrastructure plans of all the operations, is available in the Mineral Resources and Mineral Reserves Overview that accompanies the Integrated Annual Review, or may be downloaded from the Gold Fields website.

www.goldfields.co.za

St Ives, Australia

4.3.1 Corporate governance

The Group's December 2011 Mineral Resource and Mineral Reserve statement is compliant with the South African Code for the Reporting of Exploration Results, Mineral Resources and Mineral Reserves (the SAMREC Code, 2007 edition) and Industry Guide 7 for reporting on the United States Securities and Exchange Commission (SEC).

Other relevant international codes are recognised, where geographically applicable, such as the Australian JORC Code and Canadian NI 43-101.

Guided by a commitment to corporate governance, this statement has been audited by a number of leading independent mining consultancies, and found to be compliant with the relevant codes. The procedure followed in producing the declaration is aligned to the guiding principles of the Sarbanes-Oxley (SOX) Act of 2002.

In Figure 4.15 the Mineral Resource and Mineral Reserve statement as at 31 December 2011 is compared to the previous year's declaration as at 31 December 2010. The Mineral Resource and Mineral Reserve figures are estimates, at a point in time and will be affected by fluctuations in the gold price, US dollar currency exchange rates, costs, mining permits, changes in legislation and operating factors. Although all permitting may not be finalised and in place, there is no reason to expect that these will not be granted. However, the time taken for approval may impact the schedules. All financial models are based on promulgated tax regulations at 31 December 2011.

All figures are managed, unless otherwise stated, Mineral Resources are reported inclusive of Mineral Reserves and stability pillars, while production volumes are reported in metric tonnes (t).

The competent persons designated in terms of SAMREC, who take responsibility for the reporting of Gold Fields Mineral Resources and Mineral Reserves, are the respective operation-based Mineral Resource Managers and relevant Project Managers.

Corporate governance on the overall compliance of these figures has been overseen and consolidated by Kevin Robertson, Group Head of Mine Planning and Mineral Resource Management. He has 26 years experience in the mining industry and is a permanent employee of Gold Fields Group Services. Additional information regarding the teams involved with the compilation of the Mineral Resource and Mineral Reserve declaration are incorporated in the respective 'Technical Short-Form Reports', which are available on the website.

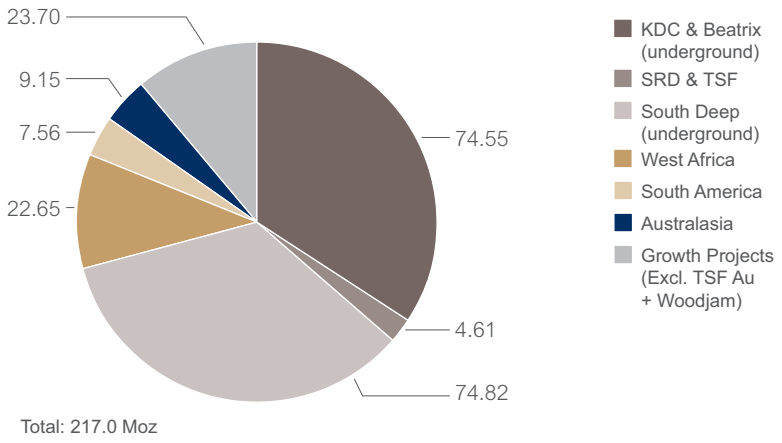
www.samcode.co.za
www.sec.gov
www.jorc.org
www.ccpg.ca

4.3.2 Group summary

Gold Fields has total attributable precious metal and gold equivalent Mineral Resources of 217.0 million ounces (December 2010: 225.4 million ounces) and Mineral Reserves of 80.6 million ounces (December 2010: 76.7 million ounces). The figures include: Arctic Platinum (2PGE+Au), Canahuire gold-copper-silver, Taldybulak gold-copper-molybdenum, Yanfolila and the WWTTP gold (the West Wits Tailings Treatment Project, which includes South Deep, KDC East and KDC West).

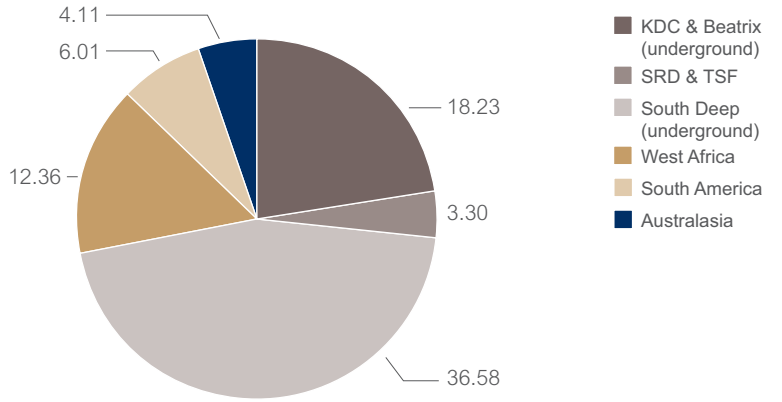
Total attributable gold-only Mineral Resources including WWTTP (excluding platinum, other metal equivalents and projects) are 189.7 million ounces (December 2010: 199.1 million ounces) and Mineral Reserves are 77.6 million ounces (December 2010: 74.6 million ounces), net of depletion.

Figure 4.10: Group attributable Mineral Resources (million Au-Eq oz)



Total: 217.0 Moz

Figure 4.11: Group attributable Mineral Reserves (million Au-Eq oz)



Total: 80.6Moz

4.3.3 Regional summary

Australasia

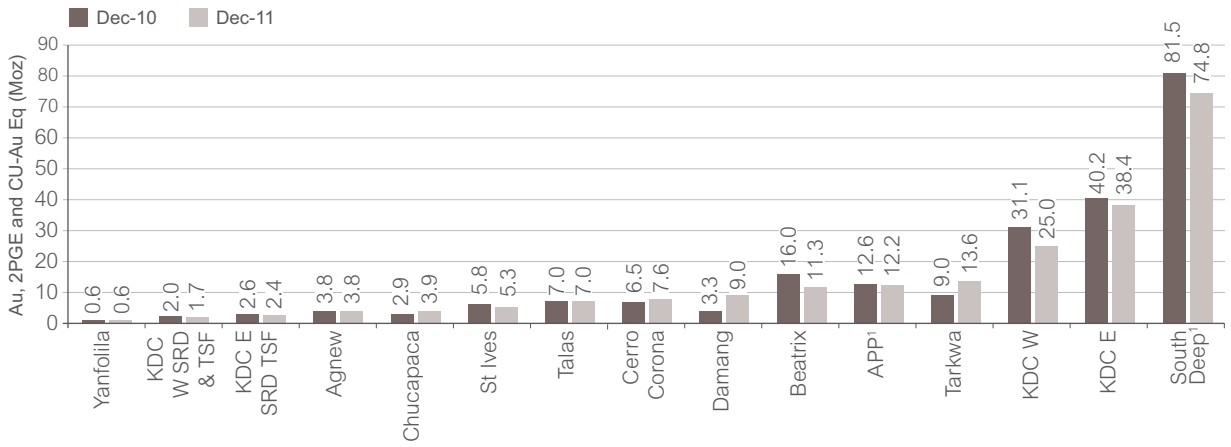
The Australasia region has a declared gold Mineral Resource of 9.2 million ounces (December 2010: 9.6 million) and a gold Mineral Reserve of 4.1 million ounces (December 2010: 4.1 million ounces). These figures are net of 0.7 million and 0.7 million ounces of depletion respectively.

Figure 4.12: Headline Numbers - Gold Fields Limited Mineral Resource and Mineral Reserve summary as at 31 December 2011

	Mineral Resources			Mineral Reserves		
Total: Operating mines (including Cu as Au equivalents & TSF Au)	Tonnes (Mt)	All Metal EqOz (Moz)	All Metal EqOz (Moz)	Tonnes (Mt)	All Metal EqOz	(Moz)
Managed	1749.1	202.2	208.8	1062.4	85.1	81.0
Attributable	1667.1	193.4	202.3	1011.0	80.6	76.7

Totals including platinum and gold equivalents (from Cu, Ag & Mo), excl Woodjam	Tonnes (Mt)	All Metal EqOz (Moz)	All Metal EqOz (Moz)	Tonnes (Mt)	All Metal EqOz	(Moz)
Managed	2475.8	234.4	239.5	1062.4	85.1	81.0
Attributable	2158.2	217.0	225.4	1011.0	80.6	76.7

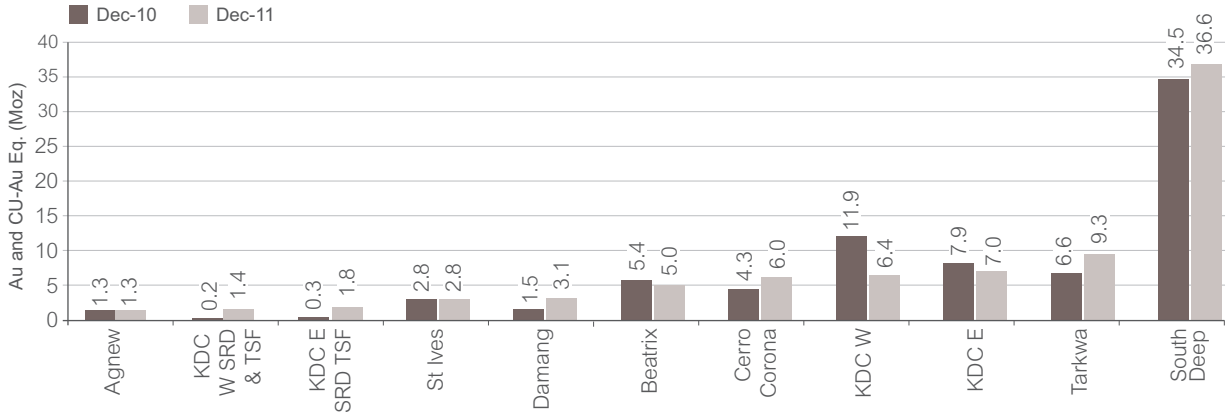
Figure 4.13: Attributable Mineral Resources per operation and growth project (million Au-Eq oz)



[1] APP includes 2PGE + gold

[2] Excludes South Deep TSF – 0.4 Moz

Figure 4.14: Attributable Mineral Reserves per operation and growth projects (million Au-Eq oz)



South Africa

The South Africa region has a total declared Mineral Resource of 160.2 million ounces (December 2010: 173.8 million ounces). The region's Mineral Reserve amounts to 61.1 million ounces (December 2010: 60.2 million ounces). These figures are net of 1.9 million and 1.7 million ounces of depletion respectively.

The region's West Wits Tailings Treatment Project (WWTTP) has a gold Mineral Resource of 4.2 million ounces (December 2010: 4.5 million ounces) and a gold Mineral Reserve of 2.9 million ounces (December 2010: Nil).

The decline in the Mineral Resources was due to pay-limit increases, resource clean-up and changes in geological models. The rise in Mineral Reserves was largely attributable to the 5.2 million ounce increase at South Deep and the first-time inclusion of 2.9 million ounces from our WWTTP (KDC only).

However, the surface and underground uranium Mineral Resource reported in December 2010 for our West Wits operations (KDC and South Deep) has been excluded from the December 2011 declaration, but retained in the inventory.

South America

The South America region has a declared gold Mineral Resource of 3.9 million ounces (December 2010: 4.1 million ounces) and a gold Mineral Reserve of 3.1 million ounces (December 2010: 2.7 million ounces). The copper Mineral Resources and Mineral Reserves are 1,386 million pounds (December 2010: 1,464 million pounds) and 1,126 million pounds (December 2010: 965 million pounds) respectively.

The total managed gold and copper equivalent Mineral Resource and Mineral Reserve ounces are 7.7 million ounces (December 2010: 8.1 million ounces) and 6.1 million ounces (December 2010: 5.3 million ounces) respectively. These figures are net of 0.5 million and 0.6 million ounces of depletion respectively.

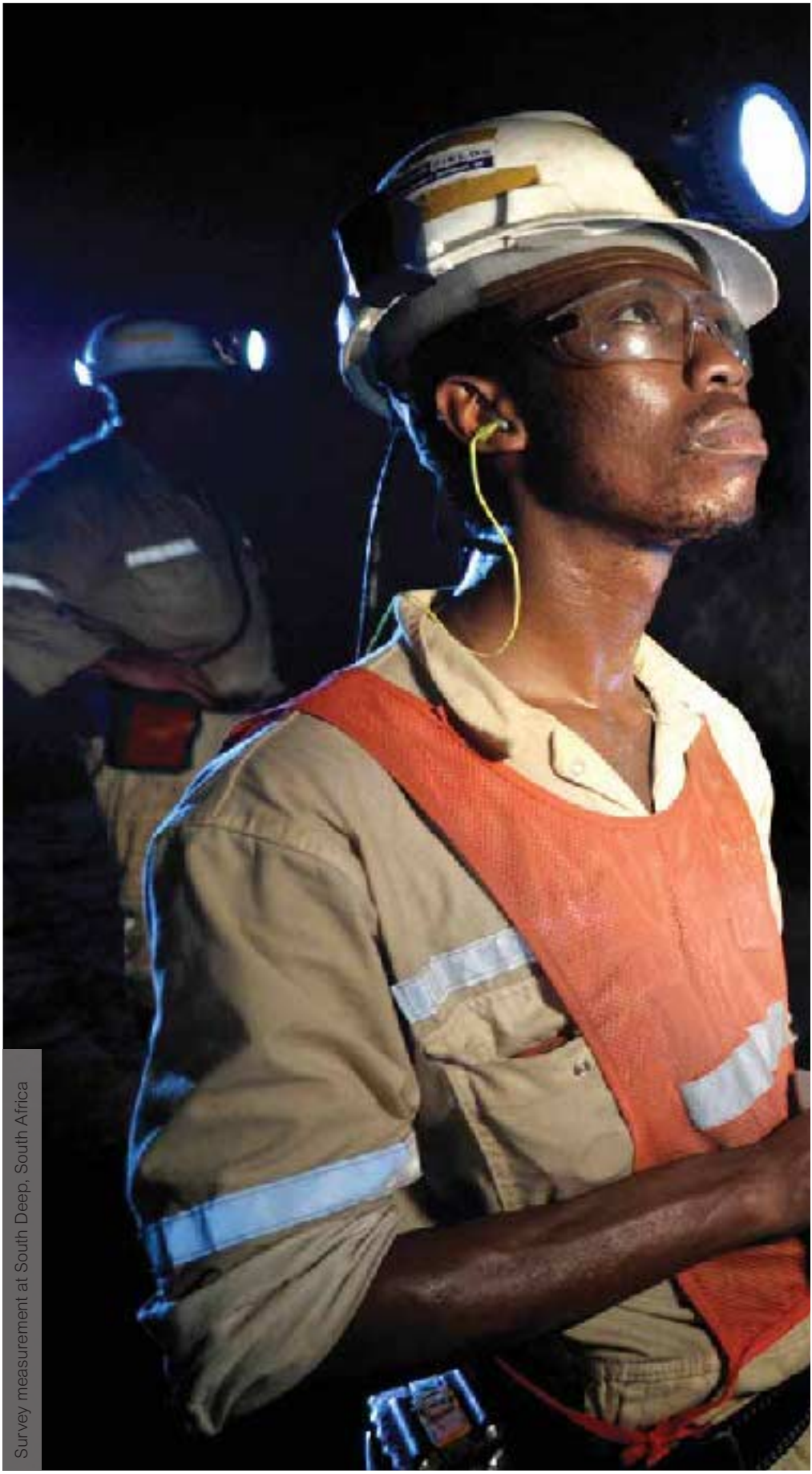
West Africa

The West Africa region has a declared gold Mineral Resource of 25.2 million ounces (December 2010: 17.3 million ounces) and a gold Mineral Reserve of 13.7 million ounces (December 2010: 11.3 million ounces). These figures are net of 1.1 million ounces and 1.0 million ounces of depletion respectively.

