

# INTEGRATED ANNUAL REPORT FOR THE 20-F **2016**

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# ABOUT THIS REPORT

Our Integrated Annual Report 2016 tells the story of Harmony Gold Mining Company Limited (Harmony) for our 2016 financial year (FY16), from 1 July 2015 to 30 June 2016. Certain comparative historical information is presented where relevant and to provide insight into our future plans.

This report explains Harmony's performance in the past year in terms of our strategic objectives and business model, the impact of the external environment in which we operate, what we plan to do in the future and how we intend to achieve this. While we consider the primary audience of our integrated report to be the primary providers of financial capital – shareholders and investors – we understand that other stakeholders also have an interest in our company and address their interests and concerns where possible and appropriate.

This report covers all of Harmony's wholly-owned operations in South Africa as well as its joint venture and own exploration activities in Papua New Guinea. In addition, this report details the material environmental, socio-economic and governance aspects of our operations, and of Harmony as a whole. Discontinued operations have been excluded unless otherwise stated.

For the purposes of this report we define the short, medium and long term as follows:

Short term – six months to a year

Medium term – one year to three years

Long term – longer than three years

In addition to this report, Harmony produces an annual report prepared on a Form 20-F that is filed with the United States Securities and Exchange Commission, in compliance with the listing requirements of the New York Stock Exchange. Copies of this will be available from 26 October 2016, free of charge at [www.sec.gov](http://www.sec.gov) and on our website. In an effort to align the Form 20-F with the Integrated Annual Report, we have included relevant information from the Form 20-F in this report. Any additional information can be found on our website at [www.harmony.co.za/investors](http://www.harmony.co.za/investors). This Integrated Annual Report has been developed in line with the International Integrated Reporting Council Framework, the Global Reporting Initiative G4 guidelines and the King III Report on Governance for South Africa. The full Global Reporting Initiative index is available on our website at [www.har.co.za](http://www.har.co.za).

In addition, our annual financial statements, including the summarised consolidated statements, were prepared in accordance with the International Financial Reporting Standards as issued by the International Accounting Standards Board, the recommendations of the International Financial Reporting Interpretations Committee (collectively the International Financial Reporting Standards), the SAICA Financial Reporting Guidelines as issued by the Accounting Practices Committee, Financial Pronouncements as issued by the Financial Reporting Standards Council, the South African Companies Act 71 of 2008, as amended (Companies Act) and the JSE Listings Requirements.

For ease of reference, Harmony's audited annual financial statements are available in a separate report, the Financial Report 2016. A separate document, the Report to Shareholders containing the notice of annual general meeting and summarised financial statements, is posted to shareholders. No restatements were made in the 2016 financial year.

Everything we do, from risk assessment and decision making to reporting, is informed by our values and our understanding of how various elements of the business fit together. We have applied this approach to this report as well – it is a fully integrated document that gives insight into both our financial and non-financial performance. A section entitled Mineral Resources and Reserves – Summary appears in this report with more comprehensive information available in the report entitled Mineral Resources and Mineral Reserves 2016. The resource and reserve statements were compiled in accordance with the South African Code for Reporting of Exploration Results, Mineral Reserves and Mineral Resources, the Australian Code for Reporting of Mineral Resources and Mineral Reserves, Industry Guide 7 of the United States' Securities and Exchange Commission and the JSE Listings Requirements. This information was gathered, reviewed and confirmed by the relevant competent persons.

At Harmony we acknowledge that our reports are made meaningful by ensuring that the information presented is accurate and appropriate. The key performance indicators presented here were assured by Sizwe Ntsaluba Gobodo. A copy of their assurance report is available in this Integrated Annual Report.

All of the reports making up our 2016 suite of reports, together with a Glossary of Terms, used in these reports, are available online at [www.har.co.za](http://www.har.co.za).

## FEEDBACK

As our reporting and the activities discussed can be improved through feedback, should you have any comments or suggestions on this report, send them to our investor relations team: [HarmonyIR@harmony.co.za](mailto:HarmonyIR@harmony.co.za).

# WHO WE ARE

Harmony, a gold mining and exploration company, conducts its activities in South Africa, one of the world's best-known gold mining regions, and in Papua New Guinea, one of the world's premier new gold-copper regions. Harmony, which has more than six decades of experience, was South Africa's third largest gold producer and the twelfth largest in the world in FY16. We are currently growing a significant gold-copper portfolio in Papua New Guinea.

At Harmony, we understand the significant impact our company has on the lives of people, on the communities that surround our mines, on the environment, and on the economic well-being of the countries in which we operate.

## OUR OPERATIONS AND PROJECTS

In South Africa, our operations are focused on the world-renowned Witwatersrand Basin. In addition, we have an open pit mine on the Kraaipan Greenstone Belt. We operate nine underground mines, one open-pit mine and several surface operations.

Our operation in Papua New Guinea is part of a 50:50 joint venture with Newcrest Mining Limited (Newcrest). This joint venture includes the Hidden Valley\* open-pit gold and silver mine, the Golpu project in Morobe Province and significant exploration tenements. In addition to its joint ventures, Harmony also has a wholly-owned exploration portfolio that focuses on highly prospective areas in Papua New Guinea, including the Kili Teke gold-copper prospect.

In FY16, our South African operations accounted for 93% of total production of 1.08Moz, with the remaining 7% coming from Papua New Guinea. At the same time, our South African holdings represented 55% of our mineral resource base, while those in Papua New Guinea represented 45%. In terms of gold equivalent ounces, 62% of total mineral reserves are gold and 38% copper.

Harmony has been a very successful explorer in Papua New Guinea, by investing in and growing the Golpu project and by discovering the Kili Teke prospect. In developing a portfolio of world-class gold-copper assets in Papua New Guinea – replacing ounces at a discovery cost of less than US\$10 per gold equivalent ounce – we are creating excellent long-term value for Harmony's shareholders.

*\* Post year-end, on 19 September 2016, we acquired full ownership of Hidden Valley, subject to the conditions precedent being met.*

# WHERE

# WE OPERATE



## SOUTH AFRICA

### UNDERGROUND

#### FREE STATE OPERATIONS

- Tshepong
- Phakisa
- Bambanani
- Target 1
- Joel
- Masimong
- Unisel

#### WEST RAND OPERATIONS

- Doornkop
- Kusasalethu

### OPEN PIT

- ▲ Kalgold

### SURFACE

- Phoenix
- Dumps

## HARMONY IN FY16

**1.08Moz**  
GOLD PRODUCED

**105.2Moz**  
MINERAL RESOURCES

**36.9Moz**  
MINERAL RESERVES

**30 547**  
PEOPLE EMPLOYED

**R18.3 billion**  
REVENUE GENERATED

## PAPUA NEW GUINEA

- ▲ Hidden Valley<sup>1,2</sup>
- Golpu project<sup>1</sup>
- Exploration<sup>3</sup>

<sup>1</sup> As at 30 June 2016 held in a 50:50 joint venture through Morobe Mining Joint Ventures with Newcrest

<sup>2</sup> Harmony acquired full ownership post year-end

<sup>3</sup> Harmony 100% (Kili Teke) and within the joint venture

## OUR PEOPLE

Our company delivers long-term benefits to a broad range of stakeholders. We rely on experienced, skilled teams who live our values and play their role in maintaining stakeholder relationships, growing profits and maintaining a sustainable company.

At the end of FY16, Harmony employed 30 547 people in total – 25 861 employees and 4 580 contractors in South Africa and 76 employees and 30 contractors in Papua New Guinea (excluding employees of the Morobe Mining Joint Ventures). Our employees are drawn from communities around our operations, from other provinces in South Africa and Papua New Guinea, and from other countries (Lesotho, Mozambique, Zimbabwe and Australia). Our corporate offices are located in Randfontein, South Africa, close to some of our South African operations, while our south-east Asia office is in Brisbane, Queensland, Australia.

The company is governed by a board of directors which brings together a range of skills and experience and whose members are committed to maintaining the highest levels of corporate governance. In turn, the directors entrust the management of Harmony to skilled management teams which work towards ensuring that the company remains sustainable, towards improving margins and towards increasing the value of our assets.

## OUR VALUES AND THEIR ROLE IN CREATING VALUE

As a company, Harmony understands that long-term value is about more than the commodities we produce and the profits we make. Our worth is also reflected in the impact we have on the lives of people, now and in the future.

Harmony lives its values – safety, being accountable, achievement and being connected and honest. These are the compass points for our actions, ensuring that, in addition to achieving our strategic goals, we seek to make the right decisions and support the members of our teams in doing so. They are ingrained in our training initiatives and decision-making processes, ensuring that they are at the front of employees' minds and actions, extending beyond our operations' gates. They guide our interactions with external stakeholders, from shareholders and the media to local communities, including those from which our employees are drawn. Our hope is that through our commitment, we can build a company with which people want to be associated and which will generate shared value into the future.

## OUR SHAREHOLDERS

Harmony is listed on the Johannesburg Stock Exchange and on the New York Stock Exchange. The company's shares are quoted in the form of American Depositary Receipts on the New York Stock Exchange and as International Depositary Receipts on the Berlin Stock Exchange.

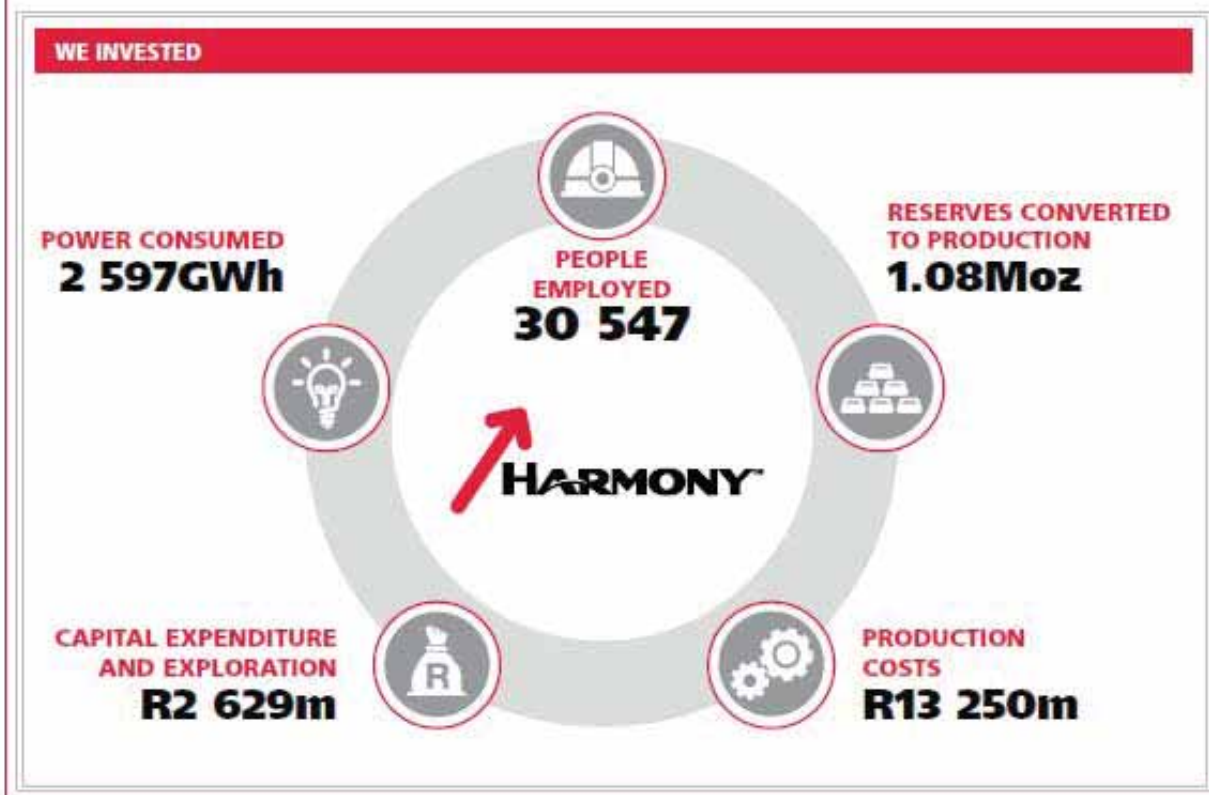
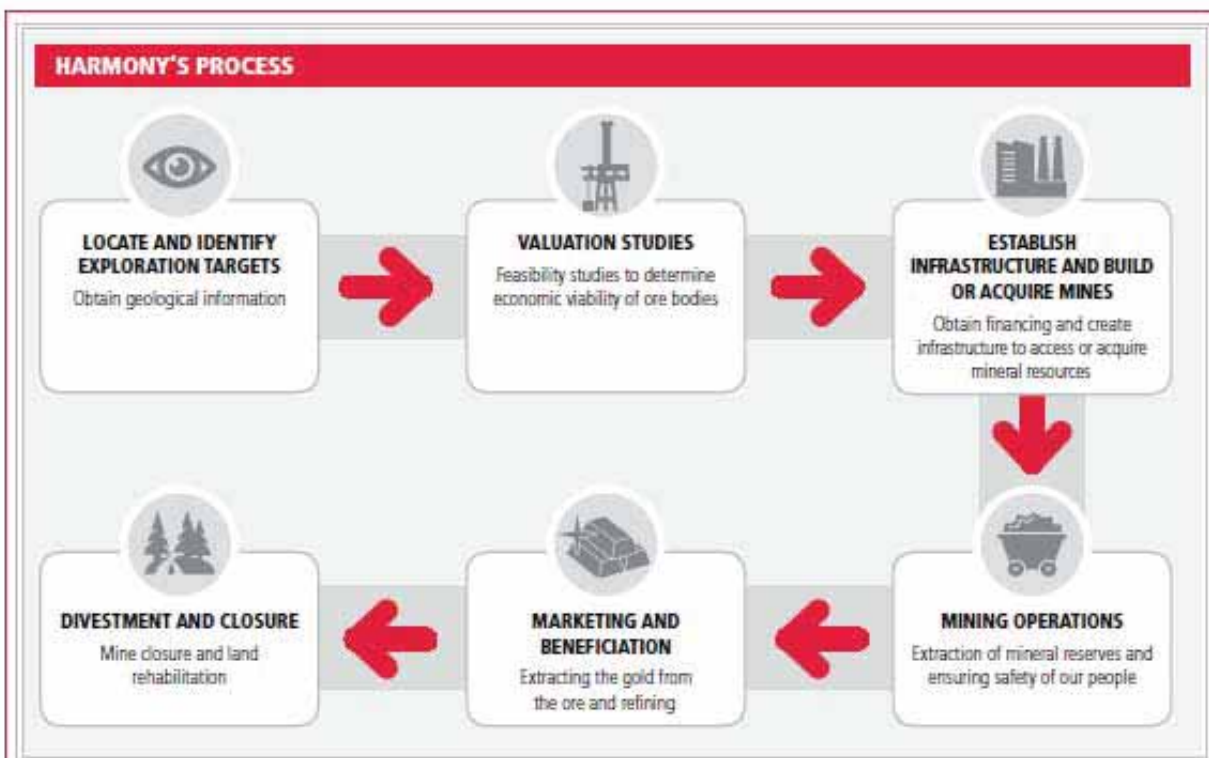
## OUR AWARDS

In November 2015, Harmony's 2014 Integrated Annual Report received a merit award at the integrated reporting awards ceremony hosted by the Chartered Secretaries Southern Africa in partnership with the Johannesburg Stock Exchange.

Post year end, three of Harmony's operating units – the Asset Management Forum, Kusasaletu and Kalgold – received awards for second, third and fourth places respectively in the Best Improved Safety Performance category at the 2016 MineSAFE awards ceremony. Another three business units – Joel, Bambanani, and Kalgold – came second, third and fourth respectively in the Best Safety Performance category. In addition, our health hubs healthcare model was awarded third place in the Medical/Wellness category. Furthermore our Merriespruit housing development was named the best community residential unit project in the Free State. These awards all speak to our ongoing commitment to building a sustainable business and we are honoured to have been recognised. For the second consecutive year, the Carbon Disclosure Project has awarded Harmony a score of 100 for its climate change disclosure and ranked its climate change performance in Band A.

In addition, the Carbon Disclosure Project has also awarded Harmony a position on its Water A list in acknowledgment of the work being done in response to water issues and for sustainable water management. Harmony was one of only eight companies globally to achieve this award.

# HOW WE CREATE VALUE





## VALUE CREATED



**R18 334m**  
REVENUE



**R964m**  
HEADLINE EARNINGS



**1.08Moz**  
GOLD PRODUCED



**R5 084m**  
PRODUCTION PROFIT



**50 SA cents a share**  
DIVIDEND DECLARED



**1.33Moz**  
SILVER PRODUCED

Harmony creates value through more channels than just monetary spend. We continue to help improve education, build infrastructure, provide healthcare, stimulate local economies and rehabilitate the environment. Examples of this work can be found throughout this report.



## SHARE OF VALUE CREATED DURING FY16

## VALUE DISTRIBUTED



**WAGES AND SALARIES PAID (incl. contractors)**

**49%**



**TAXES AND ROYALTIES PAID, COMMUNITIES AND LOCAL ECONOMIC DEVELOPMENT**

**1.1%**



**CAPITAL EXPENDITURE AND EXPLORATION**

**16.5%**



**ELECTRICITY SPEND**

**13%**



**STORES AND SERVICES**

**20%**



**REHABILITATION**

**0.4%**



# CHAIRMAN'S LETTER

Dear shareholder

The year under review was a successful year.

Our share price increased from a low of R16 at the end of June 2015 to R52 at the end of June 2016. Harmony's share price outperformed all other gold mining companies locally and abroad. This increase was driven by the increase in the gold price, our return to profitability and the good work that our management is doing. The chief executive officer's review deals in greater detail with the operational performance of our mines.

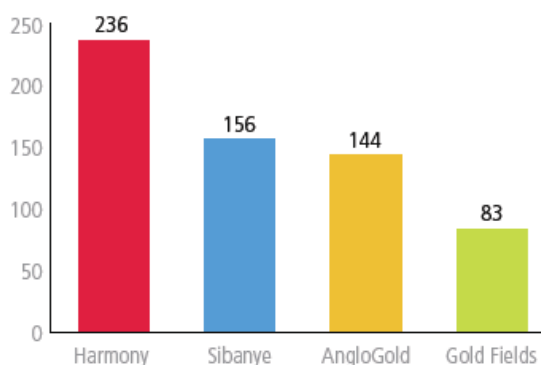
Negative sentiment on gold was reversed by a surge in investors buying gold exchange traded funds. A record high of 568 tons of gold was bought through exchange traded funds in the first half of calendar 2016, with interest centred in North America and London<sup>1</sup>. The weakening of the exchange rate against the US dollar further contributed to the 21% increase in the rand gold price.

*Good production results for the year combined with positive market conditions enabled us to increase our margins, significantly reduce debt, strengthen the balance sheet and declare our first dividend in three years of 50 SA cents per share.*

<sup>1</sup> Thomson Reuters GFMS Gold Survey 2016, quarter 2

## Harmony's share price performance against peers during FY16

(%)



**Note:**

Source – Thompson Reuters

## SAFETY

The safety and health of all our employees is our primary concern. We are committed to creating a culture where health and safety is our first priority.

There has been a substantial improvement in the lost-time injury frequency rate from 9.57 in the previous year to 6.50 per million hours worked in the current year.

Regrettably ten of our colleagues lost their lives in accidents during the financial year. We remain committed to zero fatalities at all our operations. I send my personal condolences and those of the entire Harmony to the families, friends and work colleagues of those who lost their lives at our operations.

The causes of all accidents are investigated and analysed thoroughly by our own safety personnel in conjunction with the authorities and employee representatives, and lessons learned are rigorously applied.

## FINANCIAL RESULTS

This year we started reaping the benefits of our continued focus on cost management as well as the restructuring and optimisation initiatives implemented by management during the previous year. We achieved a unit cost increase of only 3% year-on-year and an 81% increase in production profit to R5.1 billion.

It is pleasing to see that our capital investments over the past few years have *inter alia* resulted in the improvement of the underground grade to an average of 5.02g/ton for this year. We look forward to this trend continuing into the future.

A higher average rand gold price received together with slightly higher gold production resulted in a net profit of R949 million for the year compared to a loss of R4.5 billion for the previous year. Headline earnings amounted to 221 SA cents per share compared to a headline loss of 189 SA cents during the previous year.

Further details on the company's operational performance are included in the Operational performance section of this report.

## GROWTH STRATEGY

We continuously investigate opportunities to increase our production and reserves. Our acquisition of Newcrest's 50% share in Hidden Valley, in Papua New Guinea, is in line with our overall aspiration to increase our annual production profile to 1.5Moz within three years. We believe that Hidden Valley has the potential to contribute approximately 180 000oz of gold per annum to Harmony's production profile at an all-in sustaining cost of less than US\$950/oz within the next three years.

Our exploration and development in Papua New Guinea has been successful since our first transaction in 2003. Following the declaration of a maiden resource at our wholly-owned Kili Teke prospect in November 2015, continued drilling proved to be increasingly promising and enabled us to declare an updated resource that has grown by 50% to 6Moz on a gold equivalent basis.

The Golpu gold-copper project in Papua New Guinea, is a world-class asset due to its size, high grades, long-life and low operating costs. We have completed and announced the project's stage 1 feasibility study outcomes as well as the prefeasibility study outcomes for stage 2. The design of the mine allows optionality and flexibility to scale the operation up with a relatively low capital investment. Golpu will create significant value for our shareholders in the long term.

## LEVERAGING OF THE ENVIRONMENT FOR SOCIO-ECONOMIC UPLIFTMENT

Harmony is committed to making a lasting contribution to the economic and social development of all stakeholders in the countries where we operate.

Harmony's rehabilitation programme is creating jobs and contributing to building sustainable communities beyond the life of our mines by finding alternative uses of rehabilitated land for agriculture and renewable energy projects. This year we implemented the biogas project, establishing commercially viable vegetable and olive farms in Welkom and launched the Police and Prisons Civil Rights Union (POPCRU) training academy. We also released the Merriespruit 3 community rental units in partnership with the Department of Human Settlement and the Department of Mineral Resources.

I am confident that the South African government is committed to creating a globally competitive dispensation for investment in the mining industry. I uphold this view despite the outstanding issues between the government and the Chamber of Mines. We sometimes take longer than what is necessary to resolve our differences on various multi-stakeholder issues, whether it is the "once empowered always empowered principle" or other socio-economic issues. Our history and culture of multi-stakeholder engagement and seeking solutions which are in the interests of all stakeholders gives rise to my confidence that we will resolve these issues.

Papua New Guinea is also reviewing its current mining legislation with draft legislation tabled for discussion with all stakeholders.