4.3.4 Growth Project summary

Changes in the Mineral Resource position of our growth projects at December 2011 compared to December 2010 is as follows:

- The total Arctic Platinum Project (APP) Mineral Resources now amount to 12.2 million ounces 2PGE + Au following a scoping level hydrometallurgical processing study for the Suhanko deposits. APP is 100% attributable to Gold Fields
- The Chucapaca project in southern Peru underwent a scoping study in 2011, which included additional extensional and infill drilling and now has a gold equivalent Mineral Resource of 7.6 million ounces – 51% attributable to Gold Fields
- Damang Super Pit: The Mineral Reserves for the Damang Super Pit increased from 1.1 million ounces to 2.5 million ounces in 2011 and the project now has a 7.4 million ounce Mineral Resource
- The maiden Inferred Mineral Resource of 1,060 million pounds copper was declared for the Woodjam project in British Columbia, Canada and is 51% attributable to Gold Fields



Survey measurement at South Deep, South Africa

Figure 4.15 Gold Fields Mineral Resource and Mineral Reserve Statement as at 31 December 2011

	Mineral Resources[1] (100%)				Mineral Reserves[1] (100%)				Attributable R & R (%)		
	31 Dec 2011			Dec 2010	31 Dec 2011			Dec 2010	31 Dec 2011		
GOLD	Tonnes (Mt)	Grade (g/t)	Gold (Moz)	Gold (Moz)	Tonnes (Mt)	Grade (g/t)	Gold (Moz)	Gold (Moz)	(%)	Resource (Moz)	Reserve (Moz)
Australia Operations											
Agnew[2]	24.2	4.9	3.838	3.845	7.1	5.7	1.302	1.321	100	3.838	1.302
St Ives	63.3	2.6	5.314	5.765	37.9	2.3	2.813	2.820	100	5.314	2.813
Total Australasia region	87.5	3.3	9.152	9.610	45.0	2.8	4.114	4.141	100	9.152	4.114
South African Operations											
Beatrix (underground)	53.5	6.5	11.120	15.934	34.0	4.5	4.901	5.367	100	11.120	4.901
KDC E (underground)	94.7	12.6	38.435	40.233	27.8	7.8	6.951	7.937	100	38.435	6.951
KDC W (underground)	66.3	11.7	24.999	31.051	26.5	7.5	6.382	11.850	100	24.999	6.382
Total KDC (ug)	161.0	12.3	63.434	71.284	54.3	7.6	13.333	19.787	100	63.434	13.333
South Deep (underground)[3]	355.8	7.1	80.974	81.454	225.0	5.5	39.584	34.533	92.4	74.820	36.576
Beatrix Surface Rock Dumps	12.4	0.4	0.156	0.078	5.5	0.3	0.057	0.078	100	0.156	0.057
WWTTP (Tailings Storage Facility)	430.5	0.3	4.164	4.490	247.2	0.4	2.916	0.000		4.131	2.916
WW Surface Rock Dumps[7]	14.9	0.7	0.327	0.594	14.9	0.7	0.327	0.454	100	0.327	0.327
Total South Africa region	1,028.0	4.8	160.175	173.834	580.8	3.3	61.118	60.219		153.989	58.110
Peru Operation											
Cerro Corona	151.7	0.8	3.946	4.115	110.0	0.9	3.072	2.672	98.5	3.887	3.026
Total South America region	151.7	0.8	3.946	4.115	110.0	0.9	3.072	2.672	98.5	3.887	3.026
Ghana Operations											
Damang	165.4	1.9	10.044	4.638	61.7	1.7	3.390	2.080	90	9.040	3.051
Tarkwa	316.5	1.5	15.123	12.642	264.8	1.2	10.345	9.249	90	13.611	9.310
Total West Africa region	481.9	1.6	25.167	17.280	326.5	1.3	13.735	11.329	90	22.651	12.361
Total International Operations	721.1	1.7	38.266	31.004	481.6	1.4	20.921	18.142		35.690	19.502
GOLD ONLY											
Total Gold Managed	1,749.1	3.5	198.441	204.839	1,062.4	2.4	82.040	78.361		-	-
Total Gold Attributable	1,667.1	3.5	189.678	199.051	1,011.0	2.4	77.612	74.571		189.678	77.612

Figure 4.15: Gold Fields Mineral Resource and Mineral Reserve Statement as at 31 December 2011 (continued)

COPPER (Peru) - Cerro Corona	Tonnes (Mt)	Grade (%Cu)	Copper (Mlbs)	Copper (Mlbs)	Tonnes (Mt)	Grade (%Cu)	Copper (Mlbs)	Copper (Mlbs)	(%)	Copper (Mlbs)	Copper (Mlbs)
Copper (Cu) only	144.1	0.45	1,386	1,464	110.0	0.51	1,126	965	98.5	1,366	1,109

COPPER + GOLD Cerro Corona			Au - Eq (Moz)	Au - Eq (Moz)			Au - Eq (Moz)	Au - Eq (Moz)	(%)	Au - Eq (Moz)	Au - Eq (Moz)
Cu as Au-Eq[4]	-	-	3.729	3.992	-	-	3.031	2.624	98.5	3.673	2.985
Total Cerro Corona (Au + Cu as Au-Eq)[4]	-	-	7.676	8.107	-	-	6.103	5.296	-	7.560	6.012

Growth Projects

PLATINUM (Finland) - APP Project[6]	Tonnes (Mt)	2PGE + Au (g/t)	2PGE + Au (Moz)	2PGE + Au (Moz)	Tonnes (Mt)	2PGE + Au (g/t)	2PGE + Au (g/t)	2PGE + Au (g/t)	(%)	2PGE + Au (Moz)	2PGE + Au (Moz)
Total 2PGE + Au	161.9	2.3	12.159	12.601	-	-	-	-	100	12.159	-

COPPER - GOLD - SILVER (Peru) - Chucapaca Project	Tonnes (Mt)	Grade (g/t)	Au - Eq (Moz)	Au - Eq (Moz)					(%)	Au - Eq (Moz)	Au - Eq (Moz)
Total Au-Eq oz[4] (Au + Ag + Cu)	132.7	-	7.628	5.639	-	-	-	-	51	3.890	-

COPPER - GOLD - MOLYBDENUM (Kyrgyzstan) - Talas Project	Tonnes (Mt)	Grade (g/t)	Au - Eq (Moz)	Au - Eq (Moz)					(%)	Au - Eq (Moz)	Au - Eq (Moz)
Total Au-Eq oz[4] (Au + Cu + Mo)	423.0	-	11.695	11.710	-	-	-	-	60	7.017	-

GOLD (Mali) - Yanfolila Project	Tonnes (Mt)	Grade (g/t)	Gold (Moz)	Gold (Moz)						Gold (Moz)	Gold (Moz)
Total Au	9.1	2.5	0.740	0.740	-	-	-	-	85	0.629	-

COPPER Canada - Woodjam Project[5]	Tonnes (Mt)	Cu %	Cu (Mlb)	Cu (Mlb)						Cu (Mlb)	Cu (Mlb)
Total Cu	146.5	0.33	1,060		-	-	-	-	51	541	-

Mineral Resources are inclusive of Mineral Reserves. All tonnes relate to metric units. Rounding-off of figures may result in minor computational discrepancies, where this happens it is not deemed significant.

In Australia (Agnew and St Ives), a gold price of A$1,550 and A$1,400 was used to determine the Mineral Resources and Mineral Reserves respectively. Mineral Resources for the South African operations were determined at R340,000/kg, while the Mineral Reserves were determined at R310,000/kg.

In South America (Cerro Corona) and West Africa (Damang and Tarkwa), the Mineral Resources and Mineral Reserves were determined using a gold price of US$1,450/oz and US$1,300/oz, and a copper price of US$3.90/lb and US$3.50/lb respectively.

For the Growth Projects, (i) Talas used US$1,150/oz for gold, US$3.00/lb for copper and US$15/lb for molybdenum, (ii) Chucapaca used US$1,450/oz for gold, US$3.90/lb for copper and US$25.5/oz for silver, (iii) Yanfolila used US$1,150/oz for gold and (iv) Woodjam used US$1,450/oz for gold and US$3.90/lb for copper and APP used US$1,450/oz for gold, US$1,775/oz for platinum, US$625/oz for palladium, US$3.90/lb for copper and US$10.89/lb for nickel.

1 Managed, unless otherwise stated

2 Agnew deposits, Miranda & Vivien, are subject to a royalty agreement

3 The BEE transaction concluded in December 2010, grants an empowerment consortium 10% of South Deep. Based on the relevant sliding scale of the vesting of the economic benefit attached to the 10% and the current Life of Mine profile, the Mineral Resource and Mineral Reserve portion attributable to Gold Fields is 92.4%

4 Copper, silver and molybdenum are reported as gold equivalent ounces (commodity revenue is divided by the gold price for the conversion to gold equivalent ounces)

5 Woodjam is a copper deposit with gold as a by-product

6 APP's declared Mineral Resource is pit constrained for the Konttijärvi and Ahmavaara deposits (7.1 Moz 2PGE + Au) and includes the original unconstrained SK reef estimates (5.1 Moz 2PGE + Au)

7 The WWTTP has been included into the gold Mineral Reserve figures this year, whereas the uranium Mineral Resource figures have been excluded, but remain in the inventory

5. Securing our future responsibly

‘Securing our future responsibly’ means pursuing true business sustainability through the effective management of our long-term risks and opportunities – and through the implementation of our Vision and Values.

Our long history of operating world-class mining operations means we have a particularly strong understanding of the fact that our long-term success will be underwritten by our current policies, actions and investments. It also means we are aware of our significant responsibilities – and of how these will impact our long-term business interests.

This approach makes it incumbent on us to recognise the many non-operational and non-financial dynamics and issues that affect our business – including:

- The effective management and development of the individual employees who make up our workforce, which will ensure we have the right talent and skills to drive future profitability
- Promotion of the physical, mental and emotional wellbeing of our employees, which will underwrite current and future productivity
- Management of our relations with local stakeholders in a range of contrasting contexts, which will ensure we are able to successfully pursue growth in the new operating environments
- Maintenance of strong business ethics, which will protect both our reputation and our ability to establish transparent and mutually rewarding relations with governments, business partners and suppliers

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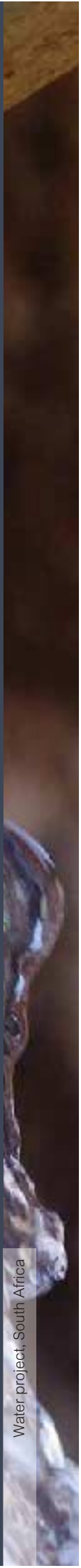
Building mutually beneficial community relations ... Page 141
Forging strong relations through business ethics ... Page 154

Highlights

US$43m
Investment in internal training and skills development

US$54m
Socio-economic development (SED) spend in 2011

541
Number of employee hostel units upgraded in South Africa during 2011



Water project, South Africa

5.1 Becoming the employer of choice

If we are to achieve our Goal of 5 million gold equivalent ounces in production or in development by 2015, we need a well-trained, motivated and stable workforce – including technical experts, managers and operational personnel. This is as true at our more labour-intensive, mature mines in South Africa as it is for our mechanised mines in Australia and at South Deep. The challenge is exacerbated by the mining sector's global 'war for talent', the ageing nature of the global mining workforce and the ongoing boom in the extractive industries – all of which make recruitment and turnover a key risk for Gold Fields – as well as its peers.

In part, this prompted us to develop a new People Strategy in 2011. It is based on:

- Building the Gold Fields global brand and making us the 'employer of choice'
- Creating a 'borderless' Gold Fields that offers employees global mobility
- Establishing a centralised and integrated Human Resources Data Reporting System
- Attracting and retaining talent, including through the review of our base salaries, short- and long-term incentives, and quality of working life
- Enhancing our internal and external skills pipelines

We aim to employ and develop local employees wherever we operate and at all levels of our business. This is true of all of our operating locations – whether we are subject to local employment regulations or not. We believe our approach will help build local capacity, broaden local skills pools, enhance our reputation – and so help underpin the long-term sustainability of our business. This approach is in line with our efforts to empower historically disadvantaged individuals within our workforce in South Africa (p133-135).

5.1.1 Providing productive and worthwhile employment positions

Gold Fields had a total of 46,378 employees in service at year end (2010: 47,268) – with 90.1% of them located in South Africa. A total of 94% of our employees in Australia, Ghana and Peru are nationals. A total of 63%[1] of employees in South Africa are Historically Disadvantaged South Africans (HDSAs). The vast majority of the remainder are from countries in the Southern African Development Community.

During 2011, there were no large-scale forced retrenchments at our operations. Although our workforce in South Africa was reduced by 1.9%, this was through natural attrition and voluntary separation. In this way, there will be a gradual, un-forced workforce reduction in South Africa, through which the long-term sustainability of the region will be assured – without compromising production.

In 2011, we formalised the voluntary separation process so that all employees who elect to take the separation package are provided with seven weeks of portable skills training– before leaving the company. This is with the aim of delivering the skills and knowledge that will help them establish sustainable livelihoods, for example in construction, plumbing and related trades.

Additional content online

www.goldfields.co.za

[1] Excluding foreign nationals

Far left: Employee at Cerro Corona, Peru
Middle: Employees at Agnew, Australia
Right: Employee at Beatrix, South Africa

Figure 5.1: Total employees

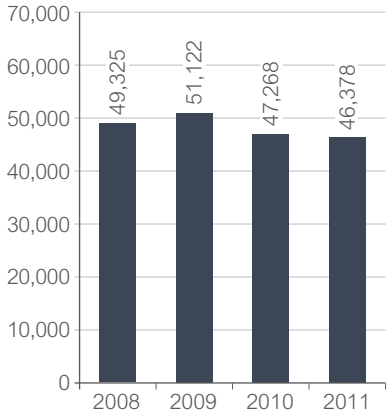


Figure 5.2: Total employees by region (%)

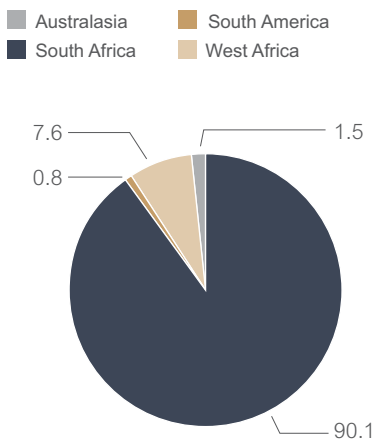


Figure 5.3: Total staff turnover rate by employee type (%)

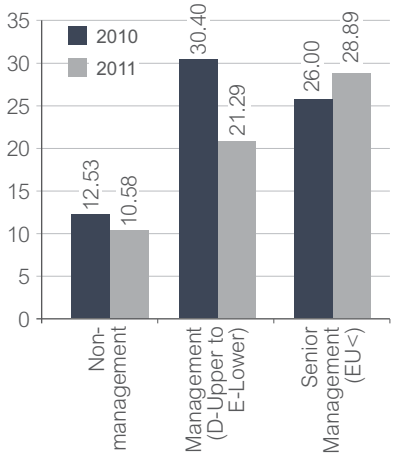


Figure 5.4: Group human resources performance

Category	2011	2010	2009	2008
Total employees (excluding contractors)	46,378	47,268	51,122	49,325
HDSA employees in South Africa (%)	63.0	61.5	60.9	58.4
HDSA employees in South Africa (% - management)	42.7	41.4	39.1	37.2
National employees in Ghana (%) (excluding contractors)	98.00	96.92	96.91	97.08
Minimum wage ratio	2.52	2.72	2.79	2.52
Female employees (%)	8.0	7.4	6.9	5.7
Ratio of basic salary of men to women	1.06	1.05	1.07	1.12
Employee wages and benefits (Rm)	9,448	7,514	6,612	5,804
Average training (hours per employee)	128[2]	683	650	584
Employee turnover (%)	10.72	13.41	13.70	18.57

[2] Difference in training hours between 2010 and 2011 reflects the implementation of an enhanced data reporting methodology

5.1.2 Improving capabilities through training

The provision of world-class training plays a vital role in enhancing employee productivity and safety – as well as the long-term capabilities of our company. It also plays a key role in attracting and retaining the best talent in a highly competitive global labour market.

During 2011, we invested a total of R310 million (US$43 million) in internal training and skills development across the Group (2010: R229 million/US$31 million). This helped us deliver training to a total of 44,940 employees and contractors (including multiple attendances by individuals).

South Africa

Our training efforts are underpinned by our maintenance of strong internal training institutions. This includes our high-profile Gold Fields Business and Leadership Academy in South Africa.[1] The Academy delivers high-quality, on-site training courses, including mining, engineering, metallurgy and mineral resources management.

It does so using an innovative training approach that focuses on tailored programmes adapted to each individual's specific level, education and maturity – as well as subsequent monitoring.

Training statistics at the Academy for 2011 include the following:

- Induction and refresher training: 43,717 (2010: 35,241)
- New skills training: 10,943 (2010: 20,051)
- Adult Basic Education and Training (ABET) programmes: 1,555 (2010: 2,997)
- Engineering learnerships: 265 (2010: 234)
- Mining learnerships: 340 (2010: 388)

In addition to the provision of training at the Academy, we provided a total of 106 university bursaries to employees.

Plans have been approved for the establishment of a new mechanised mining training centre at South Deep in 2012. This will provide comprehensive training to operating and maintenance staff – and build on the highly specialised skills we have already developed at the site. This will directly support mine productivity, whilst also reducing our need to 'buy-in' mechanised mining skills from an intensely competitive global market. Furthermore, the Centre will ultimately develop a highly skilled cadre of mechanised miners in South Africa, which will not only support our future in the country – but that of the sector as a whole.

Ghana

In 2011, we carried out an audit to ensure we had the right skills to support our shift towards owner-operation – and to help us address skills shortages amongst nationals in the country (p131). The results of this audit helped inform plans for the future development of an engineering training centre in Tarkwa.

The centre is expected to act as a major regional training hub for mine engineers, artisans and maintenance engineers. This will deliver a solid internal skills pipeline to feed our owner-operated mines – and support future production expansion at Damang.

Furthermore, the centre will enhance stakeholder recognition of our long-term investment in Ghana and its people.

What are learnerships?

Learnerships are ongoing training programmes provided to our workforce in South Africa. They include both theoretical and practical training and lead to the award of nationally recognised qualifications.

5.1.3 Achieving success through careful talent management

Effective talent management is playing a key role in our ability to compete for high quality technical, engineering and mineral resource specialists. Furthermore, it is supporting the successful 'devolution' of senior management within Gold Fields, through the cultivation of committed, high-calibre leaders within each region.

Additional content online

www.goldfields.co.za

Australia

In Australia, labour competition is particularly intense due to the local energy and mining boom, as well as Western Australia's dynamic 'fly-in, fly-out' labour market. This has contributed to a turnover rate of 28%. Whilst very high by ordinary standards, this is relatively normal in the Australian mining context.

[1] The Academy is accredited by the Mining Qualifications Authority, the Construction Education and Training Authority. It works closely with the Chamber of Mines Education Advisory Council, the mining advisory committees of the University of Witwatersrand and the University of Johannesburg and the Mine Education Trust Fund.

Nonetheless, we are re-energising our efforts to attract and retain high quality personnel at our operations. Initiatives started in 2011 include:

- Centralisation of all recruitment activity at a regional level
- Development of a compelling Employee Value Proposition strategy
- Improved identification of critical roles and succession planning
- Establishment of a stronger market-presence, including awareness raising, advertising and branding
- Targeted recruitment of expatriate technical specialists, including those from South Africa

We also built on a number of initiatives implemented in 2010. These include, for example, our regular salary review, our employee share and bonus schemes and our 'fast-track' graduate development programme.

In addition, we are continuing our innovative leadership development programme, run in partnership with the Australian Institute of Management and the University of Western Australia. The programme, which runs dedicated three-month courses aimed at supervisors and middle managers, has been expanded to include senior managers. In 2011, approximately 50 employees took part in this intensive programme.

Collectively, these actions are part of a strategy to establish Gold Fields as an employer of choice in the Australian market, based on the unique opportunities we can offer in terms of development and global mobility.

www.aim.com.au
www.uwa.edu.au

Ghana

In Ghana, the market for senior nationals remains intense. Local regulations require that a maximum of 5% of management, supervisory and technical positions at mining companies can be filled by expatriates. A relatively limited pool of local specialists and managers, as well as the desire of many skilled nationals to work outside of Ghana, contribute to intense competition for their services. Although our turnover in Ghana has increased from a relatively modest 5% to 7.4%, it is disproportionately focused on skilled individuals in middle- and senior-management.

Our prime means of managing this challenge is an intensive succession planning programme. Whenever we fill a post with an expatriate employee, we also develop a national employee using formalised Individual Development Plans. This guarantees a constant pipeline of continually developing national talent, which helps underpin both our business performance within the country and our long-term social licence to operate.

Other actions to address this challenge include:

- Enhanced offerings around structured and predictable career progression
- Annual salary surveys to ensure we remain more than competitive
- Annual action plans to address relevant human resources issues identified in our climate surveys
- Facilitation of the temporary transfer of senior nationals to other Gold Fields regions on an expatriate basis

We continued to run our Senior Leadership Development programme with the Ghana Institute of Management and Public Administration. The programme includes attendance at the Darden School of Business at the University of Virginia in the United States. During 2011, 10 senior officials took part in the programme.

As a result of such efforts, we increased the proportion of nationals in senior positions to 60.5% (2010: 56.4%).

www.gimpa.edu.gh
www.darden.virginia.edu

Peru

In Peru, we run an internal leadership programme for all C-Band employees to identify staff that will eventually move into middle- to senior management levels. Identified individuals are provided with the relevant resources, coaching and training to make this progression.

In addition, we have a formal leadership programme for the development of high-quality management personnel and supervisors. These are run in close partnership with the University of Piura and DBM Peru, and cover issues such as leadership, human rights, executive coaching, technical skills and financial skills. During 2011, 51 managers and supervisors completed these extensive programmes.

www.udep.edu.pe
www.dbmperu.com

South Africa

In South Africa, we have enhanced and formalised our leadership development offering, which is tailored to each employee's Individual Development Plan. In particular, the Gold Fields Business and Leadership Academy is piloting an approach that ultimately aims to significantly enhance leadership and succession across the Group.

The Academy is accredited by the Mines Qualifications Authority, the Construction Education and Training Authority and the Institute of Leadership and Management. It offers a comprehensive range of in-house and on-site training courses including mining engineering, metallurgy and mineral resources management.

The Academy is represented in a number of external bodies, including the Chamber of Mines Education Advisory Council, the mining advisory committees of the University of Witwatersrand and the University of Johannesburg and the Mine Education Trust Fund.

The Academy uses a unique training approach that focuses on tailored programmes adapted to each individual's specific level, education and maturity to ensure the establishment of an integrated and long-term skills and leadership pipeline, which will aid the internal mobility of our managers.

As part of this approach we offer our employees a range of leadership programmes with a wide range of institutions, including Duke University in the United States, the Gordon Institute of Business Science in Johannesburg and the Louis Allen Leadership Development programme. Beyond these core programmes, we offer relevant employees additional tailored training programmes based on electives provided through third-parties.

www.gibs.co.za
www.louisallenworldwide.com

Additional content online

www.goldfields.co.za

5.1.4 Promoting constructive labour relations

By the end of 2011, none of our employees in Australia had opted to join unions. In contrast, 97% of our employees in South Africa and 95% of our employees in Ghana belong to unions. In Peru, a trade union has started at our Cerro Corona mine, with limited participation to date.

The three-year wage agreement signed with the Ghanaian Mineworkers Union in October 2010 remains current, meaning no wage re-negotiation was necessary during 2011. This demonstrates the healthy and stable nature of our relationship with organised labour in Ghana.

In July 2011, our operations in South Africa were impacted by a sector-wide strike related to the annual wage negotiation process. The strike, which was called by the National Union of Mineworkers (NUM), Solidarity and the United Association of South Africa (UASA) halted production for five days. This resulted in lost production equivalent to 43,000 ounces of gold.

Joint negotiations with other affected gold mining companies (through the Chamber of Mines) produced a two-year wage agreement that reflected compromise on both sides.

Additional content online

www.goldfields.co.za

5.1.5 Respecting human rights

Human rights represent a key part of our Sustainable Development Framework and are expressly addressed in our new Code of Ethics (p25) and Human Rights Policy. As a signatory to the United Nations Global Compact, and as part of our commitment to the principles of the ICMM's Sustainable Development Framework, Gold Fields upholds the highest standards for the protection of human rights.

These include:

- Freedom from child labour
- Freedom from forced or compulsory labour
- Freedom from discrimination
- Freedom of association and collective bargaining

www.unglobalcompact.org
www.icmm.com

Far left: Employees at KDC, South Africa
Middle and right: Employees at Beatrix, South Africa

5.1.6 Transformation and diversity

Gold Fields remains committed to the creation and maintenance of a diverse and demographically representative workforce.

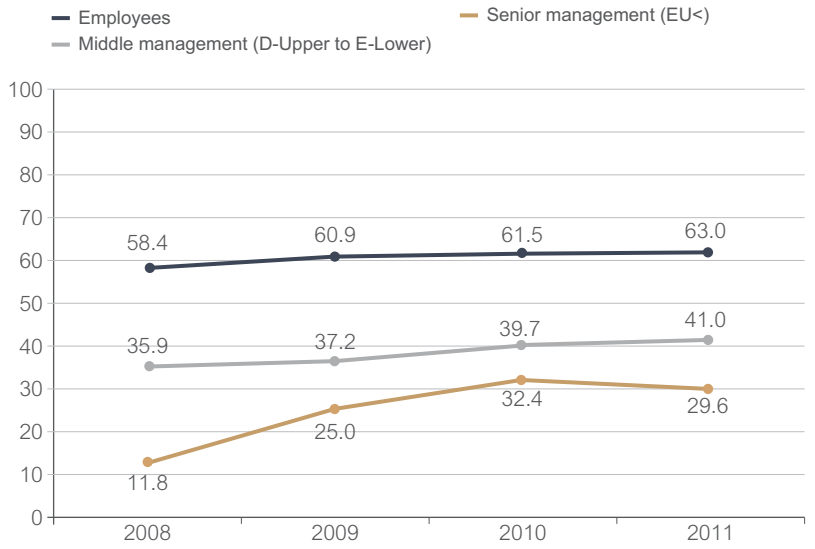
Empowerment of Historically Disadvantaged South Africans (HDSAs)[1]

In South Africa we recognise the long-term value of driving transformation within the mining sector – and society more broadly. Under the revised Mining Charter (p155), we are required to fill 40% of all management positions with HDSAs by 2014.

In 2011, we achieved the following distribution of HDSAs at senior- to middle management levels in South Africa:

- Group Board: 36% (2010: 36%)
- Group ExCo: 29% (2010: 15%)
- SA-domiciled Group ExCo: 44% (2010: 37%)
- Gold Fields South Africa Board: 60% (2010: 60%)
- Gold Fields South Africa ExCo: 38% (2010: 38%)
- Senior management (E-Upper and above): 30% (2010: 32%)
- Middle management (D-Upper and E-Lower): 41% (2010: 40%)

Figure 5.5: HDSAs within the Gold Fields workforce in South Africa (%)[2]



Although we continued to make progress in this respect, we acknowledge more still needs to be done. Our ongoing efforts are primarily focused on a sustainable, long-term approach based on targeted education, training and development of our HDSA employees. However, the lead-time for this process is relatively long. As a result, we supplement this approach with the appointment of high quality, externally recruited HDSA managers into key company positions

Employment of nationals

The employment of nationals is a key component of our social licence to operate in both Ghana and Peru. The proportions of our workforce made up by nationals are:

- Peru: 99.5% (2010: 99.4%).
- Ghana: 98.0% (2010: 96.9%)

In Ghana, we are particularly focused on ensuring that nationals are adequately represented amongst senior managers (currently 60.54%) to help address intense competition for local talent (p131).

[1] White females are included within the definition of HDSAs

[2] Percentages relate to our total workforce, excluding foreign nationals who were included in the figures reported last year

Case study

Phasing out the Fanakalo language in South Africa

In 2011, Gold Fields rolled out a new Business Languages Policy for its South Africa region, which includes a strategy for phasing-out the Fanakalo language used at its operations.

Historically, employees in South Africa have communicated using Fanakalo – an artificial hybrid of Zulu, English and Afrikaans. The language was originally developed within the mining sector to allow communication between groups who speak different languages – a significant challenge within largely migrant workforces. Due to its history, Fanakalo is associated in the minds of many with the Apartheid era – and is believed to be disrespectful to speakers of local languages. Furthermore, the relatively simplistic nature of Fanakalo means it is becoming less useful in an increasingly sophisticated operational environment – and one in which important technical, safety and health information needs to be clearly understood. This is particularly the case as Gold Fields advances mechanised mining and development methods within its mines.

The use of Fanakalo will be phased out using a strategy developed in partnership with the Language School at Wits University, which will run until 2022. An external research team has established that three African languages – Zulu, Xhosa, and Sotho – are currrently dominant within the Gold Fields workforce. These will be used to replace Fanakalo as the main means of communication at Gold Fields mines – whilst English will be used for business purposes. As part of the strategy, all employees will be given access to language training programmes, so they are able to speak and understand the 'official' Gold Fields languages. The current Adult Basic Education and Training programme, which teaches English and numeracy, will continue, whilst new language courses will be introduced for the three African languages. These will be based on 80-hour interactive language programmes, which will be embedded at the operations and integrated into the performance management system.

"With proper communication you can inject magic into a team and achieve great things from a safety and production point of view."

Peter Turner, Executive Vice-President: South Africa Region

www.witslanguageschool.com

KDC, South Africa

Beatrix, South Africa

South Deep, South Africa

KDC, South Africa

Representation of women

In line with our transformation commitments, we are seeking higher levels of representation of women throughout Gold Fields – from the mines to the boardroom. Women currently make up the following proportions of positions within Gold Fields:

- Board: 21.4% (2010: 21.0%)
- Senior management (E-Upper and above): 8.9% (2010: 2.7%)
- Middle management (D-Upper and E-Lower): 13.3% (2010: 14.7%)
- Mining: 3.6% (2010: 3.3%)
- Total: 8.0% (2010: 7.4%)

Representation within our Board means we are ahead of the 20% target currently being considered by the Securities and Exchange Commission in the United States for 2013.

We are continuing to face a number of challenges in our efforts to attract women to the company. These include an inadequate pool of skilled female workers, as well as perceptions around the physical demands of mining.

Figure 5.6: Group basic salary of men to women (1:x)

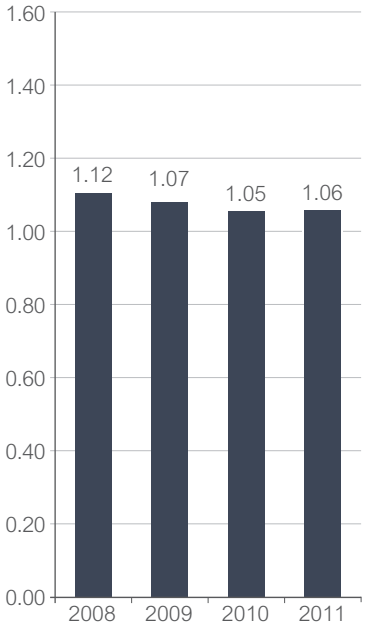
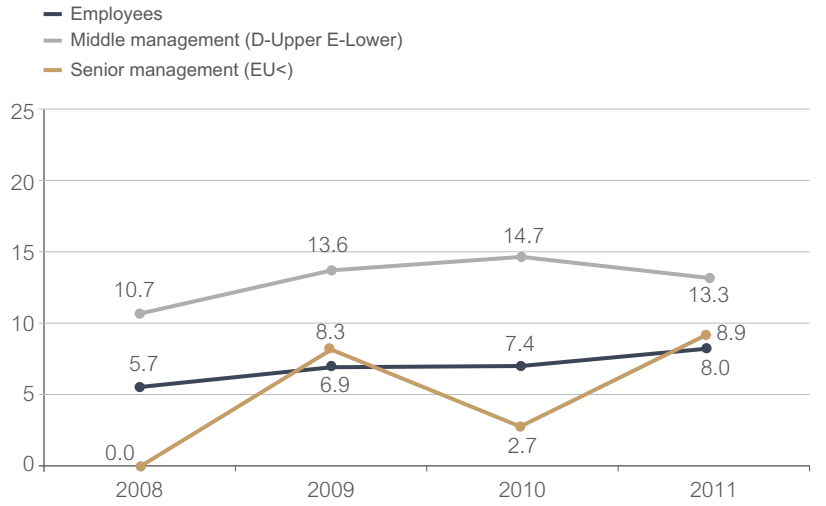
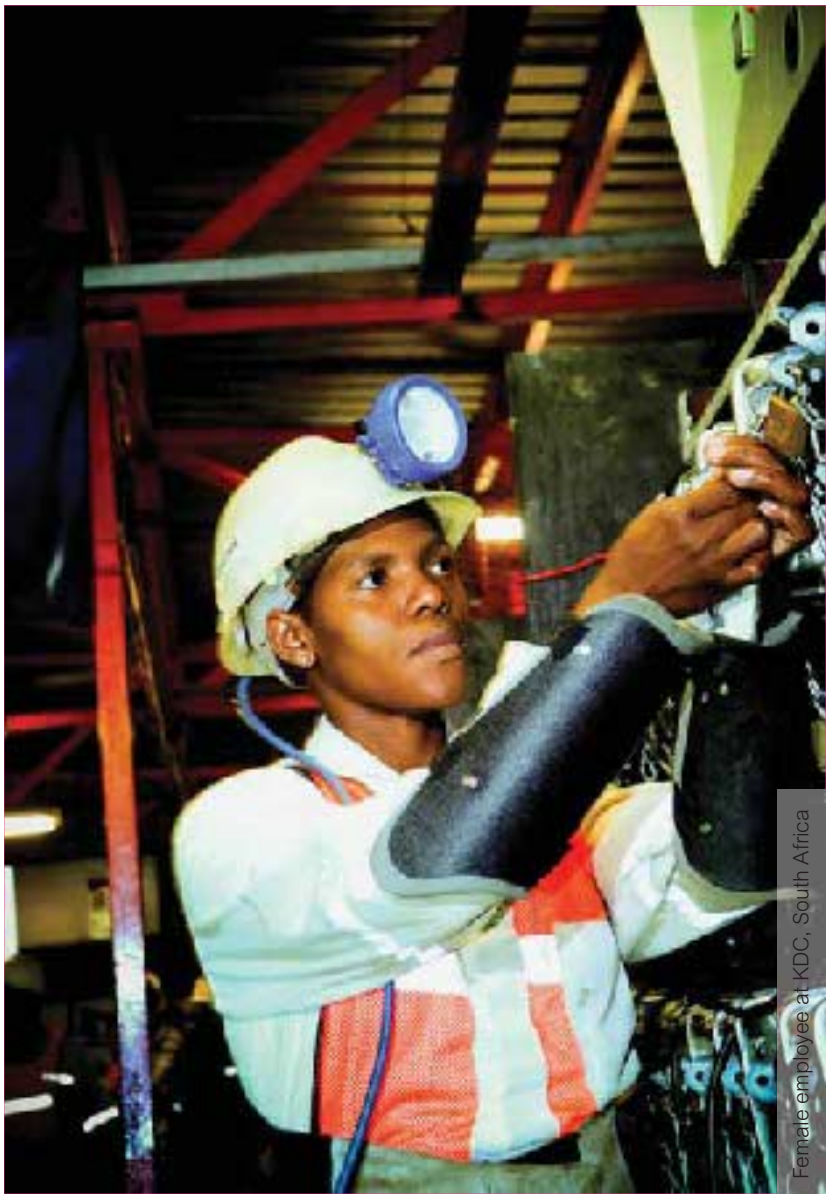


Figure 5.7: Group female employees (%)





Female employee at KDC, South Africa

Local school children near Damang, Ghana

5.2 Promoting productivity, health and wellbeing

In many senses, health poses as much of a legal, operational and reputational risk as our safety performance – albeit over a longer time scale. Our approach to managing this risk is characterised by our holistic focus on worker wellbeing, which goes beyond conventional compliance-based measures of occupational health and communicable disease.