## GOLD MARKET

During the first six months of the reporting period, the gold price continued the downward trend that started in 2013, reaching lows of around US\$1 060/oz, with sentiment remaining depressed. This was largely driven by the prospect of rising US interest rates as well as general negative commodity market sentiment.

In stark contrast, the second six months of the reporting period saw a dramatic change in sentiment, with the gold price rising by 25% to US\$1 321/oz by the end of the financial year. Despite weak physical demand, especially from China and India, investment demand surged to push the gold price higher. The impact of Brexit added to uncertainty and provided further impetus to investment demand.

Worldwide mine gold production decreased during the first half of the 2016 calendar year, by 1% to 1 514 tons compared to the corresponding period in 2015. This points to a possible year-on-year decrease in mine production for the first time since 2008, as the long-term impacts of decreased capital and exploration spending begins to filter through. It is pleasing to see that the official sector remains a meaningful net buyer of gold, notably Russia and China<sup>2</sup>.

<sup>2</sup> Thomson Reuters GFMS Gold Survey 2016, quarter 2

At Harmony we remain confident of the metal's long term fundamentals as a desirable and scarce store of wealth. However, periods of price volatility in our business can have a significant impact on our margin but can also present short term opportunities to secure an attractive margin. This is reflected by the steps taken by management to conclude a currency hedge for about 35% of our annual dollar flows in February 2016, and then concluding a gold production hedge just after the end of the current financial year for about 20% of two years' gold production.

## THANKS

I would like to express my gratitude to all the directors, the management and all the employees of Harmony for their commitment, sacrifices and contributions to the development and growth of the company.

Peter Steenkamp has done an excellent job since being appointed as chief executive officer. I am confident that Harmony will continue to create value for our shareholders and also benefit our diverse range of stakeholders.

Patrice Motsepe

Chairman

26 October 2016

# CHIEF EXECUTIVE OFFICER'S REVIEW

It is a pleasure to present my first annual report as chief executive officer of Harmony.

Harmony is driven by excellence, with strong management teams and mining capabilities. With the quality ore bodies that we own, we are positioned for a promising future. Operationally, Harmony has had a good year and we are in a much improved financial position. Harmony's share price performed exceptionally well over the past year, outperforming our peers and the gold price.

## SAFETY AND HEALTH

In accordance with our values, our objective remains that our people are able to work without any harm to their safety or to their health.

Despite our combined best efforts, ten of our people lost their lives in the service of the company, nine in South Africa and one in Papua New Guinea. The colleagues no longer with us are: Piwas Kisa, Pheelo William Ramohlokoane, Ezekiel Nonkevu, Cancel Nurse Malungane, Carlos Siteo, Moeketsi Mongoako, Motlatsi Samuel Lehana, Patuxolo Butshula and Mncedisi Mbongwa and Clinton Lewis Titmuss. I join my colleagues in offering our heartfelt condolences to the families, colleagues and friends of the deceased.

We have thoroughly investigated the causes of these fatal accidents. The lessons learned have resulted in revised procedures and the introduction of a central safety assurance team.

Harmony has intensified its focus on safety through the appointment of a chief operations officer who will refine the safety strategy to institutionalise risk management, promote a culture of continuous improvement and a genuine care for safety whilst providing safety leadership.

Our overall lost-time injury rate improved from 9.24 to 6.23 per million hours worked across the company from the previous year.

Harmony had been honoured with a number of awards at the 2016 MineSAFE awards ceremony which attests to our commitment to creating a safe and healthy workplace for our people. For more information, see Our Awards on page 7.

In terms of our holistic approach to ensure the wellness of our people, our health-care hubs are based at the operations and are staffed by medical professionals. These facilities provide prompt health services when they are required and redirect those in need of further attention to outsourced service providers. Our people are encouraged to be proactive in seeking treatment and advice.

## OPERATIONS

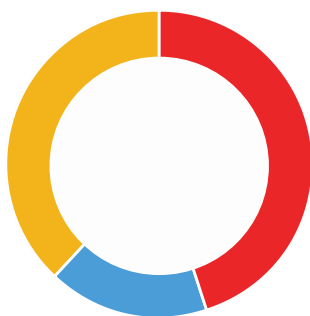
Total gold production for FY16 amounted to 1.08Moz, marginally higher than the previous year. An average increase of 21% in the rand gold price escalated group turnover to R18.3 billion (US\$1.3 billion) (19% higher than the previous year in rand terms, US\$84 million lower in US\$ terms). Good cost control assisted us in limiting the increase in all-in sustaining costs to only 3% at R467 526/kg. The combined effect of this was an 81% increase in production profit to R5.1 billion (US\$350 million).

Harmony increased the underground grade recovered for a fourth consecutive year to an average grade of 5.02g/t. This is due to the good results delivered by our projects. The ramp up in production at Phakisa and Tshepong decline is on track. We have managed to access higher grade areas through the deepening of Doornkop and Kusasalethu. In addition, we are successfully mining the Bambanani high-grade shaft pillar and the completion of the Joel decline is expected to deliver additional higher grade ore.

I am confident that we will achieve our production guidance of 1.05Moz at an all-in sustaining cost of US\$1 100/oz (R495 000/kg) for FY17, having positioned each of our mines to produce safe, profitable ounces.

## Gold equivalent reserves: geographic split

(%)



■ South Africa: gold	<b>45</b>
■ Papua New Guinea: gold	<b>17</b>
■ Papua New Guinea: copper	<b>38</b>

Total gold equivalent reserves: 36.9Moz	
South Africa (gold):	16.8Moz
Papua New Guinea (gold):	6.2Moz
Papua New Guinea (copper):	*13.9Moz
* Equivalent to 5 269Mlb copper	

## GROWING PROFITABILITY

Harmony's aspiration is to grow our production to approximately 1.5Moz and increase our profitability in the next three years by:

- growing, nurturing and developing our core assets
- harvesting operations that are high cost and have a short life
- expanding in South Africa, into Africa and in Papua New Guinea
- exploring organic growth opportunities

### Papua New Guinea

Excellent progress is being made with the Golpu gold-copper project in which we have a 50% stake with Newcrest. During the year the feasibility and prefeasibility study of the project was completed, showing that the mine will operate in the lowest industry cost quartile, generating strong cash flows over many years. The Golpu gold-copper porphyry, a world-class deposit, lends itself to phased development and block cave mining and when completed, will be the largest underground mine in Papua New Guinea. The Golpu reserve was updated with the completion of the feasibility and prefeasibility study of Stage 1 and Stage 2 of the project. The updated reserve is declared as 379Mt containing 11.0Moz gold and 4.8Mt of copper (100% basis, 50% attributable to Harmony). Post year-end, an application for a special mining lease was submitted to the Mineral Resources Authority in Papua New Guinea.

We declared a maiden mineral resource in November 2015 at our wholly-owned Kili Teke project in Papua New Guinea. Subsequent exploration and drilling to further probe the potential to expand the two zones along strike and down dip generated encouraging results. This enabled us to update our initial estimate, post year end, to a 222Mt mineral resource at 0.35% copper and 0.25g/t gold (785 000t copper, 1.2Moz gold). The deposit contains two main areas of higher-grade quartz stockwork-related mineralisation.

Post year-end, Harmony acquired the whole of Hidden Valley, which was previously held in a 50:50 joint venture with Newcrest. The conclusion of this transaction is subject to South African regulatory approval.

Harmony plans to invest and develop stages 5 and 6 of the mine, accessing the ore body of 1.4Moz ounces of gold and 27Moz of silver over a period of seven years. We believe that Hidden Valley has the potential to contribute approximately 180 000oz gold per annum to Harmony's production profile at an all-in sustaining cost of less than US\$950/oz within the next three years.

## South Africa

We have resolved to optimise cash flow by accessing higher grades at Kusasaletu and shortening its life of mine. We are considering the feasibility of mining the high-grade Ventersdorp Contact Reef payshoot below our current infrastructure at Kusasaletu.

We are currently busy with an optimisation study to integrate the infrastructure between Phakisa and Tshepong with a view to improving the financial metrics of mining the combined operation.

Additional potential payable resources are expected to be defined with planned drilling of ore bodies scheduled at Tshepong, Phakisa, Doornkop, Target 1 and Kalgold.

### SOUTH AFRICA'S LABOUR ENVIRONMENT

Harmony continued its open and co-operative interactions with employees and unions. In applying our value of connectedness, we ensure that employees feel part of the Harmony family. Since my appointment, I have used every opportunity to engage with our employees. A union leadership empowerment programme had been initiated in FY15 aimed at sharing the business imperatives and performance, company strategy and an understanding of business principles.

Labour disputes and strikes are considered a material issue for Harmony. Not only do these disputes result in a loss of production, but they also affect morale and reputation, and present a risk to non-striking employees, communities and company assets. We are fortunate that inter-union rivalry did not significantly affect Harmony in the past year.

We have reached a three-year wage agreement with the National Union of Mineworkers, United Association of South Africa and Solidarity, effective from 1 July 2015. Increases range from 6% for miners, artisans and officials to 10.4% for category 4 employees.

### MINING CHARTER AND SOCIAL RESPONSIBILITY

Harmony supports South Africa's Broad-Based Socio-Economic Charter for the Mining Industry (the Charter) which is aimed at including historically disadvantaged persons and transforming the mining industry. Harmony is fully compliant with the current Charter's provisions and we have exceeded the 26% ownership credentials.

A draft new Mining Charter has been proposed by the Minister of Mineral Resources during May 2016. Harmony has partnered with the industry in seeking an open and negotiated agreement of the draft Charter's provisions to ensure that the rights of all our stakeholders are protected and advanced. Discussions are ongoing.

Harmony continues to comply with the current Charter's social requirements. Refer to the Mining Charter Compliance Scorecard.

### CONCLUSION

I extend my appreciation to my chairman, Patrice Motsepe, for his support and leadership at the board. I also want to thank the board and my executive team for their guidance and support. I would also like to thank everyone at Harmony for making this company what it is and the support you have given me.

Our management teams are geared to deliver, steered by an experienced and competent executive team. I have no doubt that Harmony's current momentum will be upheld.

**Peter Steenkamp**  
Chief executive officer  
26 October 2016

# SOCIAL AND ETHICS COMMITTEE: CHAIRMAN'S REPORT

Dear stakeholder,

It gives me immense pleasure as chairman of the social and ethics committee to present the committee's report for the year ended 30 June 2016. The committee is constituted in terms of the requirements of section 72(8) of the Companies Act 71 2008 (the Act), and its associated regulations. It is a sub-committee of the board and fulfils its functions on behalf of Harmony and its subsidiary companies with regard to social and economic development, environmental stewardship, governance and ethics, public safety, health, labour and employment matters. Operational safety is the responsibility of the technical committee. For more information on the composition of the social and ethics committee, refer to the Corporate Governance section of this report.

Despite market volatility in FY16, Harmony remained committed to the sustainable running of its business, in its commitment to delivering on its social and economic responsibilities and in making a lasting, positive impact on surrounding communities, our employees and other stakeholders.

## APPROACH

Sustainability at Harmony is underpinned by our values system, which is intrinsic to our operating philosophy and practices. It remains key in our decision-making. We subscribe to the five capitals model (natural, human, social, manufactured and financial capital) which underpins our approach to sustainable investment. Our objective is to improve and advance each capital so that we create value during the lives of our mines and beyond by leaving a positive, lasting and felt legacy.

The social and ethics committee is confident that during the past financial year it complied fully with the legal, regulatory and other responsibilities assigned to it by the board.

## ACTIONS IN FY16

The committee, which undertakes its duties with accountability both to the board and to the company's stakeholders, met five times during the past financial year and attended one site visit during the year. The committee's key activities are summarised in the Corporate Governance section of this report.

## PUBLIC HEALTH AND SAFETY

The committee maintained responsibility for public safety during the past financial year and reviewed its strategic interventions, while reinforcing robust controls over access to our mines and the surrounding properties. Of particular concern are the repeated breaches of security perimeters, both by members of our communities and by criminals intent on illegal activities. I am saddened to report that three community members lost their lives in two separate incidents in Welkom as a result of trespassing on hazardous mine sites. Numerous community interventions were added to our existing programmes to further raise awareness of safety conditions and hazardous environments. Community interventions also focused on primary healthcare and HIV/AIDS awareness.

## EMPOWERMENT AND TRANSFORMATION

Our moral obligation to our host communities extends beyond providing direct employment opportunities and financial benefits. We also drive social sustainability through local economic-development programmes as well as by local procurement.

Although the period for complying with the targets of the Mining Charter came to an end in December 2014, Harmony, in the spirit of transformation and going beyond compliance, continued to deliver in line with the tenets of the Charter, advancing in particular housing and living conditions, procurement and human resources. We measured ourselves against the 2014 targets and are pleased to confirm that we achieved and exceeded these targets during this financial year. (See the Mining Charter Compliance Scorecard in this report.)



When it comes to investing in and transforming our workforce, we have met and exceeded all the group-wide targets, with the appropriate number of historically disadvantaged South Africans employed at all levels of management. For more on this see, Employees and Communities section of this report.

Societal development remains an important objective and, with this in mind, as a group we invested R18 million (US\$1 million) in local economic development. One notable legacy project implemented during the reporting period was the Merriespruit community rental unit which is directed at satisfying the demand for rental accommodation in Welkom. Construction of the Merriespruit 3 community rental units created employment for 300 members of the local community while building work was underway. Post year-end, this project was named the best community residential unit project in the Free State.

Recognising the role of small and medium enterprises in the community, Harmony launched the Phakamani Initiative which provides soft loans to entrepreneurs in Welkom. Although still in its infancy, the initiative has already made several meaningful investments, some of which supported the creation of 30 jobs.

In April 2016, the Minister of Mineral Resources released a draft Mining Charter for public comment. Harmony, through the Chamber of Mines, has been in extensive engagements with the Minister to develop the amended charter into a progressive document that will contribute to the further development of an enabling environment conducive to responsible mining and heightened transformation.

### **BUILDING A HEALTHY AND ENGAGED WORKFORCE**

We believe that a healthy workforce coupled with a healthy workplace culture is integral to sustaining our productivity and profitability in today's business climate. Our culture gives priority to health and safety and, to this end, Harmony committed R100 million to a proactive healthcare strategy. In its third year of implementation in FY16, this initiative has already delivered a 14% reduction in absenteeism which translates to a thousand more people at work each day.

Consultation and collaboration form the cornerstones of our relationship with our employees, directly and through organised labour. It was against the strong fabric of mutual respect and trust that together we concluded a three-year wage agreement in October 2015. As the agreement was reached with unions which represented the majority of our employees, it was extended to include all employees. Following this agreement, we have experienced stable industrial relations across our operations. Refer to Operational Performance section of this report.

### **ENVIRONMENTAL MANAGEMENT**

Looking back at the year under review, the committee is satisfied with Harmony's environmental performance. Managing our finite resources responsibly remained high on the agenda. With the water-scarcity challenges in South Africa, Harmony converted two of its operations to zero discharge by constructing two water treatment plants, thus maximising the re-use of mine water. Energy conservation was achieved by driving efficiencies, and innovative solutions which resulted in a 3% reduction in electricity consumption. Our performance in these areas was recognised with 'A' rankings in calendar year 2015 for the Carbon Disclosure Project's Climate Change and Water programmes.

Our land rehabilitation programme has advanced beyond demolition and restoration activities and has progressed to value creation. The bio-energy initiative is being commissioned, the solar parks are undergoing licensing and the agriculture and agro-processing programme has moved into implementation. All these projects are designed to deliver ecological benefits while supporting the socio-economic imperatives of job creation and entrepreneurial development.

### **ETHICS**

We believe ethical conduct is a prerequisite for doing business. There is a direct correlation between sustainable business success and consistent ethical behaviour. The continued success of our company depends on the highest levels of integrity across all aspects of our business. We want all our stakeholders to view Harmony as a company they can trust – therefore we are unequivocal about our values and the way in which these values find expression in our daily behaviour. Our code of conduct was developed further and we introduced a behavioural code, which simplifies the detail set out in the code of conduct. For more on these codes, refer to Corporate Governance section of this report.

## LOOKING FORWARD TO THE YEAR AHEAD

Although the first six months of the financial year were particularly challenging for the gold mining industry, Harmony has positioned itself to benefit from a higher gold price. Wider operating margins have strengthened our ability to meet our social commitments. Harmony is strengthening its engagement with host communities and with local authorities to ensure continuity and to manage expectations. It is vital that Harmony makes promises that it can keep in order to maintain and retain the relationships the company has worked to establish.

The licensing of Golpu in Papua New Guinea is of utmost importance to Harmony, and it is imperative that engagement and consultation are promoted between all key stakeholders to assist in obtaining the special mining lease permits.

From a regulatory perspective, the Mineral and Petroleum Resources Development Act amendment bill and the Mining Charter in South Africa are under review and, in order to ensure that the legal reform results in sound implementable outcomes, Harmony is engaging closely with the authorities through the Chamber of Mines and other forums. Harmony has a strong footprint in South Africa and Papua New Guinea and remains committed to all our stakeholders and relevant host communities.

## THANKS







We continue to make considerable progress on our journey towards sustainable development to deliver tangible benefits for all stakeholders. The commitment of our people to safety, health, governance and environmental performance is commendable and for that I thank you all. My sincere appreciation goes to members of the social and ethics committee and the board for their continued and invaluable guidance, support and input. Feel free to assist us in our further work by voicing your opinions and by providing feedback on our performance and disclosure.





**Modise Motloba**

Chairman: social and ethics committee  
26 October 2016

# BOARD OF DIRECTORS

 <p>Patrice Motsepe</p>	<p><b>CHAIRMAN</b>  <b>Patrice Motsepe (54)</b>  <i>BA (Legal), LLB</i>            Appointed a director and non-executive chairman on 23 September 2003</p> <p>In addition to being a non-independent non-executive chairman, Patrice is also a member of the nomination committee</p>
 <p>Modise Motloba</p>	<p><b>INDEPENDENT NON-EXECUTIVE DEPUTY CHAIRMAN</b>  <b>Modise Motloba (50)</b>  <i>BSc, Diploma in Strategic Management</i></p> <p>Appointed to the board on 30 July 2004</p> <p>Chairman of the social and ethics committee and a member of the nomination committee and the audit and risk committee</p>
 <p>Fikile De Buck</p>	<p><b>LEAD INDEPENDENT NON-EXECUTIVE DIRECTOR</b>  <b>Fikile De Buck (56)</b>  <i>BA (Economics), FCCA</i></p> <p>Appointed to the board on 30 March 2006</p> <p>Chairman of the nomination committee and a member of the social and ethics committee, the remuneration committee and the audit and risk committee</p>
 <p>Peter Steenkamp</p>	<p><b>EXECUTIVE DIRECTORS</b>  <b>CHIEF EXECUTIVE OFFICER</b>  <b>Peter Steenkamp (57)</b>  <i>B Eng (Mining); Mine Managers Certificate Metal Mines; Mine Managers Certificate Fiery Mines; CPIR; MDP; BLDP</i></p> <p>Appointed to the board on 1 January 2016, on appointment as chief executive officer</p>
 <p>Frank Abbott</p>	<p><b>FINANCIAL DIRECTOR</b>  <b>Frank Abbott (61)</b>  <i>BCom, CA (SA), MBL</i></p> <p>First appointed to the board as non-executive director on 1 October 1994, and was financial director from 1997 until 2004</p> <p>Re-appointed financial director in February 2012</p>

 <p>Mashego Mashego</p>	<p><b>EXECUTIVE DIRECTOR</b>  <b>Harry Ephraim “Mashego” Mashego (52)</b>  <i>BA (Education), BA (Hons), (Human Resources Management) Joint Management Development Programme, Global Executive Development Programme</i></p> <p>Joined Harmony in 2005 and appointed an executive director on 24 February 2010</p>
<p><b>INDEPENDENT NON-EXECUTIVE DIRECTORS</b></p>	
 <p>Joaquim Chissano</p>	<p><b>Joaquim Chissano (77)</b>  <i>PhD</i></p> <p>Appointed to the board on 20 April 2005</p> <p>Member of the nomination committee and the social and ethics committee</p>
 <p>Ken Dicks</p>	<p><b>Ken Dicks (77)</b>  <i>Mine Managers Certificate (Metalliferous Mines), Mine Managers Certificate (Fiery Coal Mines), Management diplomas (Unisa) and (INSEAD)</i></p> <p>Appointed to the board on 13 February 2008</p> <p>Member of the technical committee and the investment committee</p>
 <p>Dr Simo Lushaba</p>	<p><b>Dr Simo Lushaba (50)</b>  <i>BSc (Hons), MBA , DBA , CD (SA)</i></p> <p>Appointed to the board on 18 October 2002</p> <p>Chairman of the investment committee and member of the audit and risk committee and the remuneration committee</p>
 <p>Cathie Markus</p>	<p><b>Cathie Markus (59)</b>  <i>BA, LLB</i></p> <p>Appointed to the board on 31 May 2007</p> <p>Chairman of the remuneration committee and member of the investment committee and the social and ethics committee</p>
 <p>Mavuso Msimang</p>	<p><b>Mavuso Msimang (75)</b>  <i>MBA (Project Management), BSc</i></p> <p>Appointed to the board on 26 March 2011</p> <p>Member of the nomination committee and the social and ethics committee. Successor to the lead independent non-executive director</p>

 <p>Karabo Nondumo</p>	<p><b>Karabo Nondumo (38)</b>  <i>BAcc, HDip (Acc), CA (SA)</i></p> <p>Appointed to the board on 3 May 2013</p> <p>Member of the audit and risk committee, the technical committee and the investment committee</p>
 <p>Vishnu Pillay</p>	<p><b>Vishnu Pillay (59)</b>  <i>BSc (Hon), MSc</i></p> <p>Appointed to the board on 8 May 2013</p> <p>Member of the technical committee, the investment committee and the remuneration committee</p>
 <p>John Wetton</p>	<p><b>John Wetton (67)</b>  <i>CA (SA), FCA</i></p> <p>Appointed to the board on 1 July 2011</p> <p>Chairman of the audit and risk committee and member of the social and ethics committee, remuneration committee and investment committee</p>
<p><b>NON-EXECUTIVE DIRECTOR</b></p>	
 <p>André Wilkens</p>	<p>André Wilkens (67)</p> <p><b>Mine Manager's Certificate of Competency, MDPA, RMIIA, Mini MBA Oil and Gas</b></p> <p>Appointed to the board on 7 August 2007</p> <p>Chairman of the technical committee and a member of the investment committee and the remuneration committee</p>

**Directors to be re-elected at the forthcoming annual general meeting:**

In line with Harmony's memorandum of incorporation, the following directors are required to retire on a three-year rotational cycle and, being eligible, offer themselves for re-election at the forthcoming annual general meeting of shareholders:

- Cathie Markus
- Karabo Nondumo
- Vishnu Pillay
- André Wilkens

For further information and their detailed resumés, see our Report to Shareholders 2016 at [www.har.co.za/16/download/HAR-RS16.pdf](http://www.har.co.za/16/download/HAR-RS16.pdf)

# EXECUTIVE MANAGEMENT

In addition to the three executive directors Peter Steenkamp, Frank Abbott and Mashego Mashego, who are on the board of directors, the following are members of our executive management.

 <p>Jaco Boshoff</p>	<p><b>EXECUTIVE: MINERAL RESOURCES AND EXPLORATION</b></p> <p><b>Jaco Boshoff (47)</b>  <i>BSc (Hons), MSc, MBA, Pr Sci Nat, MSAIMM, MGSSA</i></p> <p>Joined Harmony in 1996 and appointed to executive management in 2004</p> <p>Has been Harmony's designated competent person for statutory reserves and resources reporting since 2004</p>
 <p>Anton Buthelezi</p>	<p><b>EXECUTIVE: HUMAN RESOURCES</b></p> <p><b>Anton Buthelezi (52)</b>  <i>National diploma (Human Resources Management), BTech (Labour Relations Management), Advanced Diploma in Labour Law, Certificate in Business Leadership</i></p> <p>Rejoined Harmony in 2005 as human resources manager and appointed to executive management in 2011</p> <p>Participates in the Chamber of Mines' gold sector caucus</p>
 <p>Melanie Naidoo-Vermaak</p>	<p><b>EXECUTIVE: ENVIRONMENTAL MANAGEMENT</b></p> <p>Melanie Naidoo-Vermaak (42)  <i>BSc (Hons) (Industrial Microbiology), MSc (Sustainable Development), MBA</i></p> <p>Joined Harmony in 2009 as a member of executive management</p> <p>A member of the Chamber of Mines' environmental policy committee, the Far West Rand Dolomitic Water Association and Mining Industries Group</p>
 <p>Phillip Tobias</p>	<p><b>CHIEF OPERATING OFFICER: SAFETY, MINING PROJECTS, NEW DEVELOPMENT AND CORPORATE STRATEGY</b></p> <p>Phillip Tobias (46)  <b>BSc (Mining Engineering), Wits International Executive Development Programme and GIBS Advanced Management Programme, Professional Engineer (Pr Eng) and Mine Manager's Certificate of Competence</b></p> <p>Joined Harmony as regional general manager on 1 July 2014 and was appointed to current position in executive management in March 2016</p> <p>Appointed first black president of the Association of the Mine Managers of South Africa in 2008</p>

 <p>Marian van der Walt</p>	<p><b>EXECUTIVE: CORPORATE AND INVESTOR RELATIONS</b>  Marian van der Walt (43)  <b>BCom (Law), LLB, Higher Diploma in Tax, Diplomas in Corporate Governance and Insolvency Law, Certificates in Business Leadership</b></p> <p>Joined Harmony in 2003 as company secretary</p> <p>Joined executive management as Executive: Legal in 2005</p> <p>Appointed to current position in 2008</p> <p>Non-executive director of Rand Refinery (Pty) Ltd</p>
 <p>Johannes van Heerden</p>	<p><b>CHIEF EXECUTIVE OFFICER: SOUTH-EAST ASIA</b>  Johannes van Heerden (44)  <b>BCompt (Hons), CA(SA)</b></p> <p>Joined Harmony in 1998 and appointed chief executive officer of its south-east Asia operations in 2008</p>
 <p>Abre van Vuuren</p>	<p><b>EXECUTIVE: RISK MANAGEMENT AND SERVICES IMPROVEMENT</b>  Abre van Vuuren (56)  <b>BCom, Development Programme in Labour Relations, Management Development Programme, Advanced Labour Law Programme, Board Leadership Programme</b></p> <p>Joined Harmony in 1997 and held various positions in services and human resources</p> <p>Appointed to executive management in 2001</p>
 <p>Beyers Nel</p>	<p><b>CHIEF OPERATING OFFICER: SOUTH AFRICAN OPERATIONS</b>  Beyers Nel (39)  <b>BEng (Mining Engineering), MBA, Professional Engineer (Pr. Eng), Mine Manager's Certificate of Competency</b></p> <p>Joined Harmony on the merger with African Rainbow Minerals Gold in 2003 and appointed to current position in executive management in March 2016.</p> <p>Currently vice president of the Association of Mine Managers of South Africa</p>

## SENIOR MANAGEMENT WHO ATTEND EXECUTIVE COMMITTEE MEETINGS

 <p>Simphiwe Kubheka</p>	<p><b>REGIONAL GENERAL MANAGER:</b> (TSHEPONG AND PHAKISA)                  Simphiwe Kubheka (34)  <b>BSc (Eng) Mining Engineering, MBA, Mine manager's certificate of competency</b></p> <p>Joined Harmony as a general manager in January 2014 and appointed regional general manager in June 2016</p>
 <p>Moses Motlhageng</p>	<p><b>REGIONAL GENERAL MANAGER:</b> (DOORNKOP, KUSASALETHU, KALGOLD)                  Moses Motlhageng (41)  <b>B-Tech. (Mining), Mine Manager's Certificate of Competency, Professional Engineering Technician</b></p> <p>Joined Harmony in 2011 as a general manager and appointed regional general manager in June 2016</p>
 <p>James Mafura</p>	<p><b>REGIONAL GENERAL MANAGER:</b> (MASIMONG, JOEL, UNISEL AND BAMBANANI)                  James Mufara (42)  <b>BSc (Hons) (Mining), MBA, Mine Manager's Certificate of Competency</b></p> <p>Joined Harmony in 2011 as a general manager and appointed regional general manager in 2012</p>
 <p>Riana Bisschoff</p>	<p><b>GROUP COMPANY SECRETARY AND HEAD OF LEGAL</b>                  Riana Bisschoff (39)  <b>LLB, LLM</b></p> <p>Joined Harmony in 2012 as group company secretary</p> <p>Appointed head of legal in February 2016</p> <p>Is a qualified attorney, notary and conveyancer</p>

Full and detailed resumés of all members of Harmony's executive management are available at [www.harmony.co.za/about-us/management](http://www.harmony.co.za/about-us/management)



# OUR STRATEGY

Our primary strategic objective remains to create sustained value by producing safe, profitable ounces and by improving our margins. Cash generated will be used to advance our business objectives which are to:

- reduce our debt
- pay dividends to shareholders
- fund the development of Golpu in Papua New Guinea and make cash-generative acquisitions

Maintaining and increasing our margins are essential to sustaining our business and meeting our strategic and business objectives. This strategy is supported by three pillars – operational excellence, cash certainty and efficient capital allocation.

In line with our strategic objective, our medium-term aim is to increase gold production to approximately 1.5Moz by FY19 by:

- growing, nurturing and developing our core assets
- harvesting operations that are high cost and have a short life
- expanding in South Africa and Papua New Guinea as well as further into Africa
- assessing organic growth opportunities

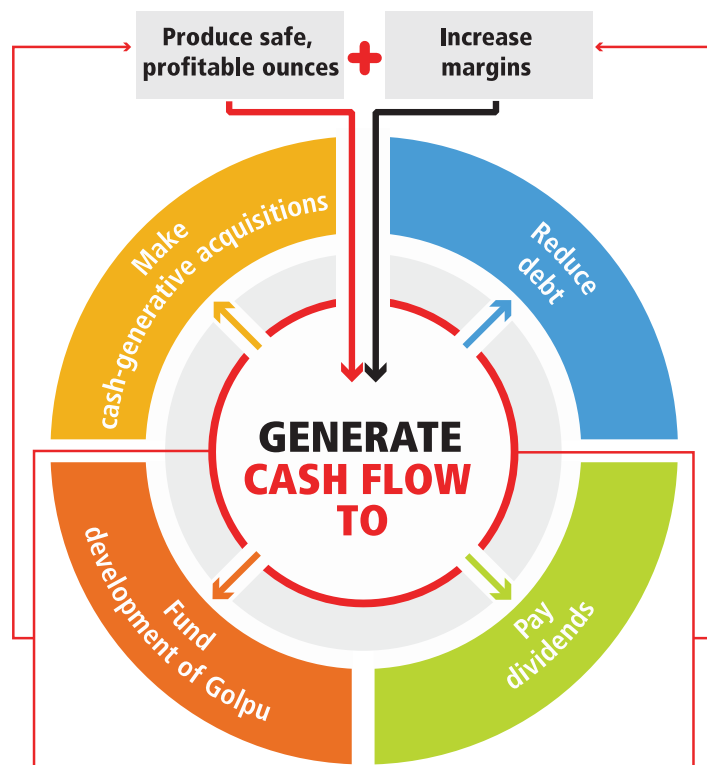
To this end, we remained focused on the safe mining of profitable ounces at all operations in FY16. As part of our planning for FY17, we have closed or placed on care and maintenance those sections of individual mines where costs and grades would render their exploitation unprofitable.

Through operational excellence and by adhering to our company values, applying mining discipline, further increasing our productivity, creating an enabling environment and applying grade cut-offs, we believe that our guidance for FY17 is realistic and achievable. These actions position our operations to produce safe, profitable ounces in future.

By mining profitably at all times we will ensure the financial strength and flexibility necessary to underpin our future sustainability and growth. This, in turn, is crucial to ensuring that we continue to serve all our stakeholders' best interests fairly.

Realistic planning supports our strategy to optimise assets – our ore bodies, our infrastructure and our people. This will ensure safer, more profitable production.

## Our strategy



# OUR BUSINESS CONTEXT

*Relevant Global Reporting Initiative indicators: G4-EC5*

At Harmony we understand that, as a business, we operate in a complex and ever-changing external environment – one that encompasses social, economic and environmental changes in the short, medium and long terms. At the same time, the business climate and context within our company are both dynamic and complex and, in many respects, are affected by the many changes in the external environment. We need to understand the external and internal environments as well as the relationships between the two to help us understand how we should position Harmony for success.

Identifying and understanding the factors that drive our internal and external business context require regular and consistent engagement with our stakeholders (see Material Issues and Stakeholder Engagement of this report).

This section should be read in conjunction with the section Managing our Risks and Opportunities.

## UNDERSTANDING OUR EXTERNAL ENVIRONMENT

The mining environment in South Africa has been particularly challenging in recent years. Most notable has been the public debate on mining's contribution to society and, since 2012, the nature of the labour relations environment. The industry and its stakeholders have sought as far as possible to minimise the negative impacts.

We continue to have a positive view on the strength of the gold price, with cash certainty being key in times of extreme market volatility. The currency hedge programme introduced in February 2016 and the gold hedge programme entered into post year-end, were necessary short-term steps to secure margins and to create certainty for a portion of our future cash flows. This cash flow will enable us to further reduce our debt and strengthen our balance sheet.

Our external environment also influences the perceptions of shareholders towards investing in South Africa and Papua New Guinea, to investing in gold and, ultimately, to investing in Harmony. We have identified the various risks and opportunities that the company faces in the section Managing Risks and Opportunities.

The average rand gold price received increased to R544 984/kg in FY16, from R449 570/kg in FY15, as a result of a 27% weakening in the rand against the US dollar in FY16 to an average of R14.50/US\$ (from R11.45/US\$ in FY15). During FY16, the US dollar gold price received decreased by 4% to US\$1 169/oz (US\$1 222/oz in FY15).

Many analysts were bearish on gold at the start of the 2016 calendar year, expecting interest rates in the United States to rise, signalling further downside in the gold price. However, this did not happen and gold has outperformed as the global economy has been characterised by softer growth, leading many central banks globally to decrease rates this year. The ongoing discussion of negative interest rate policy by the European Central Bank and the Bank of Japan in particular has boosted demand for gold. In local currency terms – the rand and the Australian dollar – the gold price has risen to new highs prompting some producers to take advantage of this and to implement hedging contracts.

It remains the responsibility of all role players to create an industry that will attract investment. Although there are increasing expectations and demands by external parties – communities, local governments, non-governmental organisations and others – on the mining sector, we recognise that Harmony has an important role to play as a corporate citizen. Consequently, all relationships with our stakeholders are important – we engage and listen before agreeing on mutually beneficial actions. We have sponsored a number of youth development programmes, created job opportunities, built housing for local communities and provided bursaries, to name just a few of our community investment projects. In addition, a final dividend was paid to shareholders for FY16 – thus ensuring that all of our stakeholders share in the success that Harmony enjoyed during the past year. Our combined focus remains to fully reflect the value of our company in our share price.

An important external factor, in South Africa and Papua New Guinea, with the potential to have an impact on our company and our activities is that of legislative changes and amendments. In South Africa, our engagements with all levels of government are both direct and also indirect while at a national level this is also conducted through the Chamber of Mines of South Africa. We endeavour to maintain healthy relations with the regulators through regular, honest engagement and to provide input regarding pending legislation through the forums available such as the Chamber.

Sufficient, reliable supplies of water and electricity are essential to the safe, efficient conduct of our mining operations. Water is a scarce resource in South Africa, and supply was further constrained by the drought last summer. We have been implementing various measures to improve efficiency of use and have been proactively reducing water consumption by recycling (see Environmental Performance section of this report). In addition, we have provided potable water to water-stressed communities in both South Africa and Papua New Guinea.

In 2014, Harmony joined several of its peers in the gold mining sector in South Africa to establish the Gold Industry Working Group on Occupational Lung Disease to seek a sustainable, fair and comprehensive solution in dealing with this disease in the sector. Much work has been done in the past year to address the backlog in claims and ensure all eligible former employees receive the compensation they are entitled to timeously.

As an industry, we have taken steps to transfer all current and former miners from the Occupational Diseases in Mines and Works Act to the Compensation for Occupational Injuries and Diseases Act, which is better administered and has superior benefits. This is part of a broader initiative by government to review and unify South Africa's compensation systems. A legacy fund is to be established to enable 'top-up' payments to claimants, while safeguarding the industry against civil claims. Work on a legacy fund continues in the wider context of the silicosis class action which got underway in October 2015 and which is being defended by the members of the Working Group.

## UNDERSTANDING OUR INTERNAL ENVIRONMENT

The most important aspects of our internal environment remain the safety and well-being of our employees, and the integrity and sustainability of our assets. Our internal environment is therefore shaped largely by factors which affect our employees or on which our employees have an impact. The environment and mining processes, combined with the behaviour of people, bring with them certain risks to our employees, which we aim to avoid, mitigate or manage. While we have seen significant improvements in our safety performance in recent years, we remain committed to further improvement, which is why keeping our employees safe and healthy is highlighted in our risks and is one of our material issues.

Occupational health risks are not the only health risks we work to mitigate – in South Africa our employees are at risk of contracting HIV/AIDS and tuberculosis, both of which are highly prevalent in our society, and we have put in place various initiatives to treat and prevent these illnesses. See the Safety and Health section of this report.

At Harmony we believe that our employees should be able to improve their lives through their work. As a result we offer extensive training and development programmes, including adult education and training, portable-skills training and on-the-job training. In addition, we invest in community education programmes to ensure that quality education is available at a young age and that promising students are given the tools to thrive, see the Employees and Communities section of this report.

We acknowledge the imbalance caused by historical systems in South Africa and work to remedy this through a recruitment policy that focuses on employing historically disadvantaged South Africans at all levels of the company, from the board through to entry-level employees. Harmony is committed to black economic empowerment in South Africa, through direct equity ownership, our procurement spend, management representation and through our employee share ownership scheme, which allows employees to share in the company's success. We have also put considerable time and effort into developing a successful women-in-mining project, which has seen many women find fulfilment in their underground roles. For further information on transformation, see the sections entitled Employees and Communities and Mining Charter Scorecard Compliance sections of this report.

By understanding what we need to do to help our employees feel safe and satisfied at work and by implementing various initiatives to achieve this and maintain open communication with them, we manage many of the factors that have an impact on our internal environment. Our emphasis on open communication also allows us to understand any emerging issues that may influence our efforts and gives us time to deal with them before they escalate.

The organisational restructuring implemented in the past year is aimed at improving internal efficiencies so as to ensure that we achieve our operational objectives and the mining of safe profitable ounces. Two chief operating officers have been appointed to support the chief executive officer – one to oversee operations and the other to oversee safety, organisational strategy and projects – and they in turn are supported by three regional general managers.

# MANAGING OUR RISKS AND OPPORTUNITIES

## WHY THIS IS MATERIAL TO HARMONY

In identifying and understanding the risks and opportunities facing our business, we are better able to mitigate and/or manage them and thereby position the company to take advantage of any opportunities, future challenges and growth prospects.

## OUR APPROACH TO RISK MANAGEMENT

At Harmony, our approach to risk relies on the continual monitoring of risk and related mitigation procedures and when appropriate, their revision. Our risk management strategy strives to be practical and effective, rather than to focus solely on compliance. Risk management is embedded within our day-to-day activities and processes.

### **Our risk management process**

The management of risk is guided by specific regulatory and legislative requirements, and is championed internally by our chief executive officer. While management is responsible for implementation and compliance, the audit and risk committee is responsible for oversight of the process, its adequacy and effectiveness. Reporting on risk-related performance is marked for the attention of the various board sub-committees.

Because relationships underpin everything we do, our risk management process is based on engagement – between management and the board, and between the company and various stakeholders – to ensure that we address risks appropriately.

Risk management has as its starting point the group's strategy. It is important to understand those factors that have the potential to hinder our ability to deliver on our strategy, as well as to identify those opportunities that will enable us to achieve our goals. We benchmark the risks and opportunities identified against those of our peers to ensure that the risks we identify are not only specific to Harmony but also include those facing the industry.

In preparing their formal reports to the board, the executive committee and the audit and risk committee meet quarterly to examine the risks and discuss any changes in their relative importance or in their mitigation. The audit and risk committee's review is supplemented by feedback from the various board sub-committees and reviews of specific risks falling within the ambit of their responsibilities.

Each quarterly examination is based on experiences at the operations, feedback from key stakeholders, external factors and management meetings. In addition, various teams within the company address risk on a regular basis as part of their day-to-day roles. This creates an ongoing conversation about risk at different levels, allowing any changes to be captured on a continuing basis.

While risk management is included in our day-to-day processes, formal weekly risk reviews are undertaken by management teams at the operations, to identify and prioritise specific high-risk issues at an operational level. These operational and safety risk reviews are reported to the respective regional general managers with additional oversight by the operations' committees.

### **Roles of the board and audit and risk committee**

Risk is a standard item on the agenda at audit and risk committee meetings and the committee's role in our risk management process is multi-dimensional. The committee's primary task is to identify, prioritise, manage and monitor strategic enterprise risks at Harmony, while operational and safety specific risks are monitored by the technical committee of the board. Our risk management process reflects our integrated approach to business and the audit and risk committee – supported by various board sub-committees – examines all risks affecting our strategy.

To do this, the committee spends considerable time reviewing and evaluating the processes in place to identify, monitor and manage risk. These include our risk management policy, methodology and planning, formal risk assessment, internal controls and assurance processes, our risk appetite and tolerance and our responses to the risks identified. Once the audit and risk committee is satisfied with these, responsibility for their implementation devolves to executive management and their teams. In turn, their task is to ensure that these risk processes are constantly applied in day-to-day activities.

Based on these reviews, the audit and risk committee submits its findings to the board. The top strategic, operational and safety-specific risks and mitigating factors are reported to the board on a quarterly basis.

### OUR ACTIONS IN FY16

During FY16, we formulated group-level risk appetite and tolerance levels, and continued to monitor our risks to identify and manage those that were most material to the company.

While our group-level risk appetite and tolerance levels are subject to formal annual reviews, these are continually monitored for relevance in terms of changing macro-environment factors. Our tolerance levels are further defined at lower tolerance limits per risk.

### OUR RISKS AND OPPORTUNITIES

Various risk factors contain an element of volatility, for example, commodity prices and exchange rates, labour dynamics and the regulatory environment. As a result, our risk profile reflects industry dynamics and Harmony-specific issues and opportunities at a particular time.

The following two graphs and the table on the following pages show our top strategic risks and opportunities.

Our risk profile is based on potential events and/or factors that pose either a threat and/or an opportunity. These downside and upside risk factors are duly taken into account in our day-to-day business activities and, having been identified, are integral to the formulation and management of our group strategy.

#### **Our group-level risk appetite statement**

Harmony is in the business of gold mining in South Africa and Papua New Guinea, which is a high-risk, high-reward business. We are involved in the entire gold mining value chain – from exploring for prospects, conducting feasibility studies and building, buying and operating mines to closing and rehabilitating mines at the end of their lives.

In the course of conducting our business, we are exposed to the volatility of the gold price and exchange rates and where appropriate will mitigate some of this exposure through hedging programmes. We operate well in emerging economies and have the ability to deal with the socio-political dispensations in these countries.

Exploration remains one of the most effective ways to grow an ore body and to create value, and for this reason we continue to invest in exploration.

We have an appetite for change and continuous improvement and are constantly looking for innovative ways to improve our existing mines and acquire mines that we can improve on operationally.

Deep-level gold mining in South Africa is very labour intensive and we have the skills to deal with the challenges of multi-stakeholder labour relations. We continuously improve the health and safety of our employees.

We have experienced teams with strong values and we are committed to deliver.

*For more detailed information pertaining to risk factors and their potential impact see the Form 20-F as filed with the United States' Securities Exchange Commission.*

# MATERIAL ISSUES AND STAKEHOLDER ENGAGEMENT

The process to determine our material issues derives from our risk management process and stakeholder engagement. Combined with the Global Reporting Initiative's materiality assessment, we conduct a gap analysis and benchmark against our peers to determine our key material indicators. We consider those indicators that are most closely related to our values and strategy. From this process, we have derived the following five material issues, which encompass most of our key risks and address our values, which are safety, accountable, achievement, connected and honesty.

## OUR APPROACH TO STAKEHOLDER ENGAGEMENT

Our stakeholder engagement complies with relevant legislation and standards, including ISO 14001, OHSAS 18001 and ISO 9000. Using our stakeholder engagement policy and strategy we identify various stakeholders, internal and external, across our business process.

Given our many stakeholders, priority is given to those who are most likely to have the greatest impact on Harmony in terms of our achieving our strategic objectives and our business performance.