This is the rationale behind our innovative and sector-leading 24 Hours in the Life of a Gold Fields Employee programme (p140). This includes, for example, a broad-range of initiatives around occupational health and safety, healthcare, living conditions, nutrition, education, sport and recreation. Through this approach, we aim to ensure that we have a fit and motivated workforce.

Figure 5.8: Health performance

South Africa	2011	2010	2009	2008
Noise Induced Hearing Loss submissions (Rate per 1000 employees)	1.35	1.51	1.04	1.80
Silicosis submissions (Rate per 1000 employees)	2.04	3.11	3.52	5.45
Chronic Obstr. Airways Disease (COAD) (Rate per 1000 employees)	1.27	1.54	0.68	1.55
Cardio-Respiratory Tuberculosis (CRTB) (Rate per 1000 employees)	18.02	15.97	13.89	23.79
Employees on Highly-Active Anti-Retroviral Treatment (HAART)	3,523	2,991	2,155	1,492
Started HAART (Individuals)	1,010	5,150	4,114	3,136
Retained on HAART (Individuals)	3,523	2,991	2,155	1,492
Exited HAART (Individuals)	573	2,159	1,959	1,644

5.2.1 Promoting occupational health

Our deep underground and relatively labour-intensive South African operations tend to pose higher occupational health risks than our other mines. This includes, for example, risks around Silicosis, Chronic Obstructive Airways Disease (COAD) and Tuberculosis (TB).

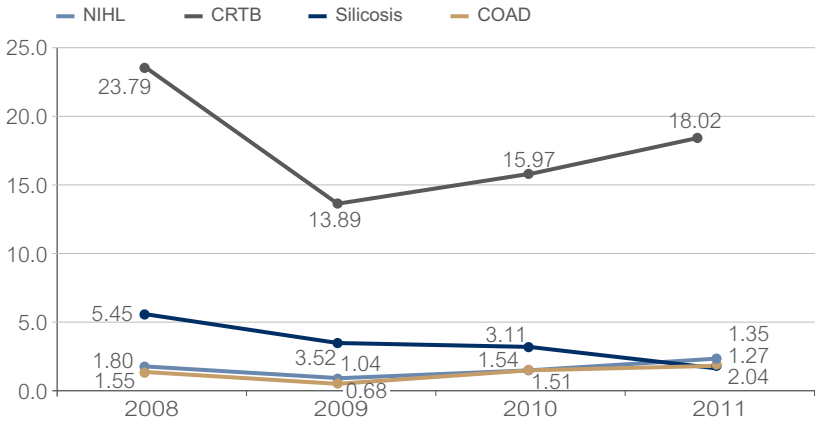
All employees are subject to initial and annual medical surveillance. These are tailored in line with local legal requirements, as well as operation- and role-specific health risks. The assessments are aimed at preventing, identifying and treating occupational diseases.

In 2011, we submitted the following cases for certification:

- 66 cases of COAD (2010: 81)
- 139 cases of Noise Induced Hearing Loss (NIHL) (2010: 78)[1]
- 107 cases of Silicosis (2010:164)
- 913 cases of CRTB[2] (2010: 1,108)

During 2011, we opened a new, dedicated Occupational Health Centre at KDC, which carries out comprehensive occupational health assessments of all new and existing employees – as well as selected periodic assessments. The Centre has significantly improved assessment quality, as well as turnaround times – supporting our proactive management of employee health risks. The results are used to identify high-risk individuals and those with medical conditions, who are then moved to workplace roles that pose a lower health risk.

Figure 5.9: Occupational disease in the South Africa region (Rate per 1,000 employees)



This helps ensure they are kept in employment, whilst reducing the likelihood of an occupational disease developing in the first place. Plans are in place to roll out a similar model throughout the Group and to increase the frequency of periodic assessments.

We also implement quantitative Health Risk Assessments under our 24 Hours in the Life of a Gold Fields Employee programme.

In addition to the occupational diseases identified above, these confidential assessments address general health and lifestyle issues such as hypertension, diabetes, cholesterol, diet and mental health.

Once employees have participated in the process, they are referred to practitioners, who pro-actively address their well-being. Our high performance centres and employee assistance programmes are available to provide appropriate support and assist in structuring lifestyle interventions.

Engineering controls

As with safety risks (p59-60), one of the most important ways we can reduce workplace health risks is through proactive engineering, which aims to reduce noise and dust levels in line with the Mine Health and Safety Council milestones for 2013. Measures taken during 2011 to reduce these risks include:

- Upgrading of tip filters through the replacement of old systems or the installation of pre-filtration systems to existing filters
- The use of foggers to trap dust emitted from tipping points
- Footwall treatment to bind dust to the footwall and prevent it entering intake airways
- Installation of spring-loaded tip doors to minimise dust emissions
- Analysis of individual dust filters to sample quartz content and further improve the measurement of individual exposures
- Reduction in noise levels from equipment and machinery by purchasing quieter equipment and retrofitting noise suppression systems
- Appropriate protective equipment for noise protection

[1] Increase in cases of NIHL is partly due to implementation of new methodology in our South America region

[2] New and re-treatment cases

Legal context

In March 2011, the South African Constitutional Court ruled that legislation that limited employees' rights to claim compensation for certain diseases including silicosis was unconstitutional. As a result, the Court found that employees had the right to sue employers for common law damages to the extent that such employees could prove that they had suffered loss as a result of the negligence of the employer and such loss could be quantified.

South Africa's Chamber of Mines has for some time been actively working in tripartite forums on the alignment and reform of the statutory framework for compensation in respect of occupational lung disease. This has been with the aim of eliminating anomalies in the application of the legislation, whilst not undermining the viability of the mining industry – or the jobs of the people who work in it. In addition, the Chamber of Mines and its members have also been working on a range of initiatives to address occupational health and safety issues related to former mineworkers, as well as current mine employees.

We are currently analysing the situation to assess – and try and quantify – the potential for any claims against Gold Fields. To date no claims have been received by the company. In a June 2011 report, Standard & Poor's stated that it was premature to assess whether South African mining companies would be significantly impacted by silicosis claims, and that its rating of these companies would, subject to any emerging developments, remain unaffected.

In Ghana, noise and dust are considered to be emerging issues. During the past three years, we have had 4 cases of NIHL registered for compensation – although no claims have yet been approved by local authorities.

5.2.2 Helping employees address HIV/AIDS, TB and malaria

HIV/AIDS and TB

South Africa

The bulk of our workforce (90.1%) is exposed to significant risk of exposure to HIV/AIDS by virtue of living and working in South Africa, which has an adult prevalence rate of 17.8%[1] - as well as other factors such as employee demographics, migratory status and lifestyles. Indeed, HIV/AIDS and TB[2] remain the largest contributors to morbidity rates, mortality rates and retirements due to medical causes. In 2011, for example, we had a medical related death rate of 3.96 per 1,000 employees – compared to our FIFR of 0.38.

To counter this, our integrated HIV/AIDS, Sexually Transmitted Infections and TB (HAST) strategy is based on promotion, prevention, treatment and support. In addition, it explicitly addresses the interrelationships between HIV/AIDS, other sexually transmitted diseases and TB. Our approach has been developed in cooperation with the South African HIV Clinicians Society, as well as a number of other stakeholders.

Our workplace HIV/AIDS education and awareness raising programme is based on regular poster campaigns, guidance documents and condom distribution at all workplaces. We also offer free and confidential Voluntary Counselling and Testing (VCT) to all our employees in South Africa. In 2011, our workforce participation rate was 11% (2010: 13%).

We provide free Highly Active Anti-Retroviral Treatment (HAART) to HIV infected employees through our network of on-site, doctor-based clinics. This is now provided in easy to manage, single-dose form. In 2011, 1,010 employees in South Africa joined our HAART programme (2010: 1,036). This took the total number of active participants to 3,523 (2010: 2,991). Dependants of employees can receive HAART via our medical aid schemes.

Those infected with HIV are provided with support through our 24 Hours in the Life of a Gold Fields Employee programme. This includes a range of services such as doctor-based primary healthcare, nutritional support, psychological counselling and social services. In addition, we provide care and support for ill health retired employees through our home-based care programmes in labour-sending areas.

We place particular emphasis on the de-stigmatisation of HIV/AIDS, both to counter potential discrimination and to ensure employees are willing to participate in VCT and HAART treatment. One of the main means by which we address stigmatisation – as well as potential interactions with other issues such as TB and sexually transmitted infections – is through the integration of HIV/AIDS management into our mainstream health services. This includes, for example:

- Integration of HIV/AIDS into our general chronic disease health management processes
- Integration of VCT into our general Health Risk Assessments
- Provision of relevant HIV/AIDS support services through our existing employee assistance programme

In recognition of the potentially close relationship between HIV/AIDS within our workforce and within our surrounding communities, we co-support (with Johns Hopkins University and the Bill & Melinda Gates Foundation) three related community programmes.

[1] UNAIDS, 'Report on the Global AIDS Epidemic 2010', www.unaids.org

[2] Which is exacerbated as a result of co-infection with HIV/AIDS

This includes the Lesedi Lechabile project near Beatrix, as well as the Westonaria Randfontein AIDS Project (WRAP) and the Mothusimpilo project near KDC. Activities include peer education, presumptive periodic treatment and treatment of STIs.

Ghana

Ghana has a national adult HIV/AIDS prevalence rate of 1.5%.[3] Our efforts to address HIV/AIDS take place under our broader wellness programmes. These are supported by dedicated teams of trained workplace health educators, who carry out awareness-raising and condom distribution.

All employees and contractors are covered by a confidential VCT programme. In 2011, 85% of our employees in Ghana took part in testing. The current HIV prevalence rate for our Ghana operations is 1%. Employees who test positive for HIV are provided with free HAART – as are their families and dependants.

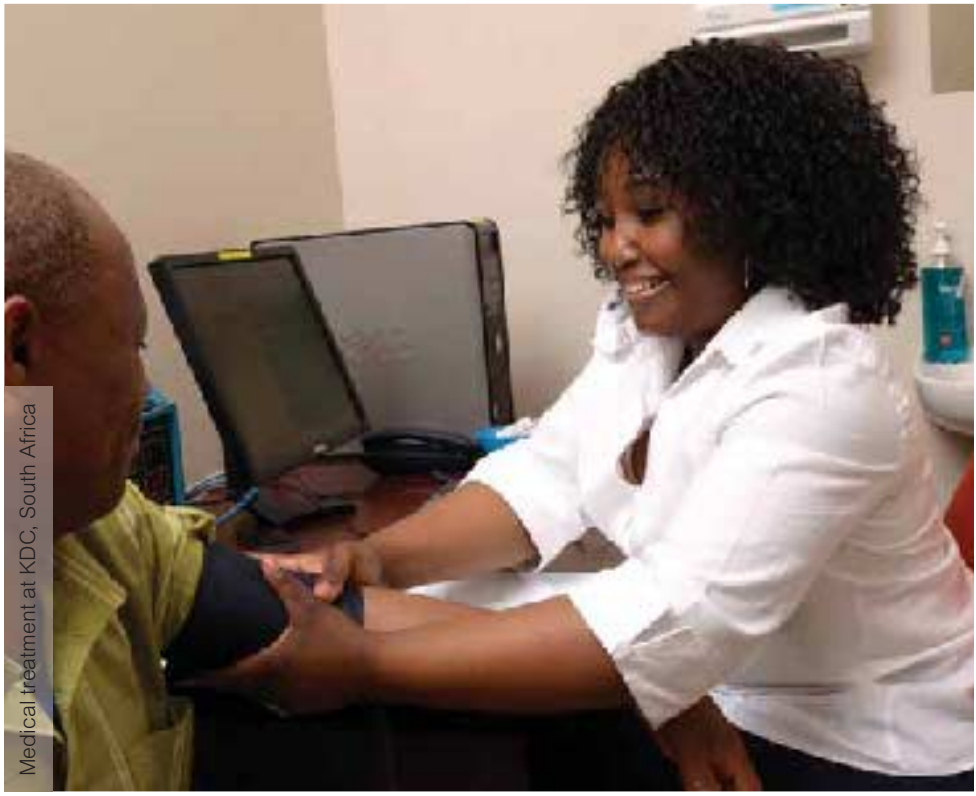
Our community programmes are supported by trained teams of community health educators, who carry out condom distribution at high-traffic sites, listening groups for weekly 'Bo Woho Ban' ('protect yourself') radio programmes, health-based school drama and abstinence clubs.

During 2011, Gold Fields Ghana won the Global Business Coalition's 2011 Business Action on Health Award for Workforce/Workplace Engagement – with a particular focus on HIV/AIDS management. In particular, the GBC highlighted Gold Fields strong cross-sector and industry collaboration, as well as our outreach to vulnerable and most-at-risk populations.

Additional content online

www.goldfields.co.za

[3] UNAIDS, 'Report on the Global AIDS Epidemic 2010', www.unaids.org



Medical treatment at KDC, South Africa

Malaria

In Ghana, we have a comprehensive malaria strategy based on education, prevention, prophylaxis and treatment. Specific workplace actions carried out in 2011 include:

- Indoor residential spraying
- Provision of anti-malarial drugs
- Monitoring, measurement and evaluation of affected individuals

In addition, we carried out a number of community actions, including education and training around malaria-prevention for local community members, as well as the distribution of insecticide-treated nets in partnership with the Ministry of Health. In 2011, we had 215 workplace malaria cases at our Ghana operations.

5.2.3 Supporting employee wellbeing

Gold Fields provides a range of healthcare services to employees. In South Africa, for example, this includes access to two hospitals, as well as primary healthcare clinics and emergency medical services provided by the mines.

Beyond this, our holistic approach to employee care means we also address employees' broader social, psychological and emotional wellbeing. If left unaddressed, these can have a significant impact on motivation and productivity and can also contribute to health and safety incidents.

Case study

Gold Fields Ghana wins 2011 Global Business Coalition Health Award

Find out more online

Family accomodation at KDC, South Africa

As a result, our holistic 24 Hours in the Life of a Gold Fields Employee programme aims to ensure our employees:

- Work safely and effectively
- Are well housed
- Enjoy a healthy lifestyle, including decent nutrition and sleep
- Have access to recreational activities, including sport
- Receive market-related compensation and are subject to appropriate incentives and bonus schemes

These efforts are closely integrated with our other healthcare initiatives, including our comprehensive Health Risk Assessments (p140).

In 2011, we opened a second High Performance Centre (HPC) at KDC to help rehabilitate employees with lifestyle diseases, occupational injuries, occupational health risks and other issues that affect wellbeing and productivity. During the course of the year, a total of 9,345 employees attended the HPCs (2010: 3,409). This is as a result of our efforts to achieve preventative 'mass-coverage', instead of using the HPCs to retrospectively address a minority of serious injuries or diseases.

Although this holistic approach to wellness was pioneered in South Africa, it is being rolled out to our other regions, having been adapted to suit local circumstances.

In Australia, we have established the Raise the Bar employee health and wellbeing programme at St Ives. This includes the carrying out of 'Live Well Health Assessments' by external experts. Results from these assessments are used to help deliver tailored programmes to improve employee wellbeing – including education and awareness raising around diet, exercise, health risks and other related issues.

In Ghana, our Wellness Programme covers the physical, emotional, financial, spiritual, occupational and social wellbeing of both employees and contractors. A total of 80% of our employees have undergone Health Risk Assessments under the programme. The results of these are helping us address issues such as high blood pressure, high cholesterol and other lifestyle-related issues.

Accommodation

Quality of accommodation is a key determinant of employee wellbeing. In addition, it has traditionally been a contentious issue in South Africa, due to the mining industry's traditional reliance on migrant workers housed in high-density accommodation (also called hostels). Our housing programme comprises two key elements – an upgrade of hostels and the construction of houses. We have committed R586 million (US$81 million) to upgrading these hostels between 2010 and 2014 – with R350 million (US$48 million) of this spent by the end of 2011.

The upgrading of our on-site hostels, in which 44% of our South African workers live, forms part of our Social and Labour Plan commitments, while the Mining Charter requires the sector to achieve one occupant per room by 2014. We are making good progress in this respect, and achieved an occupancy rate of around 1.45 per room during 2011.

In addition, we also constructed 100 new family homes at KDC and South Deep – on top of 400 already constructed over the last two years. By the end of 2012, we plan to have completed a total of 957 of these new homes. The cost of our multi-year housing programme is R200 million (US$28 million).