The primary aim of our stakeholder engagement is to share and gather information to inform our business decisions. This two-way communication is guided by our values and our strategic intent:

- To improve the lives of host communities/stakeholders through appropriate programmes or projects
- To find solutions to the various challenges facing our society and host communities, including unemployment and lack of economic activity, by collaborating with stakeholders and forming meaningful partnerships
- To find a balance between the expectations of shareholders and those of other stakeholders

Our engagement with stakeholders is inclusive, so that it is:

- Meaningful, and addresses what is material to stakeholders
- Complete, so that we understand the views, needs, perceptions and expectations linked to issues that stakeholders view as material
- Responsive, so that we respond to material issues timeously, coherently and appropriately

Stakeholder engagement is integral to our business and shapes our actions in determining strategy, addressing problems, and allocating resources. Effective stakeholder engagement helps us better manage risks, opportunities, and enhances the company's reputation, which is essential to the long-term sustainability of Harmony. Furthermore, effective, meaningful stakeholder engagement contributes to our store of knowledge as a company and provides information which leads to improved decision-making processes. The board's social and ethics committee oversees stakeholder relations, while the board itself monitors relations with stakeholders.

## WHY THIS IS MATERIAL TO HARMONY

To be a profitable, responsible and sustainable business, mutually beneficial and sustainable relationships with various stakeholders are vital to the success of our business strategy, especially in relation to our material issues. Given that our material issues are informed by stakeholder engagement, it is important to understand and meet our stakeholders' needs and expectations where possible. We engage with numerous stakeholders – individuals and organisations – on an ongoing basis.

## Continuous engagement with our stakeholders



## MATERIAL ISSUES AND THEIR IMPACTS

### 1. Keeping our people safe and healthy

People are central to our business. While we have made significant progress in recent years in improving safety and health underground, safety remains a priority.

We continue our proactive people-centric approach, focusing on training and communication to entrench safe behaviour in the workplace. We understand the need to make additional safety advances by applying new technology and/or advancing protective equipment.

Our employees also face occupational health risks from working underground. We address all operational health risks and offer treatment for a variety of other health concerns. We believe that prevention is better than cure and offer proactive, integrated and holistic health strategy and programmes. Our aim is to ensure our employees return home safely and in good health. For more, see the Safety and Health section of this report.

**Related key risks and/or opportunities:** safety; potential liability for occupational health diseases; not achieving our operational objectives; labour disputes and unrest and inter-union rivalry; new technology

#### Our response

- Promoting engagement aimed at enhancing safety in the workplace and employee health
- Implementing proactive safety awareness campaigns aimed at improving safety performance
- Implementing healthcare programme – health hubs

See the Safety and Health section of this report

#### Stakeholders

- Employees and contractors
- Labour unions
- Regulators
- Shareholders
- Analysts



## 2. Achieving our business objectives

While success in achieving our business objectives drives what we do, we are not solely focused on short-term success. As explained in the section Our Strategy, our aim is to create a viable business for years to come. As a result, we also consider our future objectives, such as using technology and innovation, diversifying our resource base, and ensuring we have projects in place to sustain and grow our production.

**Related key risks and/or opportunities:** safety; reserve base depletion/growing for future ounces; not achieving our operational objectives; labour disputes and unrest and inter-union rivalry; socio-economic, political and regulatory changes; major infrastructure incidents; reliability of power supply and associated costs; strategic consideration of options for Hidden Valley; potential liability for occupational health diseases; gold price and foreign exchange fluctuations; productivity improvements; new technology

### Our response

- Communicating progress made in achieving our objectives and on impacts of changes in the gold price and the rand/US dollar exchange rate
- Implementing initiatives to reduce and contain costs
- Engaging with suppliers to ensure cost increases are contained and reasonable
- Liaison with the Papua New Guinea government around Golpu, and application for the special mining lease and related approvals and permits

This is discussed throughout this report, and in particular, in the Chief Executive Officer's Review and Operational Performance sections of this report.

### Stakeholders

- Shareholders, investors
- Providers of capital
- Analysts
- Media
- Employees and unions
- Business partners
- Suppliers

## 3. Maintaining stability in our workforce

Amid a potentially fractious industrial relations environment in the South African mining industry, we focus on having positive and open relationships with our employees and labour unions. By fostering conversation, we understand and are able to address grievances before industrial action. The benefits of a stable industrial relations climate are extensive. We want to create workplaces where employees feel safe, respected and valued. A stable workforce contributes to our aim of meeting our business objectives, as it results in lower employee turnover and stabilises production. The benefits of this are shared with employees through production bonuses, reward and recognition programmes and the employee share ownership scheme. For more on these, see Remuneration Report.

**Related key risks and/or opportunities:** safety; labour disputes and unrest, and inter-union rivalry; not achieving our operational objectives; major infrastructure incidents; productivity improvements; new technology

### **Our response**

- Proactive, regular engagement based on openness, honesty and integrity
- Constructive engagement to facilitate understanding of issues and concerns of both sides
- Commitment to resolving the issues and addressing concerns

See the Employees and Communities section of this report

### **Stakeholders**

- Employees and contractors
- Labour unions
- Chamber of Mines
- Shareholders, investors
- Analysts
- Media

## **4. Protecting our licence to operate**

To be a successful company, we must earn and retain our right to mine. This requires a clear understanding of local legislation and regulations, as well as having solid relations with government, communities, industry bodies and local business partners. We seek more than compliance: we will transform our workforce, ensure good corporate governance, and be a responsible corporate citizen. For more on this, see Mining Charter Compliance Scorecard.

**Related key risks and/or opportunities:** safety; socio-economic, political and regulatory changes; major infrastructure incidents; potential liability for occupational health diseases

### **Our response**

- Proactive engagement on the state of our business and potential restructuring and possible impacts of the latter
- Proactively engaging to promote alignment of expectations and to understand communities' needs to enable us to make a positive, sustainable contribution
- Communication on compliance targets achieved and challenges being encountered, particularly those relating to housing
- Engaged on proposed amendments to the Mining Charter and the Mineral and Petroleum Resources Development Act
- Participated in the Mining Phakisa, a collaborative engagement between government and the mining industry on the industry's future
- Engaged with suppliers to ensure that their processes are aligned with our human rights and environmental standards, code of conduct and empowerment requirements

See the Employees and Communities section of this report

### **Stakeholders**

- Government and regulators (in particular the Parliamentary Portfolio Committee on Mineral Resources)
- Various government departments (national and regional)
- Communities and local municipalities
- Chamber of Mines
- Labour unions
- Media
- Suppliers

## 5. Managing our impacts

The resources available to our business are finite and we respect this. We are environmentally responsible through careful monitoring of our consumption, emissions and impact. Our commitment to improving health and safety speaks to our need to protect human resources, while our training and development programmes highlight how we encourage each employee to learn and grow their skills. Responsible resource management is also crucial to our socio-environmental rehabilitation planning. While our mines are operational, we want to do all we can to improve the living conditions of employees and communities, and to bolster both socio-economic and ecological developments, so that when our mines close we will leave behind us viable communities able to support their economies and which are not plagued by environmental or health issues. This entails planning now, ahead of mine closure, and is something we are constructively working towards. For more on our skills training and rehabilitation initiatives see the section, Employees and Communities of this report.

**Related key risks and/or opportunities:** safety; socio-economic, political and regulatory changes; major infrastructure incidents; strategic consideration of Hidden Valley options; potential liability for occupational health diseases; new technology

### Our response

- Developing and implementing initiatives to empower local communities to ensure sustainable economic activity once mining has ceased
- Inclusive engagement relating to land rehabilitation in the Free State and the creation of sustainable of economic activities independent of mining

See the Safety and Health, Employees and Communities and Environmental Performance sections of this report

### Stakeholders

- Provincial government and district and local municipalities
- Communities
- Local business partners
- Shareholders
- Media
- Employees and unions

# SAFETY AND HEALTH

Achievements FY16	Challenges FY16
<ul style="list-style-type: none"> <li>• The South African operations' lost-time injury and reportable injury frequency rates improved by 32% and 21% respectively year-on-year</li> <li>• Proactive, preventative model of healthcare service delivery continued to yield benefits, with decreased absenteeism, hospitalisation and medical mortality</li> <li>• Health-related absenteeism reduced by 11%.</li> <li>• Number of employees confirming their HIV/AIDS status increased from 41% to 73%</li> <li>• TB incidence rate down by 19% year-on-year</li> <li>• Actively involved with certification process to address backlogs and assist the mining industry in quantifying the silicosis risk</li> </ul>	<ul style="list-style-type: none"> <li>• Prevention of fall-of-ground and rail-bound equipment injuries remain a challenge</li> <li>• Behavioural breaches of safety standards are also a concern</li> <li>• Unhealthy behaviour and lifestyles which predispose employees to chronic and lifestyle diseases</li> <li>• Despite declines, the TB incidence rate remains unacceptably high in comparison with World Health Organisation standards and remains one of our top five health risks</li> <li>• Effective HIV/AIDS management remains a challenge, despite our deep understanding of the associated risks</li> </ul>

## RELEVANT MATERIAL ISSUES

- Keeping our people safe and healthy
- Protecting our licence to operate

At Harmony, the safety and health of our employees and contractors is a moral imperative and essential to creating a sustainable business. Safety is our number one value. Without a safe and healthy workforce, we cannot be productive and profitable. We aim to eliminate and prevent all fatalities and work-related injuries and illnesses by promoting a culture that values safety and health.

## LINKS TO RISK



## OUR APPROACH

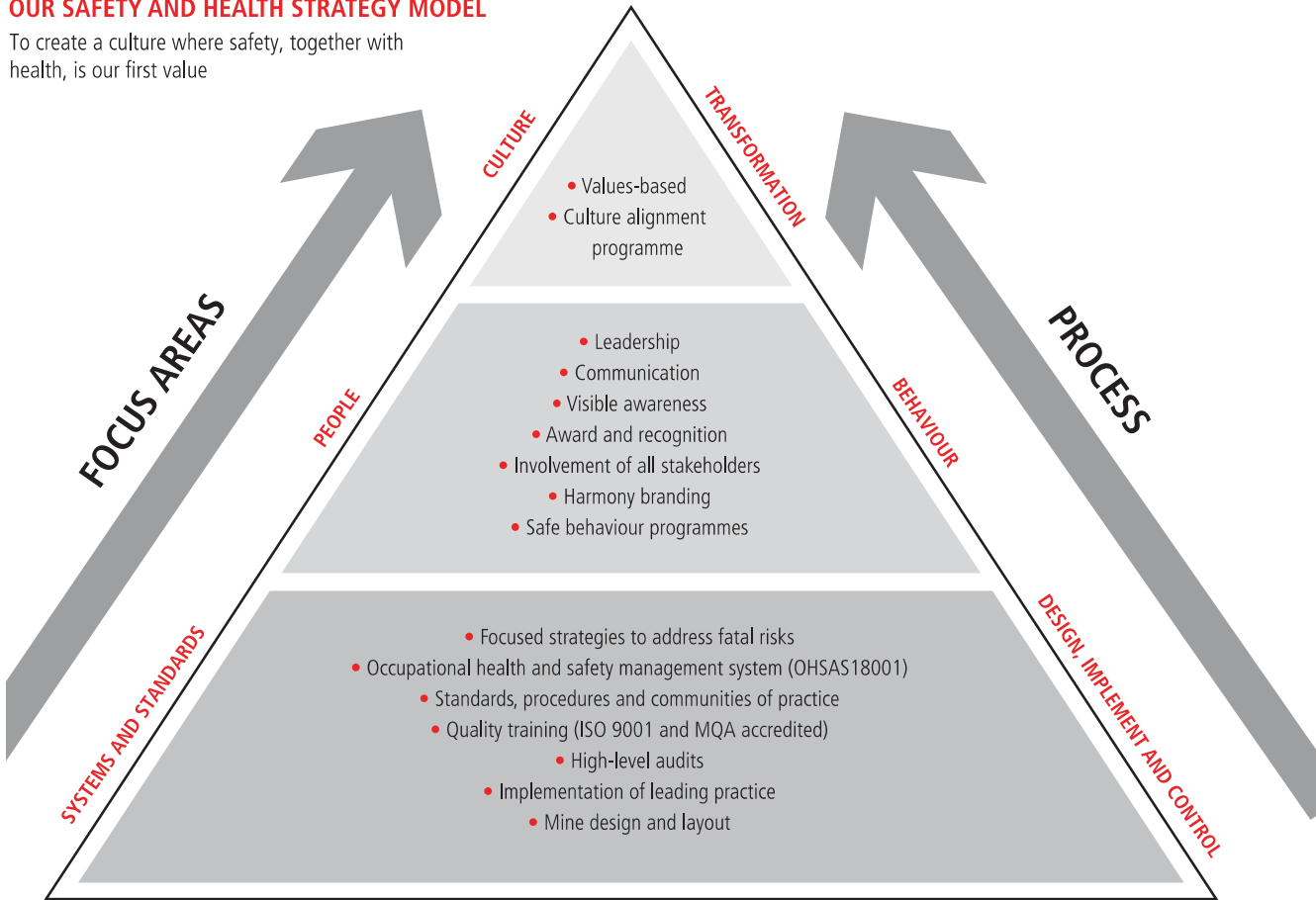
Both our occupational safety and health policy and management framework are aligned with the Mine Health and Safety Act in South Africa and mine safety and health legislation in Papua New Guinea. Representatives from all levels of management, union and government are encouraged to participate actively in our safety and health framework. The relevant strategy is guided by our safety and health policy.

Safety and health committees at all operations ensure the active participation of all employees in safety management. Safety and health are also agenda items at all union and management engagements. There are currently 30 full-time safety and health stewards at our South African operations (FY15: 34).

The technical committee, on behalf of the board, is responsible for approving and monitoring compliance with our safety and health policy. The social and ethics committee oversees public safety on behalf of the board. Safety performance, a key performance indicator for management, is monitored to determine remuneration in terms of the safety-related bonuses paid.

### OUR SAFETY AND HEALTH STRATEGY MODEL

To create a culture where safety, together with health, is our first value



## SAFETY

### SAFETY STRATEGY – SOUTH AFRICA AND PAPUA NEW GUINEA

To achieve our goal of zero harm, continual improvement in our safety performance is required. A co-operative approach to safety ensures that the necessary infrastructure and systems are in place; from planning to communication and training. While management has legal responsibility for safety, management and employees have joint responsibility for their actions, to stop work when they believe that a workplace is unsafe and/or to prevent others from acting in an unsafe manner. Constant reinforcement of safe behaviour in the workplace is overseen by line managers and supervisors. Operations have introduced site-specific safe behaviour initiatives as well as behaviour re-enforcement programmes. Our safety strategy can be divided into three categories – short, medium and long term.

The **short-term safety strategy** comprises:

- risk assessments
- visible felt leadership in which management is actively seen to be involved in enhancing workplace safety
- proactive, regular and frequent communication at all levels of the company, including mass meetings, to promote safety awareness
- regular, weekly and monthly formal safety reviews to operational and regional managers. The Pivot safety system is used to analyse safety data and trends, enabling more informed decision making and quicker, more proactive responses to exposures and risks

The **medium-term safety strategy** involves the implementation of the fatal risk management system. Eight fatal risks – falls of ground, underground tramming, electricity, working at heights, winches, mud-rush and inundation, fire prevention and explosives – have been identified, for which fatal risk standards with measurable critical controls have been compiled. Roll-out of the standards which were finalised and signed off in July 2015, began in August 2015. Introductory meetings to explain the fatal risk management process and to establish steering committees to ensure and oversee the implementation of the standards have been completed at all operations. Standards training for all management teams and line supervisors down to team leader level was completed during the year as was that for all safety trainers. These trainers will play a key role in the roll out of the fatal risk management standards to the applicable employees at the work face.

Our **long-term safety strategy** focuses on the implementation of industry-leading safety practices and principles.

Safety performance at our Papua New Guinea operations is monitored by Harmony's South-East Asia team. Safety managers at the Papua New Guinea operations report to Harmony's South-East Asia executive committee through regular notifications, formal monthly reports, and meetings. This committee in turn reports to Harmony's technical committee and the board.

## SAFETY PERFORMANCE IN FY16

### **Relevant Global Reporting Initiative indicators: G4-LA5, G4-LA6 and G4-LA8**

Harmony's reporting on its safety performance is aligned with the reporting standards prescribed by the International Council on Mining and Metals.

Regrettably there were nine fatalities during the year at our South African operations (FY15: eight) and one fatality at our Papua New Guinea operation (FY15: 1).

In memoriam				
Date	Operation	Name	Occupation	Cause
18 July 2015	Hidden Valley	Piwas Kesa	Driver	Truck incident
25 July 2015	Target 1	Pheelo William Ramohlokoane	Security officer	Smoke inhalation
3 August 2015	Kusasalet hu	Ezekiel Nonkevu	Tramming supervisor	Trucks, tramming and transport
6 August 2015	Joel	Cancel Nurse Malungane	Engineering assistant	Rail-bound equipment
15 November 2015	Masimong	Carlos Siteo	Stoper	Gravity related fall of ground
9 December 2015	Target 1	Moeketsi Mongoako	Rock drill operator	Seismicity-related fall of ground
29 January 2016	Masimong	Motlatsi Samuel Lehana	Scraper winch operator	Gravity-related fall of ground
11 April 2016	Kusasalet hu	Patuxolo Butshula	Water jet operator	Seismicity-related fall of ground
11 April 2016	Phakisa	Mncedisi Mbongwa	Rock drill operator	Gravity-related fall of ground
18 June 2016	Phakisa	Clinton Lewis Titmuss	Rigger	Trucks, tramming and transport

## Fatalities

	FY16	FY15	FY14	FY13	FY12
South Africa	9	8	22	9	10
Papua New Guinea	1	1	–	–	–
<b>Group total</b>	<b>10</b>	<b>9</b>	<b>22</b>	<b>9</b>	<b>10</b>

Harmony provides the families of the deceased with counselling and financial assistance. A fund was established in FY14 to support the educational needs of the school-going dependants of all Harmony employees and contractors who lose their lives in the workplace.

While the fatal injury frequency rate for our South African operations regressed by 18% for FY16 (see table below) that for the Papua New Guinea operation increased marginally to 0.17 (FY15: 0.14). The lost-time injury frequency rate for the South African operations improved by 32%, and that for the Papua New Guinea operation deteriorated to 1.39 (FY15: 0.28). In all, 22 416 shifts were lost due to occupational injury in South Africa (FY15: 24 514) and 127 in Papua New Guinea (FY15: 145).

Fatal injury frequency rate (per million hours worked)					
	FY16	FY15	FY14	FY13	FY12
South Africa	0.13	0.11	0.28	0.11	0.12
Papua New Guinea	0.17	0.14	0.00	0.00	0.00
<b>Group total</b>	<b>0.13</b>	<b>0.11</b>	<b>0.26</b>	<b>0.10</b>	<b>0.11</b>

Lost-time injury frequency rate (per million hours worked)					
	FY16	FY15	FY14	FY13	FY12
South Africa	6.50	9.57	8.09	6.03	7.54
Papua New Guinea	1.39	0.28	0.00	0.12	0.45
<b>Group total</b>	<b>6.23</b>	<b>9.24</b>	<b>7.54</b>	<b>5.46</b>	<b>6.86</b>

## South Africa

In South Africa, the measures in place to ensure that safety remains our first value are:

- Management coaches employees on how to work safely. These conversations are shaped by messages agreed by management in consultation with the unions, safety structures/representatives
- External safety initiatives or leading practices in the mining industry are reviewed and implemented through the Mining Occupational Safety and Health (MOSH), Community of Practice Adoption process (COPA). 'Champions' are nominated for each aspect of occupational safety and health. They attend all industry meetings and ensure that all relevant information is disseminated to the operations
- Phillip Tobias, a former regional general manager, was appointed chief operating officer with specific responsibility for, among other aspects, safety. A part of his remit, he visits different mining houses and companies to investigate best practice in safety and health strategies and structures. He will be responsible for adopting and implementing world best practice in health and safety strategies at Harmony
- A formal visible felt safety leadership coaching programme was rolled out to managers and superintendents to optimise safety engagement with subordinates to drive positive changes in behaviours

- Comprehensive safety reports allow us to track incidents, measure safety performance and report back to mines on performance. The Pivot safety management system is used at all South African operations as a management tool to improve safety. Data sourced from all workplace inspections by safety officers are recorded on the system and statistics are captured daily. The deliverables for the safety, health, environment, risk and quality Intranet Portal (SharePoint) document control management system, which includes a document centre, document review and approval workflow automation, was completed during the latter part of the year. Training of all applicable users is in progress
- Safety roles and accountabilities are clearly defined and used to measure team performance
- All employees are trained and encouraged to conduct pre-work risk assessments before any work is done. The relevant committees ensure that company standards on mining and engineering work are reviewed periodically, compiled, approved and distributed to operations for implementation

The number of section 54/55 instructions decreased to 182 (FY15: 229). Production lost during FY16 as a result of such instructions totalled 202.9kg (7 157oz) (FY15: 588kg; 18 904oz).

Year-on-year, the fall-of-ground injury frequency rate regressed by 30% to 1.64 (FY15: 1.26). There were three gravity- and two seismic-related fall-of-ground fatalities in FY16 (FY15: three gravity-related fatalities and no fall-of-ground fatalities).

<b>Fall-of-ground injury frequency rate</b>					
Per million hours worked	FY16	FY15	FY14	FY13	FY12
South Africa	1.64	1.26	1.53	1.29	2.22

### Safety achievements in FY16:

<b>Fatality-free performance</b>		<b>Significant lost-time and reportable injury free performance</b>	
More than three million shifts	Target 1 (rail-bound equipment) <sup>1</sup> Phakisa (rail-bound equipment) <sup>2</sup> Randfontein surface operations <sup>3</sup>	More than three years	Joel plant <sup>7</sup> Phoenix plant <sup>4</sup> Target plant <sup>5</sup>
Three million shifts	Metallurgy; Kalgold (plant and pit) – achieved over 19 years Unisel (fall-of-ground) Surface operations (South Africa)	One-year	Asset Management Forum Central plant <sup>8</sup> Harmony Laboratory Harmony One plant Kalgold (pit and plant) <sup>6</sup> Surface Sources
Two million shifts	Doornkop (rail-bound equipment) Phakisa (including fall-of-ground) Joel (fall-of-ground) Tshepong (including fall-of-ground and rail-bound equipment) Unisel (rail-bound equipment)		
One million shifts	Masimong (fall-of-ground) Doornkop (including fall-of-ground) Kusasaletu (fall-of-ground and rail-bound equipment)		
<sup>1</sup> 7 million fatality-free shifts on rail-bound equipment		<sup>5</sup> 6 years free of reportable injuries	
<sup>2</sup> 6 million fatality-free shifts on rail-bound equipment		<sup>6</sup> 1 year free of lost-time and reportable injuries	
<sup>3</sup> 5 million fatality-free shifts		<sup>7</sup> 5 years free of lost-time and reportable injuries	
<sup>4</sup> 9 years free of reportable injuries		<sup>8</sup> 3 years free of lost-time and reportable injuries	



## Papua New Guinea

In Papua New Guinea, measures are also in place to ensure that safety remains our first value. Critical control implementation and verification were implemented for all high-risk (potentially fatal) activities. Work menus, capturing the relevant critical controls, were developed for high-risk activities and rolled out through a training programme. To ensure the correct critical controls are implemented for these high-risk activities, an activity-specific verification process through formalised audits was implemented.

The mountainous terrain, high rainfall and quickly changing weather conditions in Papua New Guinea which contribute to landslides and/or slope failures make aviation and vehicle use much riskier activities.

Work undertaken during the year to mitigate the risk of vehicle-related incidents included:

- installation of on-board cameras to monitor driver behaviour for corrective training
- vehicle-specific emergency braking procedure training for all drivers
- manned mandatory stops for all trucks to verify permits and licences prior to entering mine lease areas and prior to certain hazardous declines

Natural landslides are relatively common and together with potential man-made landslides (slope failures associated with open-pit mining) pose a significant safety risk to our operations in Papua New Guinea. During the year, real-time slope stability radar monitoring systems were operational at both open pits and the failures were well managed throughout the year.

Specific geotechnical risk assessments are undertaken for all work sites in Papua New Guinea and associated mitigation plans are updated at least annually.

## PUBLIC SAFETY

Following the methane explosion at the Brand1A ventilation shaft in Welkom in FY15, Harmony has repaired all damages to houses and properties at a total cost of R35 million. There are no outstanding claims.

During FY16, three community members lost their lives as a result of trespassing on hazardous mine sites at our Free States operations. Various interventions to prevent any recurrence were added to our existing public safety awareness programmes.

## SAFETY OBJECTIVES FOR FY17

Our focus remains on achieving zero fatalities and realizing zero harm to our employees. The safety targets for FY17 have been set with the Mine Health and Safety Council milestone figures in mind. Consequently, our objective for the year is to improve the serious injury rate (reportable accidents) by 20% year-on-year. We are aiming for a year-on-year improvement in the total accident and injury frequency rates at the South African operations.

We will continue with our strategy to improve leadership and employees behaviour and safety messaging to affect a long-term shift in thinking and behaviour in terms of safety.

# HEALTH

## HEALTH STRATEGY

*Relevant Global Reporting Initiative indicators: G4-LA7 and G4-LA2*

### South Africa

Harmony's proactive healthcare strategy focuses on employee well-being, with the main goal of ensuring that our employees are fit for life, which implies that they will be fit for work and retire healthy. This strategy aims to prevent illness and/or early identification of disease, through medical surveillance, active case finding, early detection and treatment as part of an integrated management healthcare system. We aim to take this strategy to the next level where we will review and build employee's resilience to any illness.

The Harmony healthcare programme provides primary, secondary and tertiary healthcare as well as occupational health services to all employees, through company-managed healthcare facilities and medical aid membership, as well as by means of external healthcare providers. Comprehensive health services continue to be provided in close proximity to the mine.

The lag in the certification process of occupational lung diseases by the Medical Bureau of Occupational Diseases remains a major challenge in the mining industry and for the Department of Health. However, the mining industry continues to collaborate with the department to find a sustainable solution. Harmony and several of its peers in the industry have committed medical doctors to assist in reducing the certification backlog at the Medical Bureau of Occupational Diseases. A total of about 5 000 cases have since been finalised.

The TB incidence rate at our South African operations remains alarmingly high compared with the World Health Organisation and national benchmark. In view of these current challenges, our new approach takes into account the multi-factorial aspects of TB management, which addresses both occupational and socio-economic determinants of the disease.

Motivating employees to confirm their HIV status, despite perceived stigma and confidentiality issues, remains one of the biggest challenges. Positive behaviour programme remains pivotal in addressing this challenge.

The "At work" management programme continues to yield good results by contributing to more people being at work. For the past year, more than 7 447 individual medical cases were reviewed by a team of healthcare professionals. The aim of this programme is to identify potentially chronically ill employees early, and to review and monitor their medical conditions.

Harmony's health team had several opportunities to showcase our proactive healthcare delivery model. The Deputy Minister of the Department of Mineral Resources visited Kusasaletu's health hub and delegates from the United Nations AIDS conference visited Doornkop.

### Papua New Guinea

In Papua New Guinea, the provision of full-time primary healthcare and occupational health surveillance to employees, dependants and the local community is provided by medical centres at Hidden Valley, Wafi and Wau.

Upper respiratory tract infections remain one of Harmony's main medical issues in Papua New Guinea with nearly 2 438 presentations to the medical centres. An integrated business information system provides an administrative function for health. Medical registers are used to track and review each patient's progress from the first visit through to the final treatment.

A total of 13 131 health examinations took place at the Morobe Mining Joint Ventures' medical centres during FY16 (FY15: 13 715), of which 3 508 (FY15: 3 467) were random drug and alcohol tests.

## HEALTH PERFORMANCE IN FY16

### Healthcare delivery

In South Africa, membership of a medical scheme is compulsory for all Category 9(+) employees and is voluntary for Category 4 – 8 employees. Approximately 6 742 employees participated in medical schemes in FY16 (FY15: 6 700), with Harmony subsidising these costs by an amount of R12 million (US\$0.8 million) per month (FY15: R11 million or US\$0.9 million per month).

In all, 20 276 Category 4 – 8 employees have so far elected not to join a medical scheme. Instead they receive comprehensive health services from mine medical facilities and associated preferred providers at no cost to the employee.

Harmony undertakes active case-finding and screening as well as active disease management in respect of chronic conditions for employees who are not members of a medical scheme. In FY16, 15 137 (FY15: 8 600) employees had chronic conditions, with one third of these employees being treated for two or more chronic conditions. Chronic conditions include hypertension, HIV/AIDS, diabetes, asthma and TB.

Medical surveillance is ongoing at our dedicated occupational health hubs where 41 563 (FY15: 42 570) medical examinations were conducted during the past financial year.

### Tuberculosis

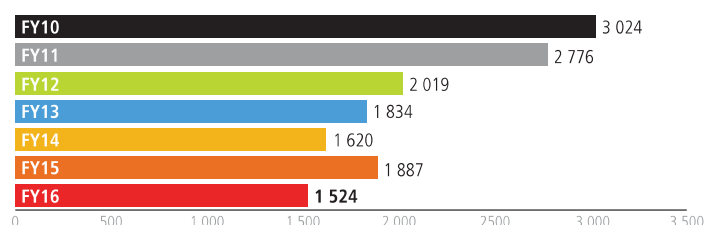
Tuberculosis (TB) is recognised as one of the most pressing public health concerns in South Africa and the gold mining industry. Harmony's TB control programme is in line with the relevant guidelines and prescriptions of the World Health Organisation. It is also in line with the national TB strategic plan.

Harmony's TB programme focuses on comprehensive screening and testing, the hospitalisation of infectious cases until sputum conversion, directly observed therapy short-course and contact tracing. As an affiliate of the Chamber of Mines, and through the Masoyise iTB campaign, Harmony will ensure that every employee is screened and tested for TB annually from 2016 to 2018. In the current year, a total of 29 077 employees were screened for TB.

Among our employees, a total of 214 cases of TB were certified (FY15: 288) in South Africa. This figure includes contractors, who have been included in the full TB programme since 2013. There has been a significant decrease in the number of new TB cases since the proactive healthcare strategy began in FY10. In FY16, three (FY15: three) new TB cases were reported during the year in Papua New Guinea.

#### TB incident rate – South Africa

Per 100 000



Cases of TB in South Africa	FY16	FY15	FY14	FY13*	FY12*
Certified	<b>214</b>	288	353	629	568
New cases	<b>461</b>	621	568	678	906

\* Following its sale, Evander has been excluded from the FY12 – FY13 figures for comparative purposes

### HIV/AIDS

The HIV/AIDS pandemic in South Africa continues to have a significant impact on employees, their dependants and local and labour-sending communities. The illness can result in higher levels of co-infections of other diseases, increased absenteeism and reduced performance levels, loss of skills, increased economic burden, and sometimes death.

At the South African operations, 7 063 employees have been identified as being HIV-positive and are on the HIV/AIDS programme, with 5 333 receiving antiretroviral therapy. Harmony manages HIV/AIDS through its clinics, health professionals with the support of appropriate specialists. Harmony's HIV/AIDS strategy is based on promoting health through education and awareness programmes, preventative strategies to reduce the number of new cases, evidence-based curative interventions to ensure treatment, and ongoing monitoring of compliance.

For its new HIV/AIDS treatment targets beyond 2015, the Department of Health, in conjunction with the Joint United Nations Programme on HIV/AIDS (UNAIDS), has adopted the 90-90-90 targets which are globally aligned. Harmony has in turn aligned its HIV/AIDS programme with these ambitious and achievable targets, which are:

- By 2020, 90% of all people living with HIV will know their HIV status. Harmony currently at 73%
- By 2020, 90% of all people with diagnosed HIV infection will receive sustained antiretroviral therapy. Harmony currently at 74%
- By 2020, 90% of all people receiving antiretroviral therapy will have viral suppression. Harmony currently at 61%

In Papua New Guinea, the Hidden Valley joint venture continued to operate the new digital X-ray machine and medical laboratory to accurately diagnose tropical diseases, TB and HIV/AIDS.

### **Voluntary counselling and testing for HIV/AIDS**

Pre-counselling and voluntary counselling and testing are offered to all employees through ongoing interventions at all Harmony healthcare hubs. A total of 30 294 (FY15: 19 234) employees received voluntary counselling and testing during the year and of these, 22 995 (FY15: 14 933) employees confirmed their status. The increase in the number of employees tested can be attributed to the introduction of positive behaviour reward programmes, among other health initiatives.

More than 500 personnel underwent voluntary counselling and testing for HIV/AIDS during the year at Hidden Valley in Papua New Guinea.

### **Occupational diseases**

#### **Silicosis**

Silicosis is caused by long-term exposure to high levels of quartz silica dust and can cause increased susceptibility to TB. Silicosis in South Africa, and at Harmony, remains a material concern. The integrated Harmony HIV/AIDS, TB and silicosis policy and programme were developed to manage the debilitating disease responsibly so as to minimise the risk and to proactively prevent deterioration. The trend for silicosis indicates a decline in incidence.

During FY16, 284 cases of silicosis were submitted to the Medical Bureau of Occupational Diseases and 64 cases were certified (FY15: cases reported 313; cases certified 197).

As a member of the Chamber of Mines, Harmony participates in processes to address issues relating to historical silicosis cases. In May 2016, the High Court certified two classes for an occupational lung disease class action, being TB and silicosis. It is too early to estimate the amount of possible claimants or the possible claims as a result of the legal action against the gold mining companies.

The silicosis working group (initiated by the South African gold mining companies who are members of the Chamber of Mines) continues to search for a sustainable, inclusive and comprehensive solution for current and legacy dilemmas. Meetings with stakeholders continued during the year.

Project Ku-Riha (the Tsonga word for "compensation") was launched in May 2015 and is being rolled out by the Department of Health, with the goal of making substantial inroads into addressing the backlog of compensation claims from mineworkers who suffered occupational lung diseases while working in the mining sector, and ensuring that new valid claims are paid within a reasonable timeframe. Harmony and seven other South African mining companies continue to participate in this initiative. To date, 1 000 ex-miners have been tracked and paid compensation.

For the companies, an efficiently operating compensation system is a critical part of the comprehensive solution being sought. This project builds on work already done between the Department of Health and the Chamber of Mines that led to the establishment of the first two one-stop service centres in Carletonville and Mthatha. These centres offer medical examinations, rehabilitation assessments, health promotion and counselling to all patients, as well as referrals to other medical specialists if necessary. Patients can now be diagnosed, treated and receive the help they need to stay healthy, in one place.

Harmony and several other gold mining companies are actively participating in the process to integrate the Compensation for Occupational Injuries and Diseases Act (COIDA) and the Occupational Diseases in Mines and Works Act (ODMWA). This process, which is being led by the Department of Mineral Resources, the Department of Labour and the Department of Health, was launched in January 2016.

#### **Industry milestone: eliminating silicosis**

By December 2024, 95% of all exposure measurement results will be below the milestone level for respirable crystalline silica of 0.05 mg/m<sup>3</sup>.

Using present diagnostic techniques, no new cases of silicosis will occur among previously unexposed individuals (previously unexposed individuals are those unexposed to mining dust prior to December 2008 i.e. equivalent to a new person who entered the industry in 2009). Workshops have been conducted by the occupational hygienists from all operations to establish a strategy to achieve this milestone.

A decision was taken to set annual incremental targets to meet the milestone ahead of time, not to wait until the deadline. This will ensure that special focus can be put in areas where compliance is lacking. Of note is the fact that Harmony is currently 88% compliant with the new milestone attributed to all the engineering controls in place.

Despite experiencing around 3-4m of rain a year, in Papua New Guinea, which is a good dust suppression measure, testing for respirable silica dust began during the year focusing initially on higher-risk areas at Hidden Valley. Based on baseline data gathered up to the end of the year, the risk of personnel contracting silicosis is negligible.

#### **Dust control**

In order to decrease our employees' exposure to silica dust, Harmony uses a range of engineering controls to minimise dust. Mining Industry Occupational Safety and Health (MOSH) leading practices such as the fogger system at strategic underground areas and the implementation of foot- and side-wall treatment in identified intake airways to allay dust have been adopted.

In addition, multi-stage dust filtration systems have been installed. We are also in the process of installing winch covers for all of our winches. Progress on winch cover installation is 98.1% with a total of 1 037 units out of the 1 057 units having been fitted.

Training and awareness programmes address the concerns of dust control in stoping workplaces and all development ends are equipped with water blasts to settle dust directly after a blast.

Dust discharge occurs during activities where the rock is broken at source i.e. stoping, development and trackless mining. Engineering controls to allay dust at source are to be investigated through the Mining Industry Occupational Safety and Health dust task team. A prototype waterblast which can be used in both stoping and development is currently being tested. The testing resulted in changes to be made to the unit to accommodate robustness and effectiveness. This continued during the current year. A final product was developed which is being tested with apparent success. The final test results should be made available to industry soon.

Revision of airborne pollutant baselines to identify hotspots and to assess the effectiveness of engineering controls is in progress at all operations of which 96% (FY15: 91%) of total samples have been completed.

## **Noise-induced hearing loss**

Harmony embarked on an Oto-Acoustic-Emissions initiative to detect early hearing loss. The Council for Scientific and Industrial Research collaborated and analysed the data and confirmed that Oto-Acoustic-Emissions detect damage two years earlier than an audiogram. We have received a proposal from Pretoria University researchers to continue with further technical developments that could help prevent noise-induced hearing loss.

All Harmony employees who are exposed to high noise levels are issued with personalised hearing protection devices, which reduce noise levels by 25 decibels.

During the year, 97.7% of occupationally exposed employees, including contractor employees (70.6%), were issued with personalised hearing protection devices (FY15: 98.9% and 59.6%). A progressive total of 23 226 personalised devices were issued in FY16 (FY15: 21 921).

Sound attenuators were also fitted to all equipment, resulting in no noise level exceeding 110dB(A)-weighted decibels from any machine, in compliance with our noise milestone.

New industry milestones for noise-induced hearing loss:

- By December 2016, no employee's standard threshold shift will exceed 25dB from the baseline when averaged at 2 000Hz, 3 000Hz and 4 000Hz in one or both ears
- By December 2024, the total operational or process noise emitted by any equipment must not exceed a milestone sound pressure level of 107 dB(A)

During medical examinations, audiometric testing for hearing loss is done at least annually at our occupational health hubs. The number of early noise-induced hearing loss cases (5-10% shift) decreased from 526 cases in FY15 to 371 in FY16.

An awareness drive was initiated at all operations to ensure employees are aware of the benefits of wearing personalised hearing protection. A monitoring programme was also implemented to measure actual compliance in the workplace. Compliance monitoring is undertaken during routine occupational hygiene inspections and ad hoc audits are also conducted.

As part of the initiative to prevent noise-induced hearing loss, 24 602 (FY15: 22 418) employees participated in the 'hearing coach promotion' initiative during the year. Evaluations were conducted and guidance provided where necessary regarding the use of customised hearing protection devices.

## **Heat stress**

Extensive refrigeration and ventilation measures are in place at all operations where temperatures exceed normal working ranges. Heat-tolerance testing and acclimatisation programmes support and protect employees exposed to excessive heat in the workplace.

In FY16, 14 549 heat-tolerance tests were undertaken (FY15: 6 736). The observed increase in the number of tests is attributed to the increase in the frequency of screen testing at Masimong and Phakisa to mitigate associated health and business risks. Heat-related illness cases decreased from 23 to 20 cases in FY16 (decreased from 64 to 23 cases in FY15).

## **Radiation protection**

All our operations in South Africa comply with the dose limit of 50 millisievert in a year and 100 millisievert in five years. Operational controls have been established to ensure that elevated monitoring results are investigated and corrected where required.

Radiological clearances are conducted at decommissioned sites to ensure the future declassification of these areas.

## **Managing chronic diseases**

As part of Harmony's integrated approach to healthcare, specific initiatives have been implemented to manage chronic diseases, with our focus on HIV, TB, diabetes, hypertension and silicosis, as well as asthma and epilepsy. In FY16, 55% (FY15:42%) employees in South African operations have a chronic condition. Of the 15 137 employees diagnosed with chronic conditions, 33% have hypertension, 6% diabetes and 52% HIV/AIDS.

Harmony's health initiatives focus on the most common diseases and the e-learning module covers these diseases in the induction programme. Other initiatives include pamphlets, health-worker training, screening at all medical centres, disease management interventions and quality assurance. In addition, podcasts and liquid-crystal display monitors are used to help educate employees on HIV and promote voluntary counselling and testing.

#### **Upper respiratory tract infections in Papua New Guinea**

Hidden Valley is located approximately three kilometres above sea level and most employees reside in the lower, warmer areas; the regular change in altitude contributes to various respiratory ailments. Other factors contributing to these infections include air-borne pollen during peak flowering times which affects air quality. The heavy rainfall all year round maintains high levels of humidity (around 80-90%) which creates favourable conditions for fungus, bacteria and viruses to proliferate.

A total of 2 438 employees were treated for respiratory ailments in FY16 (FY15: 2 719). There has been a decline in the number of cases presented since FY12, with a decrease of 12% recorded for FY16. Harmony has successfully rolled out an employee educational programme on respiratory ailments and gastro-intestinal hygiene.

#### **Malaria**

Malaria is endemic to many parts of Papua New Guinea, which includes work sites such as Wafi Golpu and Lae but excludes Hidden Valley. Importantly, many employees and contractors working at Hidden Valley reside in areas where malaria is endemic, and this is where our community health projects play a vital role in combatting the disease.

Over the past three years, there has been a 73% decrease in the presentation of patients with malaria-like symptoms at the clinics in Papua New Guinea. This is as a result of several initiatives including support for provincial spraying and fogging programmes; standardised testing; distribution of treated mosquito nets and treatment regimes; and ongoing malaria awareness education.

#### **Preventative healthcare**

**Health promotions and education** Harmony carries out monthly awareness campaigns on various health-related topics such as HIV, TB, sexually-transmitted infections, occupational and lifestyle diseases. Continuous monitoring and education are conducted at the health hubs which oversee major health campaigns.

**Positive behaviour reward programme** The health services team has piloted an innovative positive behaviour programme to reward outstanding health behaviour and sustain testing for HIV/AIDS. This initiative was piloted in FY16 when we tested and confirmed 374 HIV-positive employees. Continuing with this initiative in the current financial year we have identified a further 299 HIV-positive employees who have been enrolled on our wellness programme. Adding on to the success of this pilot project, the health service team is considering initiatives to expand the scope to include a more comprehensive positive behaviour programme.

**Influenza vaccines** In South Africa, a total of 7 147 employees (FY15: 5 286) received influenza vaccinations during the year as a proactive measure to prevent illness during the winter season.

### **HEALTH OBJECTIVES FOR FY17**

- Continued improvement in health-related absenteeism rates, specifically a 18% decline in absenteeism
- Launch of a comprehensive positive behaviour reward system to promote healthy lifestyles among employees
- Keeping the healthy healthier and creating a healthy culture within the company inclusive of contractors
- Provision of a proactive, individualised well-being programme which includes health risk assessments and development of individual risk profiles
- Continue to lead the industry with our healthcare model

# EMPLOYEES AND COMMUNITIES

Relevant Global Reporting Initiative indicators: G4-LA1, G4-LA9 and G4-LA12

Achievements FY16	Challenges FY16
<b>In South Africa:</b>	<b>In South Africa:</b>
<ul style="list-style-type: none"> <li>• Achieved management employment equity target of approximately 60%</li> <li>• Employee training and development: 1 748 504 hours (FY15: 1 757 704 hours)</li> <li>• Human resource development expenditure: 5.3% of payroll (on target)</li> <li>• Training in personal indebtedness: 16 033 employees trained to date</li> <li>• Hostel accommodation: 100% single-room occupancy rate maintained</li> <li>• Major Labour Court ruling in favour of gold companies in the dispute over extension of collective wage agreements entered into with majority unions to all employees at a “workplace” including members of a non-participating union.</li> <li>• Procurement expenditure with black economic empowerment entities of 76% exceeded Mining Charter targets</li> </ul>	<ul style="list-style-type: none"> <li>• Retaining the skills and experience required to operate efficiently</li> <li>• Managing inter-union rivalry</li> <li>• Competition for high-level engineering skills</li> </ul>
<b>In Papua New Guinea:</b>	
<ul style="list-style-type: none"> <li>• Papua New Guinea citizens make up 95% of workforce</li> <li>• Employee training and development: 44 896 hours</li> </ul>	

## WHY EMPLOYEES AND COMMUNITIES ARE MATERIAL TO HARMONY

Relevant material issues:

- Ensuring our workforce is safe and healthy
- Maintaining stability in our workforce
- Establishing a committed, dedicated culture of delivery
- Protecting our licence to operate
- Being relevant in the communities in which we operate

Our employees are essential to the conduct of Harmony’s business. A stable, engaged, skilled and motivated workforce has an important role to play in the successful achievement of our business objectives.

Establishing and maintaining positive relationships with host communities is important in ensuring our licence to operate. Ongoing engagement with communities is necessary to understand, manage and respond to community concerns and expectations.



## OUR APPROACH

*Relevant Global Reporting Initiative indicators: G4-LA2*

Our human resources initiatives focus on four underlying goals:

- Entrenching a single organisational culture
- Attracting and retaining employees with high potential
- Developing employees to meet operational skills requirements and improve efficiency
- Maintaining an effective employee performance management system.

Our employment policies, procedures and practices take into account and comply with the relevant labour legislation in South Africa and Papua New Guinea. Our recruitment initiatives focus on local communities in both countries. A review of all human resource procedures and policies is ongoing, including remuneration and incentive schemes.