A total of 14,000 of our employees in South Africa who do not live in high-density or family accommodation receive a living out allowance of R1,520 (US$211) a month. Many employees who take up the living out allowance choose to live in informal settlements.

We do not encourage these informal settlements, but to the extent that they appear inevitable, we try and mitigate their negative impacts by helping improve living conditions there. This includes, for example, the provision of basic utilities.

5.3 Building mutually beneficial community relations

The operational continuity of our mines, as well as our ability to successfully establish new operations, relies on a strong social licence to operate from our local communities – and, by extension, our host governments. This makes it essential that we deliver clear, long-term social and economic benefits to those amongst whom we work. In essence, this is about establishing and maintaining relationships based on ongoing, shared interests.

5.3.1 Engaging local stakeholders

Constructive and transparent engagement with local stakeholders is a critical prerequisite for a strong social licence to operate. Because of this, we place particular focus on establishing and maintaining constructive, consultative and cooperative stakeholder relations.

This includes regular and formalised engagement with the following groups to address relevant and material stakeholder issues:

- Central and local government
- Traditional community leaders
- Informal community groups
- NGOs
- Organised labour
- Local businesses

Engagement is guided by relevant legislation, our Communities and Indigenous People Policy, our Social and Labour Plans in South Africa, as well as the internationally-recognised AA 1000 Stakeholder Engagement Standard.

In addition to these established community engagement processes, we conduct public engagement as part of all Environmental Impact Assessments (EIAs) across the Group.

This includes informing stakeholders about the relevant characteristics of each project (such as likely impacts and mitigation measures), as well as addressing issues of concern raised by such stakeholders. In 2011, this process – and other project-based stakeholder engagement – was employed with respect to:

- Our Far Southeast project in the Philippines, with particular focus on obtaining the Free Prior and Informed Consent (FPIC) from the local indigenous community for our exploration activities – as required by local legislation (p107)
- The ongoing development of an EIA for our Chucapaca project in Peru, as well as an innovative, collective land acquisition programme (p114)

Figure 5.10: Examples of local stakeholder engagement

Region	Details
Australasia	We engage local indigenous groups at both mines under the Native Title Act 1993 on issues including native title, land access and the protection of cultural heritage sites (p148-149).
South Africa	We are subject to a range of statutory Social and Labour Plan (SLP) requirements, which govern the majority of our formal interactions with local communities. The Local Economic Development element of these plans addresses issues ranging from local infrastructure to enterprise development. In addition, we participate in regular engagement relating to local water issues in the West Wits area – through, for example, the Far West Rand Dolomitic Water Association and the Mining Interest Group (p64).
South America	Cerro Corona has a formal community engagement framework that uses pre-established schedules to address community priorities such as community development (p145) and water quality (p66). The mine also participates in the "Mesa de Dialogo y Concertacion de Hualgayoc", a community forum focused on regional development projects. The Mesa is led by the Mayor of Hualgayoc and includes NGOs and public officials. Joint water monitoring with local communities also plays an important role in generating trust around this sensitive issue.
West Africa	Both mines have well-established engagement frameworks based on: • Broad-based Mine Consultative Committees • Formalised, regular engagement with local chiefs • Regular Community Committee meetings • Direct Community Forums • Continuous informal engagement, including an 'open-door' policy with respect to local community members wishing to raise concerns Regular areas of discussion include land compensation (p149, online), local employment (p146), local infrastructure (p145) and illegal mining (p149-153). At Tarkwa, we also carry out regular joint water testing with community representatives.

5.3.2 Promoting Socio-Economic Development

It is in our clear business interest to promote local development in our operating environments. Our most important means of doing so is through our substantial contribution to public revenues and the payment of salaries in our countries of operation (Figure 5.12). In reality, such revenues do not necessarily directly benefit our local communities – or contribute to our social licence to operate at a local level. As a result, we also run substantial Socio-Economic Development (SED) programmes to ensure we deliver tangible and lasting benefits to the specific communities amongst whom we work.

In 2011, we spent a total of US$54 million on SED projects. This amounts to 5% of post-tax profit – compared to the international benchmark of 1%. Spending alone is not a measure of success, however. Because of this, we place particular focus on project impact to ensure we maximise community benefits.

Figure 5.11: Group SED spending by type

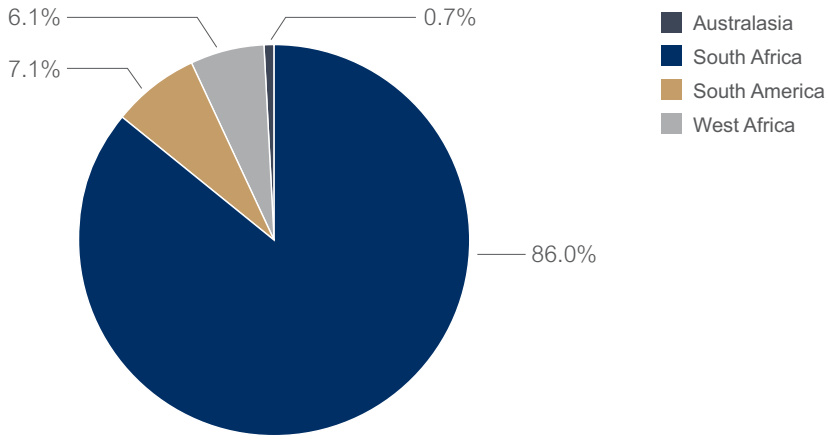
	Value (US$)
Enterprise development	671,741
Infrastructure development	10,200,463
Education	1,132,043
Training	35,442,703
Conservation and the environment	871,829
Arts and culture	199,910
Health	489,772
Sport	397,457
Charitable giving and gifts-in-kind	934,914
SLP - Local Economic Development (South Africa only)	3,306,662
Total	**53,647,492**

Figure 5.12: SED plus development-related economic contributions by type (US$ million)

	2011	2010	2009	2008
Salaries	1,101	1,027	784	708
Payments to governments	478	312	249	159
Socio-economic development (SED) spend	54	67	11	14
Total	**1,633**	**1,406**	**1,044**	**881**

Local houses near the Far Southeast project in Mankayan, Philippines

Figure 5.13: Group SED spend by region



Australasia

The strength of the Australian socio-economic context – as well as the remote nature of our operations – means that our SED programmes are of a more 'philanthropic' nature than elsewhere. In 2011, we spent a total of A$0.4 million (US$0.4 million) on SED projects via the Gold Fields Australia Foundation.

Examples include:

- Sponsorship of eight indigenous students at the University of Western Australia
- Sponsorship of students from the Kambaldi Western District High School to attend an employment exposition in Perth

How is SED spending defined?

SED is defined as spend relating to projects that are:

- Influential in benefiting employees and contractors beyond the core business
- Influential in uplifting the communities and societies in our host countries
- Guided by a strong development approach
- Linked to infrastructure investment that benefits communities during operation and closure phases

Case study

Living Gold rose project: Learning from past challenges

Find out more online

At our Far Southeast project in the Philippines, we have an extensive SED programme in place to support its smooth advancement towards a development decision and beyond.

Early SED investment of this nature helps strengthen community support at a critical and sensitive time, whilst also establishing a positive reputation amongst communities we may be working amongst for many years.

South Africa

Our SED programmes in South Africa are primarily implemented through the statutory Social and Labour Plan (SLP) framework. Under this framework, we implement Local Economic Development (LED) initiatives at each of our mines in South Africa – and in our major labour sending areas.

Each LED programme is aligned with local municipalities' integrated development plans – and is directly informed by relevant and material issues identified during community engagement. During 2011, we spent a total of R18 million (US$2.5 million) on LED projects.

Notable near-mine LED projects supported by Gold Fields include, amongst others:

- KDC: The provision of R7 million (US$970,000) to help finance the construction of the Simunye Clinic, in a partnership with the Westonaria municipality and the Gauteng Department of Health and Social Development
- Beatrix: Construction of 14 classrooms, ablution facilities and a media centre at Reseamohetse Public School at a cost of R4.4 million (US$610,000). The school was handed over to the Free State Department of Education in April 2011

In addition to these projects, we have targeted LED programmes to assist workers who are exiting Gold Fields.

Church construction at Beatrix, South Africa

This includes, for example, the Paragon 'Stitchwise' initiative, which employs injured ex-employees in the production of safety apparel. Furthermore, exiting employees are offered portable skills training (p128), as well as Adult Basic Education and Training (p130), to help them establish alternative livelihoods.

What is a Social and Labour Plan (SLP)?

South Africa's Mineral and Petroleum Resources Development Act 2002 requires mines to submit an SLP before they are granted mining rights. Each SLP, which is agreed with the Department of Mineral Resources, commits companies to spending a defined budget on Local Economic Development or Skills Development initiatives. SLPs are intended to:

- Promote employment and socio-economic welfare
- Assist in the transformation of the mining industry
- Contribute to development of their areas of operation – as well as in their labour-sending areas

SLP spending in labour-sending areas

The above efforts are supported by our LED programmes in our labour-sending areas, on which we spent R6 million (US$831,000) in 2011. This includes the provinces of Eastern Cape and KwaZulu-Natal, which are home to approximately 32% of our workforce in South Africa.

These programmes, which are coordinated via TEBA Development, include:

- Our R2 million (US$277,000) agricultural programmes (one in Eastern Cape and one in Kwa-Zulu Natal) which provide agricultural support, strengthen access to markets, help build local capacity and improve household nutrition. The programmes have around 1,800 beneficiaries – including 45 medically-discharged ex-Gold Fields employees
- Our R3 million (US$416,000) livestock programmes (two in Eastern Cape and one in Kwa-Zulu Natal), which provide access to animal husbandry services and products, promotes good practices and increase individual earnings. The programmes have around 8,000 beneficiaries

In addition, we are exploring the potential benefits of addressing development in the labour-sending areas on a collaborative basis.

In 2011, for example, a memorandum of understanding was signed between Letsema Circle, Gold Fields and AngloGold Ashanti to develop a collaborative concept for enterprise development in the Eastern Cape labour-sending area. This will be further examined during 2012.

Case study

Developing a sustainable economic model for the Eastern Cape

Find out more online

Non-SLP spending

Our broader SED spending (i.e. beyond SLP spending) is substantial – amounting to a total of R315 million (US$43.6 million) in 2011. This includes projects that benefit employees, their family members and local communities.

Ongoing examples that continued in 2011 include:

- Our five-year, R786 million (US$109 million) housing and hostel upgrade programme, of which R476 million (US$ 66 million) has been spent up until December 2011
- Training in South Africa through the Gold Fields Business and Leadership Academy, on-mine training and bursaries
- A three-year, R26 million (US$3.6 million) sponsorship programme of the University of the Witwatersrand and the University of Johannesburg
- Continued financial support for South East Education Trust projects

www.teba.co.za
www.wits.ac.za
www.uj.ac.za

South America

SED programmes play a particularly important role in Peru due to considerable political interest in the socio-economic and environmental costs and benefits of mining. Our Cerro Corona mine sits in an area characterised by challenging socio-economic conditions. Furthermore, its remote and mountainous location means local communities are particularly reliant upon us for development and basic infrastructure.

In 2011, we spent a total of US$3.8 million on SED projects at Cerro Corona as part of an 'integrated' development approach based on the long-term enhancement of local communities' economic, social and environmental capital.

Examples of some of the key projects implemented in 2011 include:

- Milk Production Chain Programme: This 'asset-based' project focuses on improving pasture, increasing the cattle population, improving genetics and strengthening milk production. As a result of the programme, community members have purchased 600 cows and bulls, artificial insemination has produced 350 calves and milk production has risen from 6 to 9 liters per cow per day
- Education programmes: These include general investment in school infrastructure, capacity building for teachers, as well as the provision of school transport and teaching supplies. In 2011, we built on progress already achieved in this respect, by focusing on high-quality teaching of mathematics and literacy
- Reforestation: Our local reforestation programme helps address a range of environmental concerns, but also provides sustainable wood-fuel, edible fungi and feed-stock for paper production. The programme has benefited around 400 families and has increased forestation by ten-fold

We also implement extensive SED programmes at our Chucapaca project in Peru under formal, five-year agreements with the Corire, Santiago de Oyo Oyo and Chucapaca communities. We are placing particular focus on ensuring our SED projects – and engagement activities – help address activism within the Oyo Oyo community (p113-114).

Case study

Cerro Corona: Promoting 'holistic' local development

Find out more online

West Africa

The relatively weak socio-economic status of our operating environment in Ghana means we are in a position to make a significant and lasting impact on the lives of local communities. In 2011, we spent a total of US$3.3 million on SED projects at Damang and Tarkwa. These are funded through the Gold Fields Ghana Foundation, to which we contribute US$1 per ounce of gold produced in Ghana – as well as 0.5% of our pre-tax profits.

This spending was directed at projects focused on health, water and sanitation, education and agriculture. The remainder was spent on assorted projects, including road rehabilitation, local apprenticeships, support for local sports and infrastructure support.

Examples of key projects implemented in 2011 include:

- Funding of the Small Town Water Supply (STWS) programme, focused on the construction of deep boreholes and overhead tanks in local communities. In 2011, we completed six STWS projects in the communities of New Atuabo, Samahu, Brahabobom, Abekoase and Huniso
- A wide-reaching community education programme, including the provision of 32 new, four-year community scholarships and 110 new bursaries for communities near Tarkwa, as well as a further 80 bursaries and scholarships for communities near Damang. We are also continuing our support of the Nana Amoakwa model school, which is based in Damang
- Extensive agricultural programmes, including support for the cultivation of local oil palm, cassava, vegetables and livestock amongst local farmers. During 2011, a total of 708 people benefited from the programmes, which are partly carried out in collaboration with the Ministry of Food and Agriculture

5.3.3 Local employment and capacity building

Our local communities in Ghana, Peru and South Africa have one key challenge in common: Unemployment. As a result, we place strong emphasis on the employment of local people – where it is operationally and commercially viable. Unfortunately, local labour pools are not always able to offer the specialised skills necessary for the effective operation of our increasingly sophisticated mines. Because of this, we enhance the local skills pool through mining-related education and training – both for the benefit of participants, as well as Gold Fields itself.

This is still unlikely to fully satisfy local demand for employment, however. In light of this, we also carry out a range of activities to promote alternative income generating opportunities through our SED initiatives, as well as preferential procurement (p146-148).

Local employment

The employment and development of local people strengthens our own skills pipeline by ensuring we have ready access to necessary skills and competencies. This is an increasingly important issue in a context of intense global competition for experienced mining specialists – which makes the employment of expatriate employees increasingly expensive. Furthermore, it underpins our own commitment to ensuring our workforce reflects the demographics of the societies in which we operate.

In Australia, we are running a small pilot programme at St Ives for the targeted recruitment of indigenous people. The experience of some of our peers has demonstrated the importance of careful preparation of candidates for entry into the workplace, as well as the cultural sensitisation of our existing employees. If successful, we hope to roll out this programme on a larger scale.

In Ghana, both mines run a formalised programme for local recruitment. Under the programme, all new vacancies are checked against a skills and qualifications database of local people. Viable candidates are then interviewed on a fair and transparent basis by the mine's Employment Committee, which is chaired by a local chief nominated by his peers. In addition, the mine runs a programme to fill unskilled positions from local communities. In 2011, 199 local people were employed in this way. All of our contractors in Ghana are required to source unskilled labour through our Community Affairs department.

In Peru, our Cerro Corona mine employs – directly and through contractors – 529 people from neighbouring communities (or 31% of the mine's workforce). This compares to an original commitment to employ 150 people from local communities. It is estimated that approximately 20% of the local economically active population are either mine employees or contractors. Many local people have been deliberately trained to fill skilled roles. As of August 2011, Cerro Corona had 65 plant operators, all of them from local communities, whilst 80% of those working in the processing plant were local.

Local capacity building

Local capacity building is essential for the promotion of broader socio-economic development – and to improve our ability to employ local people in the future.

In Ghana, we sponsor local people through the Tarkwa Technical Institute to work as engineers and geologists. In 2011, 23 local people completed this process. In late 2011, this programme was supplemented by our new Community Learning and Development Framework, which saw 10 community members become qualified in the operation of dump trucks – and a further eight sponsored to undergo training in welding, auto-mechanics, dress-making and other skills.

At Tarkwa, we also provide US$1,000 individual bursaries to 60 of our employees' children to help them pursue training and education that will benefit our operations.

In Peru, our Cerro Corona mine carries out in-house operator and electromechanical training for 60 local community members each year. This not only helps fulfil our own needs, but helps participants gain employment in the growing Peruvian mining sector.