As many of the communities associated with our operations are in socio-economically distressed regions, much of our engagement with and initiatives relating to communities focus on employment creation, education and training and development, especially where mines are near closure.

## EMPLOYEES

### PERFORMANCE IN FY16

**South Africa:** At the end of FY16, our employee complement was 30 441 (FY15: 31 012), 85% (FY15: 84%) of whom were permanent employees and 15% (FY15: 16%) contractors. More than 75% (FY15: 75%) of the South African workforce was drawn from local communities.

During FY16, 135 employees retired and 311 were retrenched, of whom 78 accepted voluntary retrenchment packages.

Our cultural alignment programme continued with 66 (FY15: 68) management employees completing the training in FY16. The aim of this programme is to achieve cultural cohesion throughout the company by shaping leadership, and empowering and engaging employees. Performance improvement in terms of production and safety is beginning to show as a result of this cultural alignment programme.

**Papua New Guinea:** The staff complement of 106 (FY15: 102) at the end of FY16 excludes employees of Morobe Mining Joint Ventures. Of these, 72% (FY15: 74%) were permanent employees and 28% (FY15: 26%) were contractors working on specific construction projects. A total of 95% (FY15: 96%) were local.

### EMPLOYEE ENGAGEMENT

In applying our value of “connectedness”, we ensure that employees feel part of the Harmony family. Internal communications is a continuous interactive process and includes regular meetings with heads of departments, work groups and general manager engagement platforms (mass meetings and quarterly productivity meetings). We also use print (posters, internal newsletters, memos and flyers), and digital (mine television, intranet, website and text messaging) and social media (Twitter).

The chief executive officer communicates regularly with employees by e-mail, at meetings and during internal roadshows.

For employees to be committed, productive and conscientious in their jobs, we believe they should feel valued. To this end, we ensure that our employees understand their roles within the company and what is happening at the company and in the industry. They are the first to hear important news. Regular employee engagement involves communication both to and from employees. Furthermore, suggestions made by employees are taken seriously and if necessary are acted upon.

### EMPLOYEE SHARE OWNERSHIP: SOUTH AFRICA

When Harmony launched the Tlhakanelo Employee Share Ownership Plan in FY12, all non-managerial employees became eligible to be shareholders with a total potential stake of 2.9% in Harmony.

Currently, 24 621 employees participate in the share plan. In FY16, the Tlhakanelo share plan realised R49 million (US\$3.4 million) (FY15: R43 million; US\$3.8 million) for employees. For more details, please refer to the Remuneration Report.

## LABOUR RELATIONS

### Union leadership empowerment programme

An empowerment programme aimed at sharing business imperatives and performance, company strategy and an understanding of business principles was initiated in FY15. Several union representatives have attended the programme.

### South African gold wage negotiations

*Relevant Global Reporting Initiative indicators: G4-EC5*

Harmony negotiates changes to wages and other conditions of employment through a recognised collective bargaining structure, at a centralised industry forum under the auspices of the Chamber of Mines. In FY16, a three-year wage agreement was reached with the unions representing the majority of employees at Harmony and was extended to all employees in the bargaining unit. For more information, please visit [www.goldwagene negotiations.co.za](http://www.goldwagene negotiations.co.za)

### Labour disputes and strikes

*Relevant Global Reporting Initiative indicators: MM4, G4-LA16 and G4-HR11*

Labour disputes and strike are considered a material issue because, in addition to the resulting loss of production, disputes affect morale and reputation, and present a risk to non-striking employees, communities and company assets. In March 2016, the Labour Appeal Court found in favour of the gold companies that participate in centralised, collective bargaining in terms of an appeal by the Association of Mineworkers and Construction Union against the decision of the Labour Court to uphold an interim order preventing the union from embarking on strike action in terms of the collective wage agreement reach in 2013. This decision has contributed to stability in the gold mining sector.

### South Africa

To mitigate the risk of labour disputes, we constantly engage with organised labour at mine and company level. Human resources adopts a proactive approach in addressing employees' queries through established structures and processes.

Harmony has embarked on various initiatives to address the scourge of employee over-indebtedness. These include, among others, financial literacy training, discontinuation of non-statutory payroll deductions and notifying employees about emolument attachment orders against their pay. In all, 16 033 employees (FY15: 10 778) have attended the financial literacy programme since its launch in September 2013.

### Papua New Guinea

We participate in ongoing engagement with all stakeholders, including employees, provincial and local government, landowners and regulators.

### NOTEWORTHY ACTION Maintaining peace and stability in our workforce

We endeavour to maintain peace and stability in our workforce at all times. We want our employees to feel and be safe in all aspects at work.

Our multi-union environment promotes co-existence, inclusion and collaboration. Our accountability value extends to unions with all labour relations structures and processes bound by national legislation, agreement and best practice. In addition to quarterly regional meetings with unions, we also encourage proactive and robust engagement to address issues. As communication is ongoing at all levels, we are in daily contact with full-time stewards while our general managers/human resources leaders interact regularly at branch level and with shaft committees.

Harmony engages with unions on a wide range of employee-related issues, such as housing, human resources development and employment equity, and we communicate details of our operational performance to union structures on a monthly basis.

We also work directly with our employees to address a number of issues that are key to our relationship, including production incentive reviews and financial literacy to address indebtedness and replace payroll deductions with a new system to manage emolument attachment orders and garnishee orders.

## Freedom of association

*Relevant Global Reporting Initiative indicators: G4-HR4*

We recognise the right of employees and contractors to freedom of association and adhere to collective bargaining processes and the resulting collective agreements in each country. Honesty is one of our values. We strive for honest, two-way discussions through collective bargaining.

**South Africa:** Harmony recognises four labour unions. In FY16, union representation included the National Union of Mineworkers at 60% (FY15: 66%), the Association of Mineworkers and Construction Union at 24% (FY15: 15%), the United Association of South Africa at 8% (FY15: 10%) and Solidarity at 2% (FY15: 2%). A total of 6% (FY15: 7%) of employees were non-unionised.

**Papua New Guinea:** There are no active unions. Industrial relations at Hidden Valley are currently managed by the mine's employee representative committee.

Representation by union – FY16 (%)



■ National Union of Mineworkers	60
■ Association of Mineworkers and Construction Union	24
■ United Association of South Africa	8
■ Solidarity	2
■ Non-unionised	6

## TRAINING AND DEVELOPMENT

### South Africa

*Relevant Global Reporting Initiative indicators: G4-LA9*

All training and development programmes are conducted in line with the company's strategic and operational needs and include skills development, adult education and training, learnerships, graduate development, talent management, and supervisory and leadership development. Some 5.3% (FY15: 4.9%) of the payroll was spent on human resource development.

In addition to upskilling our own employees, we recognise that community members can benefit from our programmes. We devote considerable effort to programmes such as bursaries and the bridging school that allow young learners from local communities to improve Matric results and continue their studies. This has the potential to benefit Harmony in the long run, too, as it encourages promising students to take up careers in the mining industry.

In FY16, 92% (FY15: 96%) of our workforce received training at a cost of R364 million or US\$25.1 million (FY15: R371 million or US\$32.4 million), including support for South African-based research and development initiatives in exploration, mining, processing, technology efficiency, beneficiation and environmental conservation.

In FY16, 68 people (FY15: 69) were trained in critical skills, including but not limited to mentorship, hazard identification and risk assessment, mineral resource management and various other courses through study assistance programmes.

To facilitate transformation in South Africa, employees received training in diversity management so as to facilitate proper implementation of employment equity. Feedback from the diversity dipstick survey was shared with all operations and action plans were implemented to address issues of concerns identified per site.

The Mining Charter in South Africa places significant emphasis on training and development. At the end of our reporting period, Harmony's operations met the requirement that 5% of the payroll costs be spent on employee training and development.

### **Adult education and training**

*Relevant Global Reporting Initiative indicators: G4-LA10*

Adult education and training centres at Harmony's South African operations run full-time classes to ensure that employees are functionally literate and numerate so as to allow for personal growth and transformation within South Africa.

In FY16, 412 employees (FY15: 476) and eight (FY15: seven) community members were enrolled in classes at a cost of R28 million or US\$1.9 million (FY15: R32 million or US\$2.8 million).

The overall average pass rate in FY16 was 56% (FY15: 53%), a 3% improvement on the previous year. Piloting of e-learning at the adult education and training centres at Joel, Masimong and Unisel began in August 2015. E-learning is expected to increase the number of participants in the programme as employees will be able to study after hours at their own pace.

### **Bursary programme**

Harmony offers a bursary programme and a subsequent graduate-development programme. A total of 52 (FY15: 33) bursaries were awarded for university studies during FY16 – 51 of these students came from local communities (FY15: 29).

### **Bridging school**

Harmony's bridging school supports mathematics and science at grade 12 level to assist school leavers in improving their final results to gain admission to tertiary studies. Upon successful completion of grade 12, some are awarded bursaries while others follow the learnership route, increasing the company's learnership intake.

Since inception of the school in 1996, we have registered a total of 410 students. Of the total number enrolled over the years, 25 (6%) were awarded bursaries and 310 (76%) attended our learnership programme. The balance were appointed to various permanent positions within Harmony, and some now hold positions in management.

### **Learnerships**

Harmony runs formal learnership programmes. In FY16, 214 (FY15: 247) learners were enrolled at different levels and 100 (FY15: 55) completed their learnerships. Most have been appointed to critical positions within the company.

### **Internship and experiential programmes**

In support of our social and labour plans, we hosted 65 students (30 internships and 35 experiential trainees) during FY16 (FY15: 71 students – 48 interns and 23 trainees). Of the total number hosted, 18 (FY15: 25) completed their programmes in FY16 and, of these, six were employed.

### **Social plan programme**

Through our social plan programme, facilitated by the 2003 framework agreement between Harmony and the National Union of Mineworkers, we continue to provide alternative skills training to employees (current and retrenched). This enables people to remain economically active beyond mining. It also cushions the impact of unavoidable retrenchments for economic reasons or when our mines reach the ends of their lives.

### **Future forums**

Future forums comprising representatives from mine management and organised labour, have been set up to deal with issues such as productivity improvements and long-term mine sustainability, job security and creation, and the impact of downscaling and retrenchments on employees and their families, communities and the local economies.

The forums are consensus driven and operate in a completely transparent environment. The culture and approach of the forums is one of joint problem solving, with management and organised labour negotiating to prolong the life of the mine so as to achieve the best possible benefits for all stakeholders.

## **Portable skills development**

In FY16, 1 545 employees (FY15: 425 received portable skills training, around 52% (FY15: 83%) were proxies (dependants of mine employees). To date, Harmony has provided portable skills training to about 6 000 employees (and/ or their proxies) – in basic electrical, basic computer literacy, basic welding, basic motor mechanics, clothing manufacturing, furniture making, plumbing, bricklaying, animal husbandry, and mixed farming systems – over a period of eight years.

## **Papua New Guinea**

In FY16, workforce training events were conducted at Morobe Mining Joint Ventures in Papua New Guinea, including:

- Production training
- Safety compliance training
- National Training Council Accreditation compliance
- Professional development
- Computer software courses
- Supervisor development programme

## **Employee educational support**

Harmony and Morobe Mining Joint Ventures provided R1.5 million or US\$105 000 (FY15: R44 million or US\$3.9 million) in educational support for 352 (FY15: 347) employees and their dependants in Papua New Guinea.

## **Morobe Mining Joint Ventures' landowner school tuition assistance**

The Morobe Mining Joint Ventures tuition assistance programme for the children of Hidden Valley and Wafi Golpu landowners received R0.7 million or US\$0.1 million in FY16. The money was used for school fees for 94 successful applicants, their general upkeep and stationery during the year.

## **Women's development programme**

During FY16, women participated in a number of programmes that included agricultural training. The women from Upper Watut and Wafi Golpu participated in learning how to manage a coffee nursery, and to germinate and raise coffee seedlings. They also learnt how to produce compost to improve the soil, prune coffee plants during growth, and general tending of the nursery. The Wafi Golpu women also participated in training on how to prepare and germinate vegetable seedlings so as to produce quality vegetables that could be sold to generate income for themselves and their families. At Wafi, women learnt how to cook nutritious meals, and to make and bake scones and bread. These were also sold at local community markets. The aim of the programme is that the women will continue to use their new skills as a source of income.

## **Education programmes**

The Wafi Elementary School Programme established five new schools and trained 43 new teachers. Funding supported teachers' allowances, school stationery and uniforms. The Wafi Golpu Project will continue to provide this support until the schools are registered with the National Department of Education and the government takes over their management. To date, approximately R0.4 million or US\$0.03 million has been invested.

An adult literacy programme for nine Wafi landowner communities was undertaken in FY2016, 15 new teachers were trained and 288 landowners participated.

A training programme for personal viability was funded and 30 people from the seven Hidden Valley landowner villages were trained. The training facilitates a mind-set shift for communities away from heavy dependence on mine-related incomes such as royalties and business opportunities towards non mine-based and more sustainable livelihood opportunities. The course has been accredited by the Papua New Guinea National Training Council and participants are awarded certificates upon completion. Approximately R0.3 million or US\$0.02 million has been invested so far in this programme.

## EMPLOYMENT EQUITY

Relevant Global Reporting Initiative indicators: G4-EC6 and G4-HR3

### South Africa

A representative workforce is a legislative and moral imperative in the interests of economic growth benefits for all stakeholders. We ensure that our migrant employees are able to return home regularly and we facilitate family visits with spouse quarters.

We have several local economic development projects in labour-sending areas, as well as an agreement to provide home-based care to medically incapacitated employees from all areas.

Harmony reports its employment equity plan and progress to the social and ethics committee quarterly and to the departments of Labour and Mineral Resources annually.

In FY16, 60% (FY15: 58%) of Harmony's management staff were historically disadvantaged South Africans, exceeding Mining Charter targets for company level compliance.

Women employed at management level improved to 17% (FY15: 16%). There is no difference in the salary scales for men and women at Harmony.

### Employment equity performance

Occupational categories	Historically disadvantaged South Africans		% of women by category
	Target (%)	Achieved June 2016 (%)	
Board	40	40	21
Top management (executives)	40	50	20
Senior management	40	47	22
Middle management	40	48	19
Junior management	40	62	16
Core and critical skills	40	58	6

### Papua New Guinea

We focus on attracting and retaining externally and locally recruited employees, particularly landowners and local citizens.

Operations are governed by a three-year training plan lodged with the Department of Labour. Under this plan, the joint ventures must ensure that locally sourced employees are continuously trained and succession is managed.

## HOUSING AND LIVING CONDITIONS IN SOUTH AFRICA

Improved living conditions for our employees are directly linked to enhanced employee well-being and productivity. In this regard we make the following housing options available to our employees: 15 606 receive the living out allowance of R2 100, 1 346 receive a housing allowance, 959 receive a housing assistance allowance and 7 252 live in single room hostels. In addition, our housing programme creates jobs and supports local business. Harmony only appoints local empowered companies when embarking on construction projects.

Our housing strategy promotes home ownership and rental options, and aims to integrate mining communities into local municipal structures. We make land available and facilitate affordable housing development on redundant mine land.

In line with our focus on home ownership, employees who do not live in company residences (hostels) receive a living out or housing allowance. We still own and make available more than 1 900 houses in mine villages across our operations.

The hostel de-densification programme was completed at the end of 2014 and ensures that employees have access to private single rooms. To enable employees to move their families closer to our operations, our hostel conversion programme makes family units available to the general mining communities.

<b>Housing and living conditions: performance against the 2014 Mining Charter targets</b>								
2016			2015			2014		
	Target (%)	Planned	%	Achieved	%	Achieved	%	Achieved
Residences (hostels) single room occupation	100	One person per room	<b>100</b>	<b><sup>1</sup>8 796</b>	100	8 695	19	<sup>1</sup> 1 678
Hostels (non-operational) conversion to family units	100	1 100	<b>86</b>	<b>945</b>	84	927	69	761
Facilitation of home ownership		4 700	<b>66</b>	<b><sup>2</sup>3 117</b>	63	<sup>2</sup> 2 961	59	2 800
<b>Total</b>			<b>84</b>		82		49	

<sup>1</sup> The number of single rooms available  
<sup>2</sup> Houses sold to employees and other housing development programmes (actual achieved will depend on employee affordability profiles and the ability to obtain finance). Certain elements are beyond Harmony's control, such as whether employees are granted bonds or receive state subsidies. Bank lending, affordability and indebtedness remain stumbling blocks to increased home ownership.

Of those employees residing in our hostels, all are accommodated in single rooms. Of the 1 100 family units to be built over three years, 945 (FY15: 927) units have been built to date – 86% (FY15: 84%) of the total planned. This includes 448 family units built at the Merriespruit housing project which has now been completed. Post year end, the Merriespruit housing project was awarded first place in the provincial community residential unit category in the Free State.

To further facilitate home ownership, we subscribe to and support the pension-backed home loan scheme negotiated for the industry by the Chamber of Mines. In all, 1 072 (FY15: 1 441) of our employees are using this facility, with a reduction in the number of subscribed employees paying off their loans. During FY16, 156 (FY15: 110) houses were purchased by way of a 'rent-to-own scheme'.

## **HUMAN RIGHTS – FOR EMPLOYEES AND COMMUNITIES**

### **Relevant Global Reporting Initiative indicators: G4-LA14, G4-HR3, G4-HR10 and G4-HR12**

Respect for human rights is entrenched within the company's values and specifically catered for in human resource policies, charters and contracts of engagement. This is closely monitored by our human resources function and community engagement managers at operational level.

We abide by the human rights conventions of the International Labour Organisation, as supported by the South African Constitution. Our adherence is monitored by the social and ethics committee. In addition, certain human rights requirements are built into contracts with new suppliers. No incidents of discrimination were reported in South Africa or Papua New Guinea in FY16.

The South African constitution also prohibits forced, compulsory or child labour. None of Harmony's operations are at risk of human rights contraventions and no contraventions of these principles were alleged or reported in FY16.

## COMMUNITIES

### SOCIAL AND LABOUR PLANS

Relevant Global Reporting Initiative indicators: G4-EC4

Harmony's operations in South Africa are governed by the allocation of mining rights, bound by an approved social and labour plan. Our policy includes local economic development initiatives executed in terms of the Mining Charter, the Mineral and Petroleum Resources Development Act and the codes of good practice for the minerals and mining industry. Please refer to the Mining Charter Compliance Scorecard for the status of our achievements in terms of the Mining Charter targets set for 2014.

Projects and programmes are considered, approved and monitored by a corporate social responsibility committee at management level. We identify suitable programmes through stakeholder engagement and in partnership with the Chamber of Mines' community development forum, non-governmental organisations, communities, government departments, municipalities, educational institutions, and the governments of Lesotho and Mozambique.

For the five-year social and labour plan cycle ending December 2017, Harmony's planned expenditure on commitments made in terms of our social and labour plans (the mine community development projects), amounted to R844 million (FY15: US\$57.3 million) of which, as at 30 June 2016, R430 million (US\$29.2 million) had been spent (FY15: R405 million; US\$33.3 million).

Our social and labour plans are aligned with municipal integrated development plans so as to ensure we make relevant and sustainable contributions to local communities.

A Harmony-led forum meets regularly, bringing together stakeholders to discuss and agree on key projects for the Free State goldfields region with the aim of identifying and developing industries lacking in the local economy and the enterprises necessary to service those industries.

Expenditure on local economic development in South Africa declined to R17 million or US\$1.2 million in FY16 (FY15: R72 million or US\$6.3 million), as a result of the mines' reduced levels of profitability and consequent inability to fund these projects, in the first half of FY16.

### SOCIO-ECONOMIC INVESTMENT

Relevant Global Reporting Initiative indicators: G4-SO1 and G4-SO2

We are committed to the sustainable socio-economic development and well-being of our host communities long after mining has ceased. We endeavour not just to comply with laws and regulations but to conduct regular meetings with stakeholders, such as government and community leaders, to address concerns, grievances and misperceptions.

<b>Local economic development spend</b>						
	FY16		FY15		FY14	
	R million	US\$ million	R million	US\$ million	R million	US\$ million
South Africa	17	1	63	6	72	7
Papua New Guinea	1	0.1	1	0.1	5	0.5
<b>Harmony – total</b>	<b>18</b>	<b>1.1</b>	<b>64</b>	<b>6</b>	<b>77</b>	<b>7</b>
* An additional R89 million (US\$8 million) was spent on hostel upgrades in FY15						
** An additional R106 million (US\$10 million) was spent on hostel upgrades in FY14						

### Corporate social responsibility

Our corporate social responsibility policy recognises the need for socio-economic investment in South Africa and Papua New Guinea, starting with the broader communities in which we operate, and our activities are monitored at board level by the social and ethics committee.

In FY16, Harmony spent R9 million or US\$0.6 million (FY15: R6 million or US\$0.5 million) on corporate social responsibility projects.



Harmony's corporate social responsibility priorities in FY16 concentrated on implementing programmes in mathematics, science and technology advancement, community project-based entrepreneurial skills development, sports and recreation development.

To date, Harmony has invested approximately R19 million or US\$1.3 million (FY15: R17 million or US\$1.5 million) on developing host communities and labour-sending areas in South Africa.

In Papua New Guinea, regulatory control vests in a memorandum of agreement between Morobe Mining Joint Ventures and local communities as well as key landowners with similar social commitments to those in South Africa. Corporate social responsibility projects and programmes are considered, approved and monitored by the head of our Southeast Asian operations.

Focus remained on health, education, agriculture and infrastructure in FY16. Hidden Valley's infrastructure programme focuses on constructing, repairing and upgrading roads, bridges, educational facilities, health facilities and water supply in the three landowner villages of Nauti, Kuembu and Winima, as well as impacted communities along the Watut River corridor.

A total of 324 jobs were created in South Africa by Harmony during the year. Details of upliftment projects can be found on the Harmony website at [www.harmony.co.za/sustainability](http://www.harmony.co.za/sustainability).

## PROCUREMENT

*Relevant Global Reporting Initiative indicators: G4-LA15 and G4-SO10*

We recognise that extending our supplier network to include emerging businesses enables a more equitable distribution of economic benefits.

### South Africa

Our preferential procurement strategy complies with legislation, and procurement processes and expenditure are governed by our group strategy and policy. We support this approach by helping to develop the business management skills required for emerging enterprises to succeed.

Our preferential procurement strategy encompasses:

- regional enterprise development centres, which make it easier for qualifying suppliers to do business with our company
- amending tender policies to help Harmony meet Mining Charter requirements
- measuring each mine's procurement from historically disadvantaged South African entities against targets in the Mining Charter scorecard
- small, medium and micro enterprises and/or historically disadvantaged South African-compliant vendor development aimed at maintaining acceptable standards

Our preferential procurement strategy promotes expenditure with companies recognised as black economic empowered entities under the Mining Charter.