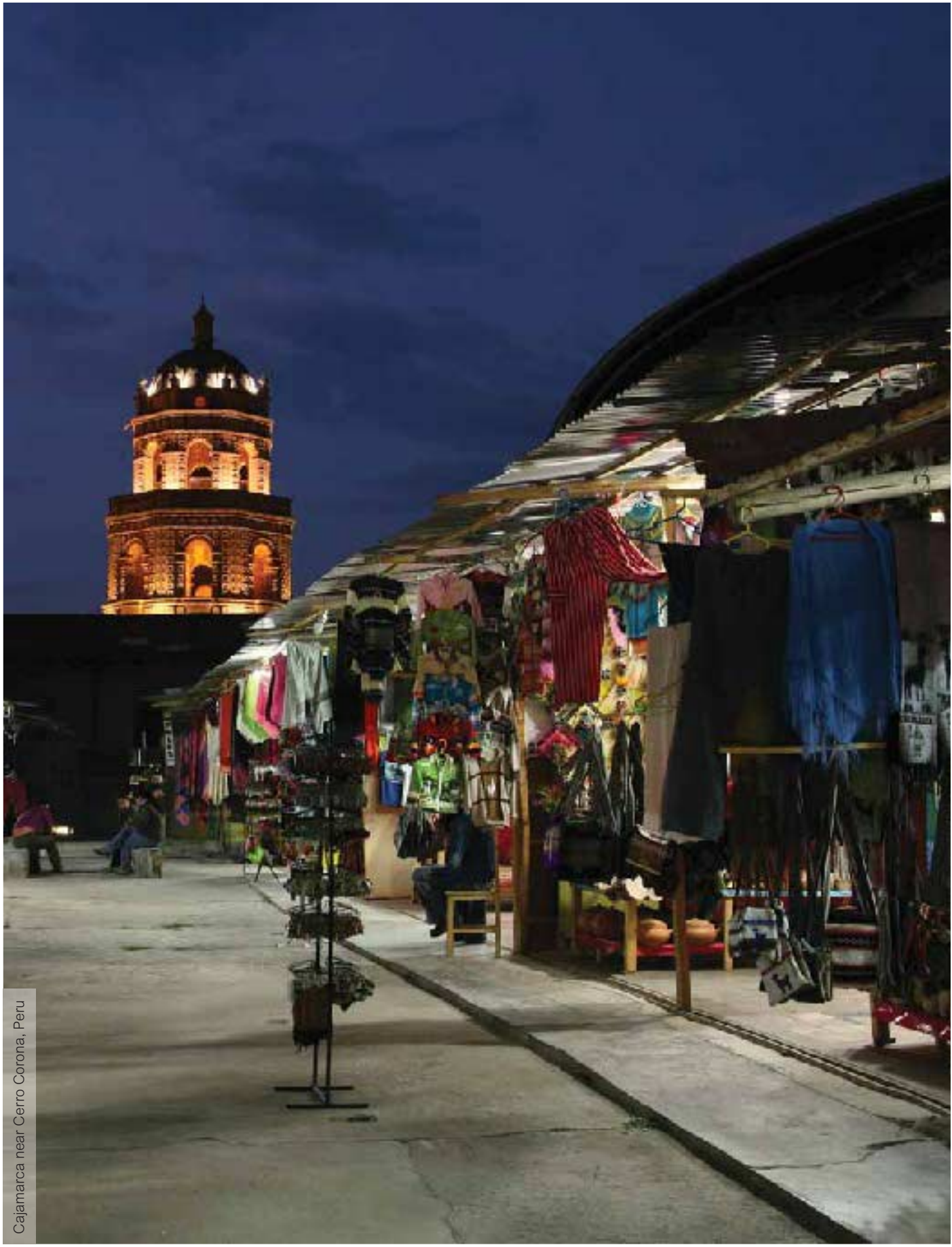
In South Africa, we provide 96 bursaries to universities and technical colleges (2010: 106), 605 technical learnerships (2010: 456) and 76 (2010: 74) postgraduate sponsorships. This is helping to establish a solid pipeline of highly qualified HDSAs who will help drive transformation both at Gold Fields – and in the South African mining industry more broadly. We are also sponsoring the mining faculties of the University of the Witwatersrand and the University of Johannesburg under a three-year, R26 million (US$4 million) agreement.

www.wits.ac.za
www.uj.ac.za

5.3.4 Local procurement

Where possible, it is our policy to use local suppliers. In part, this is to strengthen our own supply chains in often remote locations that otherwise rely on lengthy and expensive logistical routes. It also helps us integrate into the local economy and enhances our social licence to operate. As with local employment, local supply pools are not always of sufficient depth or breadth to support our operations. Because of this, we actively assist current and potential suppliers to improve their business and management processes.

In Ghana, we play a leading role in the Chamber of Mines (and in partnership with the Mineral Commission of Ghana) to drive import substitution and promotion of local value-adding activities.



Cajamarca near Cerro Corona, Peru

We also work closely with government as they develop their own local procurement policies. In 2011, a total of 47.2% of our procurement budget was spent with Ghanaian suppliers. Examples of notable local procurement relationships in Ghana include:

- Completion of the US$28 million TSF3 tailings dam at Tarkwa by Ghanaian company Engineers & Planners (p66)
- Our sourcing of steel milling balls from Ghanaian company Tema Steel, which we have actively helped in their efforts to meet international mining sector standards

In Peru, companies are legally required to prioritise local suppliers – if they meet relevant standards. We currently spend 15% of our regional procurement budget on suppliers in the vicinity of Cerro Corona. Contracts cover, for example, heavy equipment, light transport and general services – from companies we have actively supported (for example through coaching, training and supervision) since the construction phase of the mine.

We continue to meet with local suppliers every two months and offer ongoing training to help them attain our stringent procurement standards – including compliance with ISO 14001- and OHSAS 18001-equivalent standards. Such efforts have helped establish a commercially sustainable supply pool in the region, which services the mining sector beyond our own operations. This includes around 65 of the original companies that we commercially supported during the construction phase (or 60% or the original local company pool).

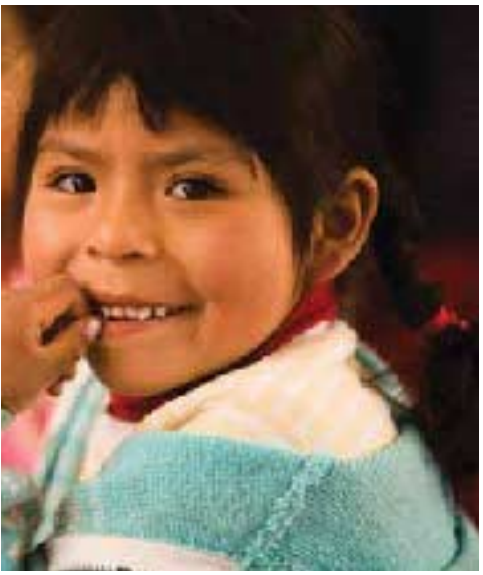
In South Africa, we are committed to sourcing from Broad Based Black Economic Empowerment (BBBEE) companies, where possible – both as part of our SLPs and our own commitment to transformation. In 2011, we spent R3.5 billion (US$479 million) with such suppliers – or 46% of our regional procurement budget.

5.3.5 Respecting the rights of local and indigenous people

Where relevant, we engage with local people through traditional decision-making structures and processes. We do so at the earliest stages of our activities and ensure that we provide accessible and accurate information to inform these discussions.

This is a particularly important issue in Australia, which has extensive legislation in place governing cultural heritage, native title and other relevant issues. This includes, for example, the Commonwealth Native Title Act and the Aboriginal Heritage Act 1972.

During 2011, both of our mines engaged indigenous groups when carrying out near-mine exploration drilling or establishing new infrastructure. Our engagement is based on an innovative risk-based ethnographical and archaeological programme to identify relevant heritage sites. Any culturally sensitive sites need to be registered with the Department of Indigenous Affairs and cannot be drilled without ministerial permission.



Far left: Gold Fields management and traditional representatives opening a community clinic near Damang
Middle: School children near Chucapaca, Peru
Right: Traditional representative near Damang, Ghana

At Agnew, we implemented a best-practice stakeholder engagement structure focused on Native Title to address environmental, heritage and cultural issues in the area. The system is based on the AA 1000 stakeholder engagement system.

At St Ives, we instituted a formal, best practice framework for the monitoring of our ground clearance activities by paid observers from relevant indigenous groups. No additional heritage sites were identified at St Ives during 2011. Our St Ives mine also re-engaged with the Kalamaia-Kapu(d)n group. Whilst the Kalamaia-Kapu(d)n have not registered a Native Title Claim, St Ives engages with the group in recognition of their historical links to the area.

In Canada, our exploration team works closely with relevant First Nation communities when operating in their traditional territories. We also conduct archaeological surveys before disturbing the land to make sure we respect sites of cultural significance.

Furthermore, we often employ First Nation members as environmental monitors – to provide assurance with respect to our exploration impacts.

In the Philippines, we are directly engaging local Mankayan indigenous communities to secure their Free Prior and Informed Consent (FPIC) for our exploration activities around our Far Southeast project (p106-107). Under the local legal framework, the granting of FPIC is vital for the project to proceed.

Additional content online

Respecting the rights of local and indigenous people, resettlement and land impacts

www.goldfields.co.za

5.3.6 Addressing artisanal mining

We differentiate between three types of artisanal gold mining:

- Responsible and legal artisanal mining
- Irresponsible, yet legal artisanal mining
- Illegal artisanal mining

Responsible and legal artisanal mining has the potential to create sustainable and broad-based wealth – and to generate worthwhile employment opportunities.

Additional content online

For a related article from the Alliance for Responsible Mining (ARM) on ASM and large-scale mining see:

www.goldfields.co.za

www.communitymining.org

We remain committed to playing a constructive role in improving the working conditions, environmental performance and socio-economic conditions of those engaged in artisanal gold mining. We are in the process of investigating how we can work in partnership with relevant industry groups and NGOs to leverage our expertise, assets and influence to assist in this process.

5.3.7 Addressing illegal mining

A significant amount of irresponsible and illegal artisanal mining takes place in a way that has the potential to negatively impact on local environments and communities – as well as on our operations and the broader reputation of the industry. These include, for example:

- Poor health and safety standards
- Inadequate and exploitative working conditions
- Pollution as a result of the improper use of mercury and cyanide
- Land degradation as a result of poor operational management
- Incidents of child labour

Illegal mining is an ongoing challenge for our operations in Ghana and South Africa – partly

driven by high gold prices. Although our targeted SED and community engagement programmes help mitigate some of the conditions that lead to illegal mining, we also implement a range of security programmes. These are based on a 'firm but fair', non-antagonistic and prosecution-based approach.

Ghana

In Ghana, illegal mining is characterised by the encroachment of artisanal miners onto our licence areas. Damang is at particular risk of such activity due to its 'open' geographical location and the relatively high grade of certain ore deposits.

In June 2011, we had around 50 illegal miners working our historical underground Aboso shafts, which are otherwise disused. We secured their effective removal by arranging for all utilities to be cut-off, making it impossible for them to continue to mine.

In July 2011, a significant group of illegal miners occupied the old Tomento, Amoanda and Lima South pits. The number increased over time, with numbers fluctuating between 200 and 2,500. Our security personnel have adopted a non-aggressive stance as we work to find a constructive and lasting solution. After a contingent of illegal miners invaded the processing plant at the mine in December 2011, all illegal miners were removed from the Damang lease areas by the public authorities without incident (p153).

Where we wish to remove illegal miners, we take careful measures to avoid conflict and to give time for people to make alternative arrangements. Enforced removal is only ever used as a last resort. District assembly representatives are invited to observe such removals, which are coordinated with the public security services.

As with other forms of irresponsible artisanal mining, these encroachments can have significant environmental impacts (including land degradation and the misuse of cyanide) and safety impacts (including risks posed to both the illegal artisanal miners and to our own employees by ground instability). In addition, they are believed to be backed by organised foreign syndicates who provide financing and illicit marketing routes. This has implications in terms of potential for broader criminality, as well as the exploitation of the illegal miners themselves.

South Africa

In South Africa, illegal miners tend to work in disused, unworked shafts to exploit remaining deposits – sometimes spending extended periods underground.

In 2011, indications suggested a reduction in underground illegal mining. This appears to be linked to an increase in 'sightings' by employees – linked to our extensive awareness-raising activities and the offer of rewards – as well as enhanced entry and exit controls and active underground patrols.

Once apprehended, illegal miners are removed from our operation in a non-confrontational way and transferred to local police officers, after their details have been recorded.

Although most of these illegal miners have previous mining experience, the conditions in which they work – as well as a lack of proper equipment – makes their work not only illegal, but highly dangerous. It is suspected that illegal diggers are backed by organised syndicates under exploitative conditions.

Damang, Ghana

Gold Fields approach to artisanal and small-scale mining

High gold prices – as well as poverty, food insecurity and unemployment – have contributed to an increase in artisanal and small-scale mining (ASM) in developing countries. According to the World Gold Council, although ASM accounts for only around 10% of global gold production – it accounts for around 90% of the gold-sector's workforce.

What are the risks and opportunities around ASM?

Common issues associated with irresponsible ASM – much of which is carried out without relevant mining licences – include:

- Low pay and exploitative conditions
- The presence of children on digging sites
- Poor health and safety standards
- Pollution as a result of the poorly-regulated use of cyanide and mercury
- Land damage and instability as a result of unplanned digging

In many cases, irresponsible ASM activity takes place on existing licence areas. This can pose risks to the legitimate licence-holder, including:

- The loss of easy-to-reach gold deposits
- Health and safety risks (e.g. from un-rehabilitated diggings)
- Increased environmental liabilities as a result of pollution and land damage
- Low-level insecurity linked to militancy and associated criminality

Nonetheless, if carried out responsibly, with proper permitting and without compromising the rights of others, ASM can:

- Provide worthwhile and sustainable employment
- Drive development by contributing to public revenues
- Promote fair, broad-based economic growth
- Safeguard the local environment

This is why Gold Fields supports responsible ASM. During 2012, we plan to finalise our formal, strategic approach in this respect.

Why is ASM an issue for Gold Fields?

ASM activity takes place in the vicinity of our exploration and/or operations in Ghana, Kyrgyzstan, Mali, Peru, the Philippines and South Africa. This can result in negative impacts (including water pollution in particular) that are sometimes blamed on Gold Fields, undermining our social licence to operate.

In Ghana, irresponsible ASM activity takes place on our Damang licence area without our permission. The area is intersected by public roads, whilst several communities live on the licence area – making physical exclusion difficult.

At our Yanfolila exploration project in Mali, we permit local ASM miners ('orpailleurs') to continue their traditional work on pre-established sites, as long as it is carried out in a responsible way.

25m-35m

People estimated to be engaged in ASM gold activity worldwide

650%

Rise in gold price between Feb. 2001 and Sept. 2011 (a key driver behind the global rise in ASM activity)

Illegal occupation and eviction at Damang

In July 2011, a significant number of illegal ASM miners ('galamsey') occupied our old Tomento, Amoanda and Lima South pits. At points, there were as many as 2,500 ASM miners trespassing on our licence area and working the land. Despite weeks of negotiations by Gold Fields, with the assistance of traditional and formal political leaders, the galamsey refused to leave the mining licence area voluntarily.

In December 2011, a group of the galamsey invaded Damang's processing plant, directly threatening Damang's ability to continue operating – as well as the safety of our employees. This prompted the public authorities to carry out an involuntary eviction – in line with Ghanaian law.

This was carried out by a unit of the Ghanaian Defence Force – in light of concerns over the potential for violent action by elements amongst the galamsey. Before the exercise, we briefed the responsible army unit as to our human rights obligations. We also provided extensive warning of the eviction through radio broadcasts, face-to-face engagement (again with the assistance of traditional leaders and local political representatives) and the identification of a firm eviction date.

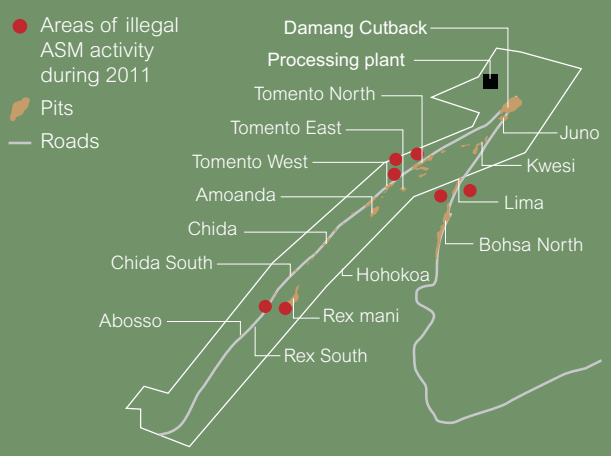
On the day of eviction, the army spent several hours in negotiation with the galamsey. The eviction only proceeded when the galamsey withdrew from negotiations and resumed mining. The galamsey dispersed as soon as the army advanced and no-one was hurt in the process.

Addressing the risk of future illegal occupations at Damang

Whilst the December 2011 eviction dealt with the immediate occupation, we are still working to find a constructive and lasting solution to the threat of illegal occupation.

This includes the implementation of a comprehensive baseline social study to establish relevant players, drivers and dynamics amongst local galamsey and local communities.

Once completed, the baseline social study will be used to develop a medium- and long-term strategy to help address both the 'push' and 'pull' factors that result in illegal occupations of this nature.



'Orpailleur' washing ore in Mali (photograph: Gwendolyn Wellmann)

5.4 Forging strong relations through business ethics

Our Values commit us to act with fairness, integrity, honesty and transparency – both in our own actions and in our promotion of ethical practice in our external environment. We aim to maintain the complete confidence of our stakeholders – including our shareholders, business partners and host governments – by adopting an approach that goes beyond legal compliance.

5.4.1 Complying with the law

We will not engage in any activities, including bribery and corruption, that undermine the legitimate business environment in any form.