In FY16, procurement expenditure with black economic empowerment entities was R3.4 billion or US\$0.2 billion (FY15: R3.8 billion or US\$0.3 billion); equivalent to 76% (FY15: 69%) of total discretionary spend.

Our performance in relation to the Mining Charter's black economic procurement targets as a percentage of total spend:

Category	Mining Charter target	FY16*	FY15
Capital goods	40	<b>81</b>	76
Services	70	<b>79</b>	70
Consumables	50	<b>76</b>	66
* Calculation is based on Harmony's financial year 1 July 2015 to 30 June 2016			

## Papua New Guinea

As agreed with government authorities (local, regional and national), landowners and communities, we issue contracts to local citizens wherever possible.

Supply expenditure by Morobe Mining Joint Ventures in FY16 amounted to R2.9 billion or US\$203 million (FY15: R3.0 billion or US\$267 million) of which R1.8 billion or US\$123 million (FY15: R2.2 billion or US\$193 million) or 61% (FY15: 72.2%), was expended in Papua New Guinea. Of this amount, R734 million or US\$50.6 million (FY15: R1.2 billion or US\$108 million) was spent in Morobe Province on goods and services. Contracts were awarded by Morobe Mining Joint Ventures to local landowner companies for catering, fuel haulage, general freight, plant hire, security, labour hire, cleaning, rehabilitation and bus services.

In line with Hidden Valley's current memorandum of agreement, Morobe Mining Joint Ventures continues to offer business development opportunities to landowners. These opportunities will increase with the proposed development of the Golpu project.

# ENVIRONMENTAL PERFORMANCE

Achievements FY16	Challenges FY16
In South Africa	In South Africa
<ul style="list-style-type: none"> <li>• Harmony's comprehensive mine rehabilitation programme, which employs around 200 people, was accelerated. Another four areas were demolished and rehabilitated, bringing the total number of areas since the programme began in 2010               <ul style="list-style-type: none"> <li>○ Allied to this, steady progress was made with the Matjhabeng land rejuvenation programme in the Free State including the start of an agricultural project for olives and vegetables</li> <li>○ Entered into partnership with POPCRU – donated land and buildings for a training academy for police and correctional services</li> </ul> </li> <li>• Diversification of our energy mix driven by procurement of solar and development of biomass energy</li> <li>• Bio-energy plant is due to generate first gas in September 2016</li> <li>• Solar parks being planned and implemented will generate 30MW on site</li> <li>• Novel rehabilitation strategy implemented at Kalgold involves transforming the D zone pit into a waste storage facility</li> <li>• Water treatment plant constructed at Kusasaletu to promote water conservation and achieve zero discharge – now fully operational. Work has begun on a water treatment plant at Doornkop</li> <li>• Good progress made to conserve habitat of the lesser flamingo in Welkom</li> </ul>	<ul style="list-style-type: none"> <li>• A significant water spillage from the return water dam at Kusasaletu occurred following heavy rains and pump failure. A water treatment plant installed in May 2016 will reduce the volume of water stored, creating capacity to buffer the rains</li> <li>• Environmental legislative reform can result in more stringent and often-times onerous and impractical requirements</li> <li>• New regulations on related financial provisions are often complex and may have a negative impact on management of environmental liabilities</li> <li>• The pending carbon tax and increased cost of electricity may affect the sustainability of operations. While the drought in South Africa threatened business continuity, it also resulted in our transforming our business to protect against the impact of drought in the future</li> </ul>
In Papua New Guinea	In Papua New Guinea
<ul style="list-style-type: none"> <li>• Close-out information for environment improvement plan at Hidden Valley was presented to the Conservation Environment Protection Authority for adjudication</li> <li>• Level 2A environmental licence received for Kili Teke</li> </ul>	<ul style="list-style-type: none"> <li>• Drought resulted in potable water extraction points at Hidden Valley drying up, for which remedial steps were taken</li> </ul>
At group level	
<ul style="list-style-type: none"> <li>• Achieved total electricity savings of 69 937MWh and on track to achieve five-year target in FY18</li> <li>• Carbon Disclosure Project: on the global A lists for both climate change and water</li> </ul>	

## WHY THE ENVIRONMENT IS MATERIAL TO HARMONY

In line with our values, we are accountable for the impact we have on the environment – land, water, air – and for the responsible use of the natural resources we consume. Our business activities and processes can negatively impact the natural environment and surrounding communities, and we have a responsibility to prevent, mitigate, manage and minimise any impacts.

**Relevant** material issues:

- Protecting our licence to operate
- Managing our environmental impact
- Reducing our environmental footprint
- Delivering lasting environmental benefits

*Relevant Global Reporting Initiative indicators: G4-EN22*

Total expenditure on our environmental portfolio in FY16 was R69 million (US\$4.8 million) (FY15: R64 million; US\$5.6million) of which R53 million (US\$3.7 million) (FY15: R34 million; US\$3.0 million) was spent in South Africa and R16 million (US\$1.1 million) (Harmony's 50% share) in Papua New Guinea (FY15: R15 million; US\$1.3 million). In addition, R50 million (US\$3.4 million) has been committed to the implementation of the bio-energy initiative in South Africa.

## OUR APPROACH

Our environmental strategy is aimed at managing our impacts, related risks and environmental liabilities, at responsible stewardship, compliance with environmental legislation and regulations, and at instilling a culture that shares knowledge and experience within and outside the group.

Harmony's environmental strategy and performance are overseen by our social and ethics committee. An executive environmental manager and an environmental leadership team drive environmental improvement strategically at group level. This is cascaded down to the operations. At each operation, general managers are accountable for environmental management, in line with annual environmental management plans that identify opportunities to improve compliance and minimise our overall impact on the environment.

Our board-approved environmental policy, available at [www.harmony.co.za/sustainability/governance#policies](http://www.harmony.co.za/sustainability/governance#policies), supports our environmental strategy while operations are guided by technical and performance standards, incorporated into environmental management systems and implemented in line with ISO 14001. This policy outlines our commitment to responsible environmental stewardship and sustainable mining and closure. Environmental management programmes include detailed closure plans, developed for each operation within five years of planned closure, to expedite beneficial post-mining land use and sustainable community livelihoods.

By year-end at our South African operations, seven of our long-life mining operations and five of our processing facilities had been certified in terms of ISO 14001. Gap audits were completed at Bambanani and Joel and on-site reviews are in progress with certification audits scheduled for December 2016.

In Papua New Guinea, as Hidden Valley's environmental management plan is aligned with the ISO 14001 standard, environmental awareness training is provided to all new employees, and reinforced by leadership training courses as well as monthly initiatives.

### Environmental and climate change legislation

**South Africa:** Our activities are regulated by the Mineral and Petroleum Resources Development Act, 2002 (Act No 28 of 2002), the National Environmental Management Act, 1998 (Act No 107 of 1998), the National Water Act, 1998 (Act No 36 of 1998) and the National Nuclear Regulator Act, 1999 (Act No 47 of 1999). Environmental management programmes for each operation are approved by the Department of Mineral Resources.

Environmental legal reform has led to more stringent but often impractical and onerous expectations by regulators, relating particularly to the Waste Management Act which calls for all tailings dams to be lined. In addition, the financial provision regulations promulgated in November 2015, which may apply retrospectively, require mining companies to provide for latent liabilities that are complex issues. Harmony is working with government, through the Chamber of Mines, to rationalise the legal

framework.

The pending carbon tax, together with increased electricity costs, may affect the sustainability of operations. Although details of the carbon tax have not been confirmed, government is to implement the tax in the coming financial year. Harmony has de-risked energy security and carbon tax concerns by increasing procurement of cheaper energy from renewable sources.

**Papua New Guinea:** Applicable environmental legislation, issued by the Conservation and Environment Protection Authority, regulates water extraction by and waste discharge from the mining tenements. The transition from Department of Environment and Conservation to the Conservation Environment Protection Authority continued in FY16 and will continue into FY17.

### **Environmental incidents**

*Relevant Global Reporting Initiative indicators: G4-EN24, G4-EN29, G4-EN34*

Our environmental management plans provide for monitoring, reporting and remediation of environmental incidents, including direct or indirect discharges of water beyond our mining area. Incidents are classified on a scale of 1 to 5 and, by law, we are required to report on incidents at level 3 and higher.

*Relevant Global Reporting Initiative indicators: G4-EN8, G4-SO8*

During FY16, we reported one significant level 3 incident, at Kusasaletu in South Africa. In March 2016, spillage occurred from the mine's return water dam following heavy rains and pump failure. A new water treatment plant, which came into operation at the end of June 2016, will reduce the volume of water stored and create capacity to accommodate an increase in water to be stored when it rains. It will also reduce our use of potable and fresh water supplies.

No fines or sanctions were received for non-compliance with environmental laws and regulations in Papua New Guinea. Mechanisms are in place to enable stakeholders to report any grievances about environmental impacts caused by our operations in both countries.

## **PERFORMANCE IN FY16**

### **REHABILITATION, LAND MANAGEMENT AND ENVIRONMENTAL CONSERVATION**

As custodians of the land we affect and manage, we acknowledge that some aspects of our operations alter the physical landscape permanently. Once mining has come to an end, land must be rehabilitated to assist its appropriate and productive use post-mining. Rehabilitation and closure are incorporated into overall planning from initial concept stage and during the life of mine. This includes ensuring that the necessary funding mechanisms for rehabilitation are in place. We continually identify land for rehabilitation and, where feasible, we refurbish infrastructure for use by local communities. Only a small proportion (14%) of the land covered by our mining rights has been disturbed by mining. Given that much affected land is still in use, opportunities for progressive and concurrent rehabilitation are limited.

## Rehabilitation and closure

<b>Land under management (ha)</b>				
	Mining right area	Land disturbed to date	Land rehabilitated	
			FY15	FY16
Kalgold	991	501	0	<b>0</b>
Kusasaletu and Deelkraal	5 605	305	5	<b>0</b>
Doornkop	905	296	0	<b>0</b>
ARMgold shafts (1, 2, 3, 4, 6 and 7)	5 980	351	4	<b>0.05</b>
Joel (1 and 2)	2 162	253	0	<b>0</b>
Target (1, 2 and 3)	4 327	365	0	<b>0</b>
President Steyn South (Steyn 1, 2 and plant)	1 847	41	5	<b>15.90</b>
President Steyn North (Steyn 7 and 9)	1 651	193	0	<b>0.01</b>
Virginia, Masimong, Saaiplaas, Unisel, Merriespruit, Harmony and Brand	22 583	3 374	1	<b>4.82</b>
Bambanani, Joint Metallurgical Services, Harmony One plant	2 356	1 345	66	<b>0</b>
Eland, Kudu, Sable, Nyala, Tshepong, Phakisa, Western Holdings 5	10 799	1 581	0	<b>0.36</b>
St Helena 2, 4, and 8	4 912	444	0	<b>1.39</b>
St Helena 10	944	8	0	<b>0</b>
Papua New Guinea	4 098	533	3	<b>0</b>
<b>Total</b>	<b>69 160</b>	<b>9 590</b>	<b>84</b>	<b>22.53</b>

## South Africa

The programme to rehabilitate decommissioned operations, which began in FY10, aims to reduce our environmental liabilities and eliminate potential safety and health exposures. In the process, we work with provincial authorities to meet local socio-economic imperatives. Site demolition of shafts, plants, defunct workshops and hostels continued in FY16. The total number of shafts (including ventilation shafts) decommissioned and demolished to date is 38. Shaft cavities are filled with inert material and they are capped to prevent, among other things, potential fugitive methane emissions. While drafting of Unisel's closure plan is underway, that for Masimong will begin in FY17.

In FY16, the total rehabilitation liability for our South African operations was R2.18 billion (US\$150 million) (FY15: R2.22 billion; US\$152 million). This amount is fully funded in advance via trust funds, and insurance and bank guarantees. Our rehabilitation programme has reduced our closure liability by more than R150 million (US\$10.3 million) since FY10 and provided procurement opportunities and employment for at least 200 local residents. Our most significant rehabilitation programme is being undertaken in the Free State where our bio-energy project in particular has assisted in reducing our environmental liability and in creating employment.

Following a prefeasibility study and budget approval, implementation of a commercial vegetable and olive agricultural project within mining right rehabilitated land in Welkom is scheduled to begin in September 2016 in the Free State. A similar feasibility study has been completed at the Doornkop operation using treated water to potable water standards. Development of several vegetable hubs in the Welkom area and at Doornkop is due to begin in October 2016. In addition, certain obsolete infrastructure is being re-purposed for use by the community. To this end a memorandum of agreement has been signed with

POPCRU for an academic training precinct to be established in former mine buildings at Harmony 3 shaft while part of the Steyn plant has been repurposed as part of the bio-energy project.

At Kalgold, a novel rehabilitation programme involves the return of tailings to the D-zone pit, which is to be converted into a waste storage facility, thus eliminating the need for a new tailings dam. Approval of the amended environmental management programme is awaited. The deposition of tailings into the pit began in FY15 and has delivered to design of the closure plan. In addition to consolidating the operation's footprint, an added advantage of this rehabilitation strategy is the recirculation of process water to the plant, thus maximising the re-use of affected water.

## NOTEWORTHY ACTION

### Land rehabilitation and generating bio-energy in Matjhabeng

Good progress was made with our multi-faceted land rehabilitation and rejuvenation programme in Matjhabeng in the Free State in FY16. This R53 million (US\$3.7 million) programme involves:

- Rehabilitating land and re-purposing an old gold plant to enable an appropriate, sustainable, post-mining, value-adding use
- Reducing our carbon footprint and thus our effect on climate change
- Creating economic opportunities for local communities once mining ceases by promoting skills development and job creation

In particular this programme includes implementation of a renewable-energy project to generate bio-energy from bio-crops cultivated on rehabilitated land. This energy will help to power our plants and thus contribute to reducing our demand for coal-based electricity.

### Bio-energy project

Among options considered for post-mining land use was the rehabilitation of land to cultivate non-edible bio-crops to generate renewable bio-energy, such as biogas and bio-char, for use as a substitute for polyfuel in the Harmony One gold plant.

Bio-crops (giant king grass, sweet sorghum or sugar beet) are being propagated to generate bio-energy (natural gas as a substitute for fossil-fuelled energy). Giant king grass is being used as the primary bio-crop feedstock owing to its high energy yields and its resilience to mine-impacted land. Giant king grass also provides the best yield of biomass per hectare.

The bio-energy generated will power the Harmony One gold plant elution and carbon regeneration circuits. The electrical and polyfuel water heating methods in the elution process have been converted to bio-gas heating. Phase 1 of the project is set to deliver 71 000GJ of energy. The project will ramp up to generate 187 000GJ within 24 months.

Additional benefits of the project include skills development and job creation for communities as well as a sustainable legacy for the Free State. The bio-char will also be used as a source of fuel by the communities.

Implementation of phase 1 of the project began in September 2014. This entailed establishing a pilot plant to generate and deliver 1.5MW equivalent of energy, and involved the refurbishment of Harmony's existing Steyn gold processing plant for use as a biogas plant. Following its commissioning, the plant is scheduled to begin producing first gas by August 2016. Full-scale production is expected in September 2016. Once the plant is fully operational and the concept has been proven, phase 2, which will involve a ramp up to 5MW equivalent of energy, at a cost of about R100-million, will begin implementation.

In the initial pilot project, 100ha of mine-impacted land was used for crop cultivation and an additional 250ha of land will be planted for the phase 2 ramp-up.

The 1.5MW equivalent plant will enable Harmony to offset about 8 000t CO<sub>2</sub> annually, while the 5MW equivalent plant will allow the annual offset of 27 000t CO<sub>2</sub>.

## Papua New Guinea

Land clearing for mining and processing operations is closely managed by the environment and community affairs departments. Staff are specially trained in the use of equipment for the rehabilitation of cleared surfaces, which is challenging given the rugged terrain and high rainfall. In addition, Hidden Valley and Golpu are in a geologically active zone, which experiences frequent earthquakes and landslides.

### Biodiversity, land management and conservation

*Relevant Global Reporting Initiative indicators: G4-EN12, G4-EN14, G4-EN31, MM1, MM2*

Biodiversity management plans are implemented at all sites, through either their respective mine closure plans, environmental management plans or through specific biodiversity action plans.

In the Free State, a nursery has been established to cultivate species to revegetate affected or remediated land. Harmony is currently rehabilitating disturbed land within our mining rights.

The following conservation projects continued in FY16:

## South Africa

**Flamingo conservation project:** Harmony entered into a partnership with BirdLife South Africa to develop and design conservation measures to protect the Lesser Flamingo's habitat in the district of Welkom, in the Free State. In consultation with key stakeholders, a survey was conducted by BirdLife South Africa to ascertain which pans in the area could potentially assist with conserving the near-threatened species, whose population is declining at an alarming pace. The Voelpan, opposite the Target shaft, has been identified as being the most suitable. The survey report recommends building a breeding island in the middle of the pan to allow safe breeding. This project, which is also being conducted in partnership with the Department of Tourism, is scheduled to be completed by end December 2017. BirdLife South Africa will be engaging with the relevant stakeholders regarding implementation. The total cost of this project is approximately R0.1 million (US\$48 000).

**Avianator programme:** We funded courses presented by BirdLife South Africa to teach young people about the value of birds and their habitats. In FY16, a total of 14 schools participated in these courses in Thabong, Welkom, Virginia, Winburg and Hoopstad in the Free State. Since inception in FY13, Harmony has contributed R0.5 million (US\$0.4 million) to this programme.

## Papua New Guinea

Although Hidden Valley is not in a biodiversity-protected area, five species on the International Union for Conservation of Nature Red Data List occur in the vicinity of the mine. There is no evidence that the mine has affected these critical habitats. The five species are two types of tree kangaroos, nectar bats, harpy eagles and long-beaked echidna. These species are not endemic to the Hidden Valley area.

Key measures proposed for the Golpu project's environmental management plan to manage impacts on terrestrial ecology include:

- Development and implementation of procedures to limit the impacts of vegetation clearing
- Salvage of seedlings of vulnerable flora species for rehabilitation
- Weed and pest control management measures



## ENERGY MANAGEMENT – OPTIMISING OUR ENERGY USE, REDUCING OUR CARBON EMISSIONS

*Relevant Global Reporting Initiative indicators: G4-EN3, G4-EN5 and G4-EN6*

Harmony's energy management is based on our energy efficiency and climate change policy and strategy which are driven by the need to reduce energy consumption and greenhouse gas emissions, to adapt to climate change and to diversify the energy mix. In particular this includes:

- promoting energy efficiency at our deep-level mines in South Africa
- designing and developing renewable energy sources in Papua New Guinea
- optimising and rebalancing our asset portfolio
- promoting an alternative energy mix
- aligning our rehabilitation programme with the green energy agenda

In FY16, Harmony's total energy use was 2 597 439MWh (FY15: 2 667 375MWh), down by 2.6%, with corresponding energy intensity levels of 0.13 MWh/tonne treated (FY15: 0.15MWh/tonne). In all, our energy consumption has declined by 15% in the past five years and our intensity usage by 31.6%, which has in turn reduced our greenhouse gas emissions.

Energy consumption is a significant portion of our operating costs in South Africa (16% including capital costs; FY15: 16%) but somewhat less so in Papua New Guinea (12%; FY15: 8%).

### South Africa

We mostly consume indirect energy in the form of electricity purchased from the national power utility, Eskom, which is generated by coal-fired power stations with very little scope for large-scale purchases of energy from renewable sources. Electricity tariffs have risen steadily since 2008 and, given electricity's relatively significant contribution to operating costs, tariff increases exceeding 8% will impact the sustainability of our operations. Reducing consumption is thus essential.

Energy efficiency initiatives focus on efficient mine cooling, compressed air, water management and ventilation as well as an improved energy mix with an emphasis on sustainable renewable energy – especially solar power, hydropower and bio-energy in the short term. We have improved our internal solar power generating capacity, which has helped to decrease power consumption and energy-use intensity. By the end of FY16, 11 (FY15: 12) solar energy projects had been implemented. These continue and are expected to realise a total combined annual energy saving of 64 040MWh. Some of these projects are energy neutral (load shifting projects) and hence contribute to cost savings only. The performance of the energy-efficient fans installed underground at Kusasaletu is exceeding expectations. (See noteworthy actions)

Our fleet-optimisation initiative has contributed to a reduced carbon footprint by reducing the fossil fuels (petrol/diesel) consumed in transporting people and material. We now use fewer vehicles and monitor fuel consumption monthly in line with key performance indicator measurements. We also limit the average age of the vehicles in our fleet and thus reduce emissions as there is a direct correlation between fleet age, kilometres travelled, oil consumption and maintenance costs.

### Papua New Guinea

Emission intensities are much lower because operations here are designed for energy efficiency and a predominantly renewable energy base. Hidden Valley has been driven predominantly by hydro-power since 2011 – 75% in FY16 (FY15: 83%). The decline in the proportion of hydro-power in FY16 was due to water shortages for hydro-power production owing to drought and generating capacity maintenance issues with the Hidden Valley power provider. In FY16, 14 000MWh of diesel-generated electricity was consumed (FY15: 10 355MWh).

<b>Direct and indirect energy consumption (MWh)</b>						
	FY16	% of total energy used	FY15	% of total energy used	FY14	% of total energy used
<b>South Africa</b>						
Direct <sup>1</sup>	–	–	–	–	–	–
Indirect <sup>2</sup>	<b>2 542 463</b>	100	2 608 157	100	2 756 029	100
<b>Total</b>	<b>2 542 463</b>	100	2 608 157	100	2 756 029	100
<b>Papua New Guinea</b>						
Direct <sup>1</sup>	<b>14 010</b>	25.5	10 355	17	18 354	30
Indirect <sup>3</sup>	<b>40 966</b>	74.5	48 863	83	42 060	70
<b>Total</b>	<b>54 976</b>	100	59 218	100	60 414	100
<b>Harmony</b>						
Direct	<b>14 010</b>	0.54	10 355	0.39	18 354	1
Indirect	<b>2 583 429</b>	99.46	2 657 020	99.61	2 798 089	99
<b>Total</b>	<b>2 597 439</b>	100	2 667 375	100	2 816 443	100

<sup>1</sup> Diesel  
<sup>2</sup> Non-renewable: coal-fired power stations (Eskom)  
<sup>3</sup> Renewable energy: hydropower-generated electricity

<b>Energy consumption and intensity (MWh)</b>					
	FY16	FY15	FY14	FY13	FY12
South Africa	<b>2 542 463</b>	2 608 157	2 756 029	2 664 111	3 013 150
Papua New Guinea	<b>54 976</b>	59 218	60 414	51 414	50 312
<b>Total</b>	<b>2 597 439</b>	2 667 375	2 816 443	2 704 220	3 058 219
Intensity consumption (MWh/tonne treated)	<b>0.13</b>	0.15	0.15	0.14	0.19

### Addressing climate change by optimising our energy use

Relevant Global Reporting Initiative indicators: G4-EC2

Climate change risks have influenced the design of new assets and the operation of current assets in terms of energy efficiency and the use of alternative energy sources. Opportunities and risks presented by climate change are included in mine closure plans, monitored continuously and communicated to the board throughout the year. The overall strategy is reviewed annually. Our intention is to substitute up to 50% of conventional electricity usage (fossil fuel, grid energy) with renewable energy. We are preparing power purchase agreements for three 10MW solar facilities and have begun implementing the first phase of our bio-energy programme.