All of our directors and employees are bound to uphold the company's core values of honesty, transparency and integrity, which underpin our Code of Ethics (p25).

The Code was updated in 2011 in line with relevant domestic and international legal requirements with assistance from third-party legal experts. It is binding on every employee, officer and director of any entity that is owned or controlled by Gold Fields. The updated Code articulates Gold Fields policy with respect to an array of issues ranging from facilitation payments through to political contributions.

The Code of Ethics is supported by an implementation framework, with defined responsibilities and reporting processes. Any breach of the new Code will result in disciplinary action, which may lead to dismissal. Should the breach be criminal, we will pursue prosecution of the employee concerned.

www.goldfields.co.za

Additional content online

www.goldfields.co.za

Accommodation at KDC, South Africa

5.4.2 Maintaining strong government relations

Gold Fields relations with its host governments are amongst its most important. In most cases, we engage host governments through the national Chambers of Mines, due to the efficiencies and legitimate influence offered by collective sectoral action. Where necessary and appropriate, we also engage governments on a bilateral basis.

As a general rule, Gold Fields does not make financial contributions to any political parties. In 2011, no such contributions were made.

Gold Fields does not receive financial assistance from any of its host governments.

Black Economic Empowerment

Engagement with government is particularly important in South Africa due to the ongoing Black Economic Empowerment (BEE) agenda. This is implemented through the Mineral and Petroleum Resources Development Act of 2002, as well as the associated 2010 revised Mining Charter.

During 2011, we carried out a full gap analysis of our performance against the amended Mining Charter. This found that we were largely compliant with the first year requirements of the amended Charter. We are placing particular emphasis on meeting all outstanding targets during the next two years.

Gold Fields is an active participant – through the South African Chamber of Mines – in the Mining Industry Growth, Development and Employment Task Team (MIGDETT). The MIGDETT is a vehicle used by the Department of Mineral Resources (DMR), companies and the trade unions to promote sustainable growth and meaningful transformation of the mining sector.

Case study

Gold Fields makes good progress against new Mining Charter targets in South Africa

During 2010, the South African Department of Mineral Resources (DMR) unveiled the revised Mining Charter 2010. The revised Mining Charter updates and expands upon a set of empowerment targets (originally set in the Mining Charter 2002), that mining companies in South Africa are required to comply with by March 2015. Details of Gold Fields progress against key targets are set out below:

- Minimum 26% HDSA ownership by 2014: In 2009, Mvelaphanda Gold (MvelaGold) subscribed for 15% of Gold Fields South African assets (GFIMSA) representing an effective 15% HDSA ownership interest. During 2010, Gold Fields implemented three further Black Economic Empowerment (BEE) transactions. Taken together, these transactions enabled Gold Fields to achieve its 2014 Mining Charter HDSA ownership target
- Procurement of a minimum 40% of capital goods, 50% of consumer goods and 70% of services from BEE entities by 2014: By 2011, Gold Fields had achieved an overall HDSA procurement rate of 46% across all categories. HDSA procurement is broken down as follows: 47% of capital goods; 46% of consumer goods; and 46% of services
- Minimum 40% HDSA representation amongst management and technical skills: In 2011, Gold Fields had achieved 43% HDSA representation amongst junior management, 41% amongst middle management and 30% amongst senior management at its South African operations. At Group Board level the representation is 36%
- Invest 3% of annual payroll in skills training: Apart from the South Deep mine, which is still undergoing construction and development, all operations are on-track to achieve this target
- Investment in community development: As part of their Social and Labour Plans, Gold Fields operations are involved in a number of community development projects focused on infrastructure development, job creation and poverty alleviation – with particular support for enterprise development (p144). The projects that qualify under these plans are listed on our website (www.goldfields.co.za)
- Attain an occupancy rate of one person per room (in on-site accommodation): Gold Fields has completed more than 90% of planned hostel upgrades at Beatrix, KDC East and KDC West, and has made significant progress in terms of the establishment of family accommodation. During 2011, Gold Fields built 100 family units and upgraded 541 hostel units. At the end of 2011, the occupancy rate at hostels at Beatrix, KDC East and KDC West averaged 1.45 per room. South Deep's licence was only approved in 2010 and was followed by an engagement process with organised labour. As a result, the hostel upgrade programme at the mine will only be initiated in 2012

Royalties and revenues

Australia

Gold Fields is not currently affected by the Mineral Resource Rent Tax, which is expected to be passed by the Senate in early 2012. Although the tax will only apply to large-scale iron and coal mining companies, it is an important political milestone in the current government's efforts to increase the fiscal burden on the Australian mining sector. As a result, we will monitor developments to identify any efforts to expand the imposition of further taxes on our operations.

Likewise, in November 2011, Australia's Senate passed the Clean Energy Act, which introduces a national cap and trade carbon scheme based on a carbon price of A$23 a tonne. Although we do not directly fall under the cap and trade scheme, the legislation will adjust fuel tax credits and excise duties to apply an equivalent carbon price to our diesel. This will directly impact our operational costs as of July 2012. The Clean Energy Act again marks an important political milestone that increases the likelihood of higher carbon costs in future. We will continue to monitor the situation accordingly.

Ghana

The size of our production in Ghana means we are a major contributor to national revenues. In 2011, we paid a total of US$247 million (2010: US$160 million) in corporate taxes, royalties, dividends, income taxes and contributions to the National Stabilisation Levy, making us one of the largest contributors to government revenues in the country.

The fiscal regime for the Ghanaian mining sector has continued to harden. As anticipated, in March 2011 mining royalty rates rose from 3% to 5% and the temporary National Stabilisation Levy of 5% of pre-tax profits (introduced in 2009) continued to apply.

In early 2012, the Government of Ghana introduced a set of additional fiscal burdens on the mining sector. These comprise a rise in the Corporate Income Tax from 25% to 35%, introduction of a 10% Windfall Profit Tax and a capital allowance of 20% for five years (previously 80% in the first year).

Although the government also announced the lifting of the National Stabilisation Levy, these taxes represent a serious new imposition on the sector. This is of particular concern given the existing costs pressures faced by mining companies in Ghana – including rising energy, commodity and labour costs. We are assessing the implications of the tax changes with respect to the viability of expansion projects in the country.

Peru

In Peru, President Ollanta Humala's new government fulfilled a campaign promise to raise taxes and royalties on the mining sector to help fund national infrastructure and address rural poverty. In September 2011, following constructive negotiations with the mining sector, the government raised royalties to between 1% and 12% of operating profits (previously 1% to 3% of sales) – and introduced a windfall profits tax of 2% to 8.4% on net profits. These measures are expected to raise an additional US$1.1 billion from the mining sector.

In 2011, a 'Voluntary Mining Contribution' (VMC) by the mining sector was replaced by the new mining tax. Gold Fields is using remaining VMC funds to support its malnutrition programme, amongst others.

Although we are supportive of the aims of the government in addressing poverty and improving national infrastructure, we are concerned that any further increases, beyond what has been agreed, could impact on Peru's status as an attractive destination for mining investment.

South Africa

In its 2012 Budget proposals, released on 22 February 2012, the South African government confirmed the change in dividend taxation from the 10% Secondary Tax on Companies (STC) to a 15% withholding tax on dividends paid to shareholders. This will take effect on 1 April 2012. As a result, the effective gold mining tax rate, as determined by the gold mining tax formula, will be reduced with effect from 1 January 2012 for gold mining companies whose mines had previously elected not to pay the STC.

All our South African mines had elected to be exempt from the STC, and their effective gold mining formula tax rates will decrease from 1 January 2011. However, Gold Fields itself, as a holding company not conducting any gold mining operations, was not exempt from the STC. To the extent Gold Fields received dividends from its South African mines, these dividends were offset against the amount of dividends paid by Gold Fields for the purposes of calculating the net amount subject to the STC.

The repeal of the STC from 1 April 2012 onwards and the introduction of the dividend withholding tax will lead to a lower net effective tax rate paid by Gold Fields at its South African operations (a more detailed analysis is included in the Financial Review).

5.4.3 Managing an ethical and effective supply chain

Our integrated management approach extends to our supply chains. As a result, we not only ensure we have a reliable and economically advantageous supply chain in place – but that our suppliers operate in a responsible and sustainable way that supports local economic development.

By requiring our suppliers to accept and adopt our social, environmental and ethical standards – in addition to our operational and commercial requirements – we are able to promote good business practice in our supply chain.

This includes the requirement for all contractors to meet our health, safety and environmental management standards, including the OHSAS 18001 and ISO 14001 standards.

The adherence of suppliers to our standards is monitored through:

- Pre-screening
- Regular compliance audits (by our own specialists or third-party experts)
- Regular reporting on a defined set of compliance requirements (for example, in the case of strategic and/or critical projects)

Where incidents of non-compliance are identified, we will develop joint corrective action plans, unless non-compliance is of a sufficiently serious nature to justify termination.

In South Africa, we have a large number of suppliers (approximately 5,000). As a result, we take a risk-based approach by auditing those who represent the top 80% (by value) of our procurement spend. These selected vendors must submit a self-assessment check list with any tender and are then subject to subsequent auditing for issues ranging from their Broad Based Black Economic Empowerment (BBBEE) status to child labour.

In 2011, we enhanced our ability to screen and assess the risks relating to suppliers through the introduction of an online Sustainable Sourcing Dashboard. This combines objective sector- and country-risk data (including human rights data), context-specific data (such as South Africa's BBBEE requirements) and our own standards (including our supplier terms and Code of Ethics). These are used to produce supplier 'scorecards' – and to map a wide range of risks through our value chain. In future, we intend to further enhance the system through the integration of supplier-self assessment data and audit data.

Additional content online

www.goldfields.co.za

Case study

Piloting the WGC Conflict-Free Gold Standard

In June 2011, the World Gold Council (WGC) unveiled two new draft standards to address 'conflict gold' (i.e. gold that "enables, fuels or finances conflict"):

- The Chain of Custody Standard (to identify the origin of gold)
- The Conflict-Free Gold Standard (to ensure the exclusion of conflict gold from global supply chains)

These complementary standards provide assurance from extraction through to refining, and will enable gold mining companies to certify their gold as 'conflict free' on a global basis. They will also support gold mining companies in their efforts to meet mineral traceability and due diligence requirements. This includes those set out in the OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas, as well as Section 1502 of the US Dodd–Frank Wall Street Reform and Consumer Protection Act. In addition, the standards will help guide companies as to how to monitor and minimise gold 'leakage' from the global value chain.

All Gold Fields production originates from its own mining operations – meaning there is only minimal risk of externally-derived conflict gold entering its value chain. Nonetheless, Gold Fields is playing a leading role in piloting and 'stress testing' the standards. In particular, Gold Fields is voluntarily adopting the standards as best practice across all of its gold mines, regardless of their relative risk exposure to conflict gold.

Gold Fields supports the development of the draft standards, which are expected to be finalised in mid-2012. Nonetheless, we took a number of actions to support implementation of the standards during 2011:

- The mapping of the 'journey' of gold through the Gold Fields value chain in South Africa. This included the identification of measuring points and a review of relevant documentation to help establish certification audit controls – from the shaft through to the exit of gold doré from the processing plant. This was completed for all South Africa operations in November 2011, with the assistance of third-party auditors. A full 'walk-through' of this process was then undertaken at KDC East – with participation from the WGC – to identify strengths and weaknesses associated with the practical application of the standards at a fully operational mine
- The first pilot application of the standards at the Tarkwa and Damang mines in Ghana in December 2011. This included a more comprehensive walk-through of the process, which built on Gold Fields efforts at KDC. This focused on testing the associated assurance framework and related communications materials. The walk-through highlighted the robustness and transparency of Gold Fields existing assurance processes and controls
- Continued collaboration with the Rand Refinery (34.9% owned by Gold Fields), which refines approximately 75% of all African gold, including all gold from Gold Fields South African and West African operations. Through this relationship, Gold Fields hopes to contribute to the success of the standards throughout the entire gold value-chain

www.gold.org
www.oecd.org
www.sec.gov
www.randrefinery.com

5.4.4 Securing people and assets whilst respecting human rights

Gold Fields Protection Services (GFPS) is responsible for the effective and responsible protection of our people and assets. All GFPS personnel receive human rights training during induction. This training is based on local legal requirements, the terms of the Mining Charter and human rights best practice. GFPS is a signatory of the International Code of Conduct for Private Security Providers, which commits all signatories to respect human rights and humanitarian law in their operations.

The primary duties of the GFPS are to:

- Address illegal internal activity, including gold theft, fraud and other illicit activities carried out by employees
- Address illegal external activity, including illegal gold mining (p149-153), cable theft and other illicit activities carried out by third parties
- Ensure the safety and security of our bullion despatches and cash escorts (including armed escorts in South Africa)

How does GFPS address illegal activity within Gold Fields?

Relevant techniques and technologies include:

- Pre-employment screening
- Metal detection systems
- Role-specific area access cards
- Biometric access systems
- Security data systems to improve control of access and movement (such as 'SecureBase' at Tarkwa
- Centralised CCTV monitoring
- Use of an anonymous, independently managed whistleblowing hotline

Our security personnel also help to enforce good safety practices on our sites by observing, recording and rectifying examples of poor practice – and participate in emergency response activities where needed.

Where relevant, GFPS personnel are supported by private security contractors. This includes, for example, the presence of G4S security personnel at our mines in Ghana. G4S is a signatory to the UN Global Compact, as well as the International Code of Conduct for Private Security Providers.

In addition to our standard security controls, in 2011 we piloted the application of Xscann Body Scanner technology in South Africa. This low-dose X-ray technology produces images of sufficient resolution to detect even very small amounts of gold on a person – making it a key deterrent to those tempted to illegally smuggle gold out of our shafts. The fact that Xscann uses only very low X-ray doses means it can be applied repeatedly at no risk to human health. We plan to roll out this programme more fully, depending on the outcome of its pilot application.

Additional content online

www.goldfields.co.za

www.icoc-psp.org
www.g4s.com.gh/en-gh

Tarkwa, Ghana

View from the Far Southeast project site, Philippines

6.1 Internal Audit Statement

Gold Fields Internal Audit (GFIA) is an independent assurance provider to the Gold Fields Audit Committee on the effectiveness of the risk management, control and governance processes within Gold Fields. The risk-based annual audit plan covers the breadth and depth of the Gold Fields value chain and, together with the Internal Audit mandate, is approved by the Audit Committee annually.

The internal audit activities are conducted either by a team of appropriate, qualified and experienced employees, or through the engagement of external practitioners on specialised and agreed terms. The Internal Audit team is based centrally, in South Africa, but services all the Gold Fields operations globally. The GFIA Senior Manager provides quarterly feedback to the Audit Committee and has a functional reporting line to the Audit Committee Chair.

GFIA follows a risk-based audit methodology, which is in compliance with the Institute of Internal Auditors' (IIA) "International Standards for the Professional Practice of Internal Auditing". Furthermore, GFIA operates a quality assurance programme that involves performing detailed quality review assessments at an activity and functional level. GFIA's quality assurance programme has been assessed as "generally compliant" with the IIA standards, the highest rating of the degree of conformity.

Based on the work performed by GFIA during the year, the Senior Manager has presented the Audit Committee with an assessment on the effectiveness of the company's system of internal control and risk management, internal financial controls as well as the IT control framework. It is GFIA's opinion that the internal control environment and risk management processes are adequate within the Gold Fields business and provide reasonable, though not absolute, assurance that the objectives of Gold Fields will be met.

This GFIA written assessment forms one of the bases for the Audit Committee's recommendation in this regard to the Board.

Shyam Jagwanth

Senior Manager:
Gold Fields Internal Audit

Johannesburg, South Africa
23 March 2012

maplecroft™

6.2 Second party assurance on reporting

Background

This is the second year of collaboration between Gold Fields and Maplecroft. Our work focuses on the joint development of the Integrated Annual Review 2011 and the development of a leading Sustainable Development strategy. Maplecroft recognises that it is not an independent party.

Methodology

Maplecroft worked closely with Gold Fields to collect, analyse and review information and data across all areas covered in the Integrated Annual Review 2011. This included:

- Field work and site visits in Australia, Ghana, Peru, the Philippines and South Africa – including to mine sites, regional headquarters and the group head quarters
- Interviews with senior managers, discipline experts and other relevant Gold Fields employees across the operational, sustainability and financial disciplines and in all regions

The validity of original data was not checked at source by Maplecroft although we did follow up and check to ensure consistency and to understand trends and reasons for improvements or changes. We completed a rigorous peer review of all data and documentation within Maplecroft to ensure the accurate and comprehensive representation of original data, any anomalies or gaps in data that could not be resolved by Maplecroft were referred back to relevant employees within Gold Fields for clarification and later audit by an independent third party organisation, in this case, KPMG.

We also prepared drafts of all text and worked closely with discipline experts in the refinement of report content (including clarification, review and feedback) to ensure the information presented is fair, accurate and in line with the expectations of stakeholders.

All work completed by Maplecroft is informed by best practice initiatives and standards. These include the integrated reporting guidance included in the King III Code. We are also informed by the United Nations Global Compact, the United Nations Millennium Development Goals, the Global Reporting Initiative (GRI) G3.1 Guidelines, the GRI Mining and Metals Sector Supplement, the ICMM principles and World Gold Council Responsible Gold criteria as well as the AA 1000 assurance standard.

AA 1000 principles

We believe Gold Fields has achieved broad compliance with the AA 1000 principles of materiality, completeness and responsiveness.

1. Materiality

In line with the recommendations made in the King III Code around integrated reporting, this report discloses and explains an integrated and coherent framework for the analysis of Gold Fields strategy, risks, performance and sustainability. In our view, this report directly and transparently addresses Gold Fields top 10 risks (p38-39). The Gold Fields Annual Review also discloses and examines relevant and material stakeholder issues (p40-43).

The report provides a comprehensive overview of all that Gold Fields is doing to manage these and other issues proficiently and responsibly.

2. Completeness

Our inspection of documents, as well as our engagement with and enquiry of discipline experts did not identify any material shortfalls with respect to completeness of reporting. Indeed, Gold Fields has proactively sought to identify and report on potentially challenging and sensitive dilemmas, risks and responsibilities in respect of the following relevant and material issues:

- The strategic need to stabilise production in South Africa and reduce NCE margins (p11-14, 46-49, 78-81)
- Challenges around energy pricing in Australia, Ghana and South Africa (p16-17, 68)
- Potential future challenges around Acid Mine Drainage in the Wits Water Basin (p63-65)
- Hardening, or potentially hardening, fiscal regimes in Australia, Ghana, Peru and South Africa (p16, 155-156)
- Management of illegal artisanal and small-scale mining in Ghana (p149-153)

3. Responsiveness

Gold Fields carries out a wide range of stakeholder engagement activity, both at strategic (i.e. head office) and operational (i.e. mine, project or exploration camp) levels. It is our view that these interactions have done much to inform the content and form of this report. This includes, for example, ongoing and enhanced emphasis on:

- Integrated reporting and management practices
- Risk identification, management and mitigation
- The understanding of concerns relevant and material to investors as stakeholders

6.2.1 Recommendations

Key areas for further improvement:

1. Sustainability data

There were some challenges in relation to data-gathering due to the implementation of a new and ambitious online system for the reporting of data relevant to the Global Reporting Initiative. It is recommended that feedback from the latest reporting period be used to help inform further improvements to the system in terms of continuity of definitions, accuracy of input, utility of output and methodological continuity. It is anticipated that this will further enhance the system in terms of efficiency, accuracy and standardisation of output. Nonetheless, data gathering was found to be conscientious and exact.

Beyond this, it is recommended that Gold Fields moves towards a fully integrated data reporting system that will satisfy all of its internal and external reporting needs, without duplicating input efforts on the part of discipline experts. This will deliver improvements in terms of consistency of data, efficiency and internal buy-in.

2. A more direct relationship between stakeholder engagement and reporting

It is recommended that Gold Fields seeks expert opinion from third-party stakeholders on (a) the specific issues being reported on; and (b) how well these issues are being reported on. This includes, for example independent assessment of Gold Fields cited risks. The outcome of such engagement should be used to inform the development of future reports in terms of reporting focus, as well as direct referencing in the form of quotes, articles, etc.

3. Greater detail around local engagement

As with the Integrated Annual Report 2010, the Integrated Annual Review 2011 provides a good overview of stakeholder engagement at group- and region-level. It is recommended that further effort is made to report more fully on issues raised by stakeholders at each operation – and to follow progress in the addressing of these concerns over time. A step has already been made in this direction with respect to the Far Southeast project in the Philippines (p106-107).

4. Increased emphasis on the impact of socio-economic development spending

Gold Fields has made good progress in the more accurate reporting of its socio-economic development spend (p142-143). It is recommended that increased effort not be made to develop a strong methodology to assess the actual impact of such spending, report on this more fully in future Integrated Annual Reviews and integrate this into project assessment procedures.

5. Increased implementation of risk-based reporting

The wide breadth of issues covered in the Integrated Annual Review 2011 – as well as the detail offered – means it is likely to remain a substantial and comprehensive document. In this context, it is recommended that Gold Fields moves further towards explicit risk-based reporting to help prioritise what information should be included in the hard copy and what information can live online. Although steps have already been made in this direction, there is further room to go in future iterations of the Integrated Annual Review.

We believe this report represents a relevant and complete statement of the integrated performance of Gold Fields. In our view, the Gold Fields statement that it has applied the GRI G3.1 guidelines at level A+ is also fairly stated.

Professor Alyson Warhurst
Dr Kevin Franklin
Gus Macfarlane
Maplecroft, United Kingdom

23 March 2012

www.maplecroft.com

6.3 Independent Assurance Report to the Directors of Gold Fields Limited

Report on Selected Sustainability Information

We have undertaken a limited assurance engagement on selected sustainability information, as described below and presented in the Integrated Annual Report of Gold Fields Limited (Gold Fields) for the year ended 31 December 2011 (the Report), as set out on the pages indicated below.

Subject matter and related assurance

The subject matter of our engagement and related assurance is as follows:

1) In compliance with the International Council of Mining and Metals' (ICMM) Sustainable Development Framework: Assurance Procedure (ICMM Assurance Procedure), Subject Matters 4 (selected performance data) and 5 (self-declared application level in accordance with the Global Reporting Initiative (GRI) G3.1 Guidelines) as described below:

(a) Limited assurance on Subject Matter 4, on page 167 of the Report:

- Social and Labour Indicators - HDSA (percentage in management), Total procurement spend from BEE entities, Procurement spend from BEE entities (in line with the mining charter categories of capital goods, services & consumable goods) and Social Economic Development spend (SED) in ZAR.
- Health and Safety Indicators – Number of cases of Silicosis diagnosed, Number of noise induced hearing loss cases diagnosed (NIHL), Number of chronic obstructive airways diseases cases reported and treated (COAD), Cardio respiratory Tuberculosis (number of new cases reported and treated), Number of cases of respiratory diseases reported and treated, Number of cases of Malaria tested positive per annum, Number of employees in HAART programme (cumulative), Percentage of workforce on the voluntary counselling and testing (VCT) programme, Lost time injury frequency rate (LTIFR), Medically treatment injury frequency rate (MTIFR) and Number of fatalities.
- Environmental Indicators – Number of environmental incidents (level 3 and above) reported, CO_2 Equivalent Emissions Scope 1-3 (in Tonnes), Average quality of water discharged in milli-Siemens/metre (MS/m), Electricity (MWh), Total water consumption per annum from all sources (in Ml) and Diesel (TJ).

(b) Limited assurance on Gold Fields' self-declaration of the GRI A+ application level – Subject Matter 5, on page 3 of the Report.

2) In compliance with the Broad-Based Socio-Economic Empowerment Charter for the South African Mining and Minerals Industry (BBSEEC) and related Scorecard:

(c) Limited assurance on selected Mining Charter elements, on pages 155 and 167 of the Report, prepared in compliance with the BBSEEC (2002) and related Scorecard (2004): Historically Disadvantaged South African's (HDSA's) in Management: Percentage of employees who are classified as designated groups and who are employed at management levels; Number of houses to be built as part of the housing and hostel upgrade programme; Number of rooms completed as part of the housing and hostel upgrade programme; and Community Development: Rand Value Spend on approved SLP projects.

(d) Limited assurance on selected Mining Charter elements, on pages 155 and 167 of the Report, prepared in compliance with the Amendment to the BBSEEC (2010) and related Scorecard (2010):

HDSA ownership: Meaningful economic participation and full shareholder rights in line with the Mining Charter definitions and measurement; Housing and living conditions: Occupancy rate; Total procurement spend from BEE entities; Procurement and Enterprise Development: Procurement spend from BEE entities, in line with the Mining Charter categories of capital goods, services & consumable goods; and Implement approved community projects.

Directors' Responsibilities

The Directors are responsible for the preparation and presentation of the Report as well as the information and assessments contained within it, and for determining the company's objectives in respect of sustainable development performance, including the identification of stakeholders and stakeholder reporting requirements, the identification of material issues, for commitments with respect to sustainability performance, for establishing and maintaining appropriate performance management and internal control systems from which the reported information has been derived, and the selection of the sustainability performance indicators which form the subject matter of our assurance engagement.

Management are also responsible for the selection and application of the following reporting criteria used in the evaluation of the respective subject matter:

- (a), Gold Fields' reported performance during the given reporting period for the identified material SD risks and opportunities (ICMM Subject Matter 4): the GRI G3.1 Guidelines.
- (b), Gold Fields' self declared A+ application level of the GRI G3.1 Guidelines in relation to subject matter 5 of the ICMM Assurance Procedure: the GRI G3.1 Guidelines for the A+ application level.
- (c), selected mining charter elements: the BBSEEC (2002) and related Scorecard (2004).
- (d), selected mining charter elements: the Amendment to the BBSEEC (2010) and related Scorecard (2010).

Our Responsibility

Our responsibility is to express assurance conclusions on the subject matter in (a), (b), (c), and (d) based on our work performed. We conducted our engagement in accordance with the International Standard on Assurance Engagements (ISAE) 3000, Assurance Engagements other than the Audits or Reviews of Historical Financial Information, issued by the International Auditing and Assurance Standards Board. That Standard requires that we plan and perform our engagement to obtain assurance about whether the selected information is free from material misstatement.

Our procedures selected depend on our judgment including the risks of material misstatement of the selected sustainability information in the Report, whether due to fraud or error. In making our risk assessments, we considered internal controls relevant to Gold Fields' preparation of the Report. In a limited assurance engagement, the evidence gathering procedures are less than where reasonable assurance is expressed.

We believe the evidence we have obtained is sufficient and appropriate to provide a basis for our limited assurance conclusions.

Summary of work performed

Our work included the following evidence-gathering procedures:

- Interviewing management and senior executives at group level to evaluate the application of the GRI G3.1 Guidelines, the Broad Based Socio-Economic Empowerment Charters (2002 and 2010) and related Scorecards and to obtain an understanding of the internal control environment relative to the reported sustainability information.
- Inspecting documentation at corporate level to corroborate the statements of management and senior executives in our interviews.
- Understanding the risk assessment process and the information systems which inform the related sustainability reporting processes.
- Testing the processes and systems at group level and site level which generate, collate, aggregate, monitor and report the selected sustainability information.
- Performing site work at Gold Fields' Driefontein, Kloof, Beatrix, South Deep, Tarkwa and Damang operations (which represents the most material contribution to the selected sustainability performance information – ICMM Subject Matter 4) and also performing desk top work on the St. Ives, Agnew and Cerro Corona operations.
- Performing site work at Gold Fields' Driefontein, Kloof, Beatrix and South Deep in terms of selected elements from the Broad Based Socio-Economic Empowerment Charters (2002 and 2010) and related Scorecards.
- Conducting an application level check on the Report to evaluate whether all disclosure requirements of the GRI A+ application level have been adhered to.
- Evaluating whether the information presented in the Report is consistent with our findings, overall knowledge and experience of sustainability management and performance at Gold Fields.

Conclusions

In relation to the Report for the year ended 31 December 2011, we report

(a) On the selected performance data on which we are required to express limited assurance

Based on our work performed, nothing has come to our attention that causes us to believe that the selected performance data identified in (a) above is not fairly stated, in all material respects, in accordance with the GRI G3.1 Guidelines.

(b) On Gold Fields' self-declaration on the GRI A+ application level on which we are required to express limited assurance

Based on the procedures performed, we concur with the assessment made by Gold Fields, that the Integrated Annual Report for 31 December 2011 is consistent with the GRI G3.1 application level A+.

(c) On the selected mining charter elements on which we are required to express limited assurance

Based on our work performed, nothing has come to our attention that causes us to believe that the selected mining charter elements identified in (c) above have not been prepared, in all material respects, in compliance with the BBSEEC (2002) and related Scorecard (2004).

(d) On the selected mining charter elements on which we are required to express limited assurance

Based on our work performed, nothing has come to our attention that causes us to believe that the selected mining charter elements identified in (d) above, have not been prepared, in all material respects, in compliance with the Amendment to the BBSEEC (2010) and related Scorecard (2010).

Report on the ICMM Assurance Procedure

We are required to report our findings on the International Council of Mining and Metals' (ICMM) Sustainable Development Framework: Assurance Procedure (ICMM Assurance Procedure) in respect of:

1 The alignment of Gold Fields' sustainability policies to the ICMM 10 Sustainable Development (SD) Principles and any mandatory requirements set out in ICMM Position Statements (ICMM Subject Matter 1).

2 The reporting of Gold Fields' material sustainable development risks and opportunities based on a review of its business and the views and expectations of its stakeholders (ICMM Subject Matter 2).

3 The implementation of systems and approaches that Gold Fields is using to manage its material safety risks and opportunities (ICMM Subject Matter 3).

Directors' Responsibilities

The Directors are responsible for:

The alignment of Gold Fields' sustainability policies to the ICMM 10 SD Principles and any mandatory requirements set out in ICMM Position Statements.

The reporting of Gold Fields' material sustainable development risks and opportunities based on a review of its business and the views and expectations of its stakeholders.

The implementation of systems and approaches that Gold Fields is using to manage its material safety risks and opportunities.

Our Responsibility

Our engagement included reporting on the ICMM Assurance Procedure in respect of 1, 2 and 3 above based on the knowledge obtained in our evidence gathering procedures in our assurance engagement on the subject matters in (a) and (b) set out in our 'Report on Selected Sustainability Information' above.

Findings

Based on our evidence gathering procedures in our assurance engagement for the year ended 31 December 2011 on the subject matter in (a) and (b) set out in our 'Report on Selected Sustainability Information' above, nothing has come to our attention that causes us to believe that:

1 Gold Fields' sustainability policies are not aligned with the ICMM 10 SD Principles and any mandatory requirements set out in ICMM Position Statements.

2 Gold Fields has not reported material sustainable development risks and opportunities based on a review of its business and the views and expectations of its stakeholders.

3 Gold Fields has not implemented systems and approaches to manage its material safety risks and opportunities.

Independence, Expertise and Limitation of Liability

We have complied with the International Federation of Accountants' Code of Ethics for Professional Accountants, which includes comprehensive independence and other requirements founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behaviour.

Our engagement was conducted by a multidisciplinary team of health, safety, social, environmental and assurance specialists with extensive experience in sustainability reporting.

Our work has been undertaken to enable us to express the assurance conclusions on the subject matters in (a), (b), (c), and (d) in our 'Report on Selected Sustainability Information' together with findings on 1, 2 and 3 in our 'Report on the ICMM Assurance Procedure' to the Directors of Gold Fields in accordance with the terms of our engagement, and for no other purpose. We do not accept or assume liability to any party other than Gold Fields, for our work, for this report, or for the conclusions we have reached.

KPMG Services (Pty) Limited

Per PD Naidoo

Director
Johannesburg
23 March 2012

KPMG Crescent
85 Empire Road
Parktown
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2193

Per I Kramer

Director
Johannesburg
23 March 2012

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Figure 1: Group operating statistics

Parameter	Unit	Data
Environment		
Average quality of water discharged in milli-Siemens/meter	mS/m	77
CO_2 equivalent emissions, Scope 1-3	Tonnes CO_2-e	6.09 million
Electricity	MWh	5,469,784
Number of environmental incidents - Level 3 and above	Level 3 and above	5
Total water consumption per annum from all sources	Ml	78,236
Diesel	TJ	5,440
Health		
Number of cases of Silicosis diagnosed	Number of cases diagnosed	107
Number of cases of Noise Induced Hearing Loss diagnosed	Number of cases diagnosed	139
Number of cases of chronic obstructive airways diseases reported and treated	Number of cases reported and treated	66
Cardio respiratory Tuberculosis	Number of new cases reported and treated	642
Number of cases of Malaria tested positive per annum	Number of cases tested positive for Malaria	215
Number of cases of respiratory diseases reported and treated	Number of cases reported and treated	3,894
Number of employees in HAART programme (cumulative)	Cumulative number of employees	3,523
Percentage of workforce on the voluntary counselling and testing (VCT) programme	Percentage of the workforce on the VCT programme	10.70%
Safety		
LTIFR	Rate	4.69
MTIFR	Rate	5.68
Number of Fatalities	Number	20
Social		
Total socio economic development (SED) spend in Rand	Rand	387.3 million
Mining Charter elements		
Percentage HDSA in Management (DL-FL) who are classified as designated groups and who are employed at management levels (BBSEEC, 2002 and 2010)	Senior % Middle % Junior % Total %	30% 41% 43% 43%
Number of houses to be built as part of the housing and hostel upgrade programme	Number of houses to be built	100
Number of rooms completed as part of the housing and hostel upgrade programme (BBSEEC, 2002)	Number of rooms completed	541
Rand Value spent on approved SLP projects (BBSEEC, 2002)	Rand	18 million
Total procurement spend from BEE entities (BBSEEC, 2010)	Rand	3,455,068,747
BEE Procurement Spend (BBSEEC, 2010): Capital, Services and Consumables	Capital goods % Services % Consumer goods %	47% 46% 46%
Housing and living conditions: Occupancy rate (BBSEEC, 2010)	Rate	1.45
Implement approved community projects (BBSEEC, 2010)	List of approved projects	Tailings Cleanup Futyana Bakery Living Gold Simunye Clinic Nkululeko Creche Eradication of Alien Invaders Bekkersdal Flagship Project Brick making

KDC, South Africa

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