Harmony's short-term strategy (for the next five years) is driven by adaptation, conservation and a move towards an alternative energy supply mix. We are reducing our grid-electricity consumption and greenhouse gas emissions by targeted year-on-year and multi-year reductions. To this end, we have implemented a suite of energy efficiency initiatives and closed carbon-intensive (high-energy) shafts. We are set to increase the use of green energy derived from hydro-power, solar power and biomass.

Our long-term strategy to mitigate the risk of climate change is based on two elements:

- **Rebalancing our asset portfolio:** Energy-intensive operations are being closed and we will focus on developing lower carbon-intensity assets to minimise the impact of higher energy costs and potential exposure to carbon tax. For example, the restructuring of Kusasaletu enabled us to reconfigure that operation to ensure that natural resources are used most optimally, delivering both water and energy savings in support of the mine's long-term sustainability.
- **Post-mining land use:** Among options considered for post-mining land use are the creation of carbon sinks and the use of rehabilitated land to cultivate non-edible crops to generate renewable bio-energy.

## NOTEWORTHY ACTIONS

### **South Africa: optimising energy consumption, reducing costs, supporting national targets, committed to renewable energy**

Having met the South African government's national energy-efficiency improvement target of 12% by 2015, we continue to work closely with Eskom to manage our electricity usage. This co-operation has included implementing demand-side management strategies to reduce electricity consumption during peak periods. For example, the scheduling of pumping, air compression, cooling, hoisting and ventilation to coincide with less expensive off-peak periods, allows us to make more efficient use of Eskom tariffs that reward load shifting and load clipping, and to improve operational efficiencies.

By the end of FY16, four demand-side management and seven Harmony-funded projects had been implemented. Eleven additional initiatives identified are in various stages of investigation or implementation. Together these projects will result in a total annual energy saving of 56 000MWh. Harmony has entered into a service level agreement with an electricity supply company to review our energy usage and recommend energy efficiency projects for all operations, to ensure that targeted energy savings are achieved for the next two years. Initiatives undertaken by the operations, such as temporarily halting compressors, winder, refrigeration plants, pumps and main ventilation fans, are achieving planned energy savings. Some of these are carbon neutral and will contribute to cost savings. The underground ventilation fans project from the previous year (funding provided by Harmony was used for the stope isolation valve project – turning off water and compressed air during periods when no mining activity is taking place) will be re-implemented this year to achieve planned energy savings. These initiatives are sustainable in the long term.

In line with the National Energy Regulator of South Africa's renewable energy feed-in tariff guideline, Harmony continues to assess various energy-generating initiatives. In addition to the bio-energy project, the following initiatives are also underway:

**Solar power:** We are collaborating with industry partners to develop a 10-15MW solar park at Kalgold, as well as three 10MW photovoltaic plants in the Free State. Harmony is currently working on a power purchase agreement and tariff structure which will be used in the agreement between Harmony and project developers. The environmental impact assessments for all four sites have been approved. Energy is expected to be generated from all of these sources by end June 2017.

**Power-generating turbines:** At Kusasaletu, three 3.1MW power-generating turbines were commissioned in FY15. These turbines generate power from surface mine water transported underground. The targeted power generation capacity has been reduced as less water is now being consumed by the mine. The annual cost saving is estimated at R6 million (US\$0.4 million). While we continue to monitor the debate on carbon offsets and trading in order to identify opportunities, this initiative has yet to be registered as a carbon project.

**Installing energy-efficient fans:** Our underground operations use 45kW fans to supply fresh air to the mining areas. The aim of this project is to install and replace these with energy-efficient fans that will deliver the same pressure and flow using less power. These energy-efficient fans are being installed at Doornkop, Target, Tshepong, Phaskisa, Bambanani, Masimong and Joel.

**Management of energy usage:** A specialised energy management system is being used to manage energy usage patterns at Kusasalethu's and Doornkop's plant mills and shaft winders. Mill and winder usage will be prioritised for off-peak periods to reduce electricity costs and decrease the load during national high-demand periods. Similarly, the same system will be used to manage energy usage by the bulk air coolers at Tshepong and Unisel, primarily during national peak periods. Underground temperatures are monitored to ensure there is no adverse impact on mining conditions.

**Compressed air:** Following preliminary indications that there is potential for energy savings from compressed air management, more detailed investigations are underway at Tshepong, Bambanani and Unisel to determine if savings are possible by optimising compressed air usage by matching compressed air supply with actual demand.

**Other initiatives:** Various other energy management initiatives are being considered to reduce the energy load during peak periods. These involve managing energy usage by the water pumps and by the underground refrigeration machines. During off-peak periods, water will be pumped to surface at Unisel and it will be chilled and stored in a chill dam at Kusasalethu so that the refrigeration plant does not run during peak periods.

**Surface fans:** An initiative is underway to determine if the use of surface fans on our gold mines can be optimised. The initiative will ensure that optimal ventilation conditions are maintained while reducing electricity consumption.

## NOTEWORTHY ACTIONS

### **Papua New Guinea: reduce reliance on diesel-generated power, lower fuel consumption, increase hydropower use**

- A greenhouse gas management strategy has been developed for our joint venture Papua New Guinea operations where the main source of power is hydropower (Scope 2), which does not generate greenhouse gas emissions.
- We aim to reduce our reliance on diesel-generated power at Hidden Valley and the amount of fuel trucked to this remote site. The lower proportion of hydropower in FY16 (~75%) was in part due to water shortages for hydropower production due to prevailing El Nino conditions and generating capacity maintenance issues with the Hidden Valley power provider. The Hidden Valley process plant, which accounts for the vast majority (about 85%) of the power consumed at this operation, is equipped with the latest technology to ensure optimal energy use.
- The Golpu project will be designed to meet environmental best practice and incorporate Papua New Guinean statutory requirements and, where applicable, alignment with Australian, World Health Organization and International Finance Corporation (part of the World Bank) standards or guidelines. The feasibility study infrastructure designs have been developed with energy efficiency in mind. Power studies for the Golpu project have included potential for the use of hydropower, coal, natural gas or biomass for power generation. The selected power supply option for the feasibility study assumed power would be sourced from the national grid. Diesel generators to be used during construction will remain on site as emergency power supply during operations.

### **Climate change and greenhouse gas emissions**

*Relevant Global Reporting Initiative indicators: G4-EC4, G4-EN15, G4-EN16, G4-EN17, G4-EN18 and G4-EN19*

Harmony's Scope 1 and Scope 2 emissions in FY16 totalled 2 636 493t CO<sub>2</sub>e (FY15: 2 753 303t CO<sub>2</sub>e) with a corresponding intensity of 0.145t CO<sub>2</sub>e/tonne milled (FY15: 0.15t CO<sub>2</sub>e/tonne milled). Indirect emissions, largely due to electricity purchased from Eskom, accounted for 97.9% of emissions. In FY16, we decreased our Scope 1 and Scope 2 emissions by 4% (FY15: 2%).

In FY16, our total carbon emissions decreased by 5.5% (FY15: 1.2%) with a corresponding decrease in intensity, which averaged 0.179t CO<sub>2</sub>e/tonne treated for the year (FY15: 0.191t CO<sub>2</sub>e/tonne treated). Group-level absolute and intensity-based greenhouse gas emission reduction targets have been set for the five years to FY18 (see Outlook on page 77).

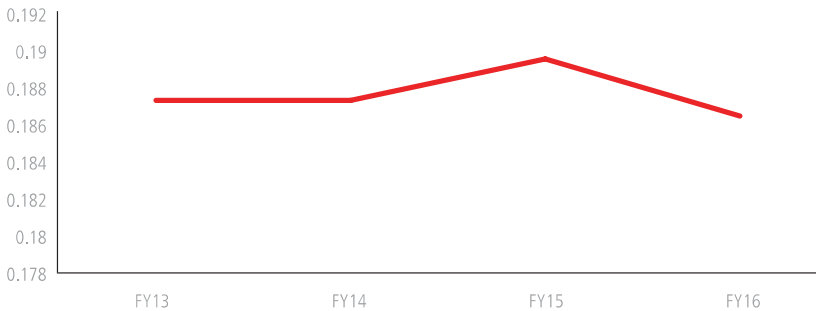
<b>Group carbon emissions</b>				
	FY16	FY15	FY14	FY13
<b>Scope 1 emissions breakdown by source (CO<sub>2</sub>e tonnes)</b>				
Diesel	<b>53 278</b>	64 244	71 728	90 951
Explosives	<b>1 838</b>	1 748	2 079	2 026
Petrol	<b>777</b>	909	950	1 337
<b>Total</b>	<b>55 893</b>	66 902	74 758	94 314
<b>Scope 1 emissions breakdown by source (%)</b>				
Diesel	<b>95.3</b>	96	96	96
Explosives	<b>3.3</b>	3	3	3
Petrol	<b>1.4</b>	1	1	1
<b>Total</b>	<b>100</b>	100	100	100
<b>Total scope 1, 2 and 3 emissions (CO<sub>2</sub>e tonnes)</b>				
Scope 1	<b>55 893</b>	66 902	74 758	94 314
Scope 2	<b>2 580 600</b>	2 686 401	2 745 005	2 648 126
Scope 3	<b>615 456</b>	686 233	661 515	616 978
<b>Total</b>	<b>3 251 949</b>	3 439 536	3 481 278	3 359 418
<b>Total scope 1, 2 and 3 emissions (%)</b>				
Scope 1	<b>2</b>	2	2	3
Scope 2	<b>79</b>	78	80	79
Scope 3	<b>19</b>	20	18	18
<b>Total</b>	<b>100</b>	100	100	100

<b>Carbon emissions intensity</b>				
	FY16	FY15	FY14	FY13
<b>Scope 1 emissions intensity by source (CO<sub>2</sub>e tonnes/tonne treated)</b>				
Diesel	<b>0.0029</b>	0.0036	0.0038	0.0051
Explosives	<b>0.0001</b>	0.0001	0.0001	0.0002
Petrol	<b>0.0001</b>	0.0001	0.0001	0.0001

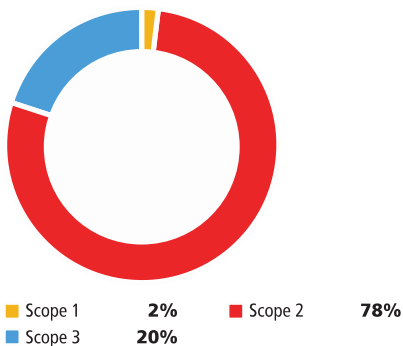
<b>Total scope 1, 2 and 3 emissions intensity (CO<sub>2</sub>e tonnes/tonne treated)</b>				
Scope 1	<b>0.0031</b>	0.0040	0.0040	0.0051
Scope 2	<b>0.1428</b>	0.1490	0.1458	0.1441
Scope 3	<b>0.0340</b>	0.0380	0.0332	0.0336
<b>Total</b>	<b>0.1799</b>	0.1910	0.1830	0.1828

### Annual carbon emissions intensity

(CO<sub>2</sub>e tonnes/tonne treated)



### CO<sub>2</sub> emissions by scope (%)



## NOTEWORTHY ACTION

### Engagement with suppliers and their environmental impacts

Relevant Global Reporting Initiative indicators: G4-12, G4-EN32, G4-EN33, G4-HR11

We manage our supply chain risk by engaging continuously with our top 50 suppliers to reduce their greenhouse gas emissions and climate change risks across the value chain.

While environmental management and compliance with various legislation and regulations, among others, are included in the general conditions of contract for suppliers, screening of suppliers has yet to be undertaken. Should a supplier be found to be in contravention or to be non-compliant, our contracts with them will be suspended. To date, there have been no such suspensions, and we have not received any reports of grievances against suppliers regarding adverse environmental impacts. A more specific greenhouse gas-related clause is to be included in future contracts. This clause will state that all suppliers must agree to introduce a greenhouse gas reporting system for the products we purchase and to submit an annual report on their carbon footprint to Harmony. Working with suppliers to improve their greenhouse gas performance will help reduce our Scope 3 emissions over time.

Harmony's supply chain has made great strides in managing its own environmental footprint. Various initiatives have reduced fuel consumption by approximately 29% in the past five years.

## Climate change and water reporting

Just prior to year-end, we submitted our eleventh annual responses to the Carbon Disclosure Project for climate change and water.

Results from our previous submission – released in November 2015 – indicated that we were on both global A performance lists:

- **Climate change:** Harmony was one of five South African companies on the global climate change performance A list. There were 113 companies in all on the A list
- **Water:** Harmony was one of only eight companies globally to be awarded an A grade for water security and water management – and one of two South African companies

These awards acknowledge our performance in managing our power consumption and related emissions, and our water usage.

## OPTIMISING WATER USE, LIMITING OUR IMPACTS

Relevant Global Reporting Initiative indicators: G4-EN8, G4-EN9 and G4-EN10

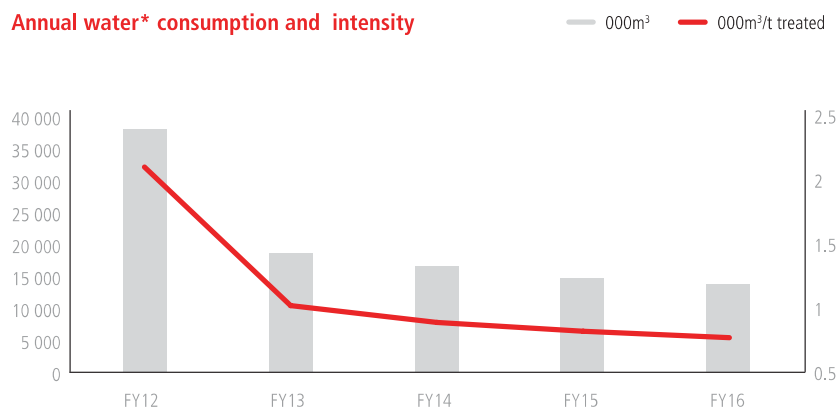
Our water strategy supports the drive for self-generation and zero discharge to underscore our water conservation and demand management objectives. We have also begun an intensive exercise to optimise the supply of regional water in Welkom, so as to ensure that we have a sufficient supply in the event of a protracted drought and that we use water responsibly. In addition, our intention is to secure a sufficient supply of water for business growth and development, as well as for social upliftment initiatives.

Water use – measured						
		FY16	FY15	FY14	FY13 <sup>1</sup>	FY12
Water used for primary activities	000m <sup>3</sup>	<sup>2</sup> 13 689	14 614	16 495	18 556	38 011
Potable water from external sources	000m <sup>3</sup>	12 459	11 993	13 139	15 610	15 519
Non-potable water from external sources	000m <sup>3</sup>	1 230	2 620	3 355	2 946	22 492
Surface water used	000m <sup>3</sup>	716	776	1 037	1 230	1 023
Groundwater used	000m <sup>3</sup>	<sup>3</sup> 513	1 844	1 550	1 716	21 469
Water recycled in process	000m <sup>3</sup>	38 821	38 338	24 531	27 593	38 337
Percentage of water recycled	%	74	72	61	60	50

<sup>1</sup> FY13 excludes Evander – some reductions occurred in the previous year  
<sup>2</sup> Decrease in water used for primary activities due to Kalgold's being less dependent on water from external sources and increasing its usage of recycled water  
<sup>3</sup> Decrease in groundwater used due to reduced dependency on groundwater by Kalgold as a result of its increased use of recycled water in the process

Water used for primary activities – measured						
		FY16	FY15	FY14	FY13*	FY12
Intensity consumption	000m <sup>3</sup> /tonne treated	0.76	0.81	0.88	1.01	2.09
Water used for primary activities	000m <sup>3</sup>	13 689	14 614	16 495	18 556	38 011

## Annual water\* consumption and intensity



\* Water used for primary activities

The total amount of water used for primary activities declined to 13 689m<sup>3</sup> in FY16 with an intensity of 0.76m<sup>3</sup>/tonne treated (FY15: 14 613 602m<sup>3</sup> and intensity of 0.81m<sup>3</sup>/tonne treated).

Harmony has implemented a group-wide campaign to re-use process water and thus reduce our dependency on groundwater by 4.5%, while increasing the amount of water recycled by 5%, by FY18.

## South Africa

In line with legislative requirements, integrated water-use licence applications were submitted to the authorities for each operation in 2006. At year-end FY16, the status was as follows:

- Kusasaletu's water use licence issued
- Doornkop is awaiting a final licence. The Department of Water and Sanitation has confirmed that the old order mining right is valid until the regulator's backlog is resolved
- Final approval is awaited for Kalgold's water licence
- Applications for water use licences for the Free State region were submitted to the national office with a recommendation from the regional office to issue all the Free State licences applied for

Intermittent water supplies pose a significant threat to our operational continuity and profitability. A strategy to reduce dependency on potable water and to maximise our use of fissure and process water began in 2013.

To aid water conservation, a water treatment plant was installed at Kusasaletu to eliminate any discharge into the receiving environment. In addition to preventing pollution of the instream water environment, these plants will help maximise the reuse and recycling of mine water. This will reduce dependency on Rand Water and free up this scarce resource for use by others. A similar plant has been budgeted for and will be constructed before year end at Doornkop.

**Kusasaletu:** Desilting of water dams together with enhanced pumping capabilities, on surface and underground, increased holding capacities enabling the dams to accommodate greater volumes as per design. This has helped eliminate overflows and reduced the level of solids in process water. Pumps now last longer and there are fewer breakdowns, which eliminates the risk of flooding of underground workings.

**Kalgold:** Plant and tailings storage facilities were modified to maximise the recovery of water for reuse. The process water dams were reinforced to increase storage capacity and minimise overflows, and more efficient flow meters and valves were installed. Comparisons of water consumption and recovery in FY15 and FY16 indicated:

- an increase of more than 100% in the average quantity of water recycled (FY15: 43 547m<sup>3</sup> compared with FY16: 112 706m<sup>3</sup>)
- 99.3% reduction in surface water sourced (7 306m<sup>3</sup> in FY15 compared with 1 000m<sup>3</sup> in FY16)
- 74% reduction in volume of groundwater abstracted (125 436m<sup>3</sup> in FY15 compared with 32 959m<sup>3</sup> in FY16).

Kalgold is our only South African operation to draw water directly from a surface source aquifer. Other operations are supplied by bulk water service providers and municipalities, surface water run-off, water pumped to surface from underground operations, recycled water and borehole water.



**Doornkop:** Capacity management and water efficiency have been optimised and all industrial and process water used at shaft and by the plant comes from underground workings/dams, eliminating any demand for water from Rand Water. The process water dam has a gross capacity of 1 600 000m<sup>3</sup> and provides Doornkop plant with adequate water storage capacity for its needs. The dam is equipped with a spill way chute in case of overflows. With the drought in the summer of 2015/2016, water was drawn from the shaft to fill up the dam to ensure that the plant did not use potable water for processing. Every effort was made to minimise water losses and process water recycling levels increased from 164 894m<sup>3</sup> for FY15 to 869 016m<sup>3</sup> for FY16. All process water at plant is sourced from shaft boreholes and fissure water. This water is re-used at the plant and circulated and diluted with fissure water to improve the quality of the water in the dam where a variety of birds nest. At the shaft, small reverse osmosis plants treat water and supply underground employees with fresh, clean water for drinking which reduces shaft consumption of Rand Water. A 5ML reverse osmosis and ion exchange plant under construction on surface will treat mine water for operational use, taking the operation to zero discharge.

#### **NOTEWORTHY ACTION**

Harmony has committed R2 million to provide potable water to drought-affected communities in Matjhabeng. Boreholes have been drilled in Theunissen in the Free State province.

#### **Papua New Guinea**

At Hidden Valley, the steep topography, high rainfall and low levels of evaporation pose significant water management challenges. Two main water management techniques in use are:

- controlled run-off of rainfall to prevent erosion and sediment entering the river system
- conservation of site water used to limit the volumes of treated wastewater that need to be discharged to the environment.

Most of the raw water required by Hidden Valley is drawn from Pihema Creek and used in the process plant and related ore-processing activities. Although process water recycling is prioritised, the tropical environment creates a positive water balance thus, together with the requirement to minimise water storage in the tailings storage facility, there is a high rate of water discharge to the environment.

The Hidden Valley operation treats all water to prescribed standards before it is discharged into the environment and the joint venture partners continuously monitor and manage the environmental impact of the mine on the Watut River system. The environment and mine operational teams at Hidden Valley meet on a quarterly basis with representatives of Harmony and Newcrest Mining Limited to review waste dump design, compliance of the tailings storage facility and water discharge results. Quality assurance/control programmes have been implemented to monitor construction of the waste dump and tailings storage facility, including assessment of sediment and run-off control measures.

Discharge of mine-related sediment into the Watut River has been reduced with a continued focus on erosion control and sediment management. Lime dosing of the Watut River continues when required to control acidity and dissolved metal levels. At the sewage treatment plant, continuing operator training has improved compliance with permitted discharge criteria.

#### **Acid mine drainage**

Major sources of acid mine drainage include drainage from underground mine shafts and run-off and discharge from open pits and mine waste dumps, tailings and ore stockpiles. Tailings and ore stockpiles make up nearly 88% of all waste produced at our South African operations.

Our water management strategy involves intercepting water before it is polluted underground. When there is a risk that rising water levels underground could hinder access to our ore reserves or those of other operations or harm the environment, water is pumped to surface. It is then consumed as plant intake.

At Doornkop, water is discharged under directive. Its water licensing is currently underway and the mine complies with the terms of its draft licence. An intensive water-monitoring programme is in place and reporting to the regulator takes place routinely. Doornkop also has a directive to discharge 1.5MI of fissure water into the receiving stream which has been exceeded during construction of the water treatment plant, although the discharge did comply with instream water quality requirements. The plant, which is scheduled for completion by year-end will enable us to get to zero discharge.

Regarding surface water pollution, rehabilitation has been prioritised at the joint metallurgical scheme and acid plant sites in the Free State, and at the decommissioned shafts and associated infrastructure in the Free State and at Kusasalethu.

In terms of its water licence, Kusasalethu is authorised to discharge 1.5MI per day on condition that the discharge meets certain set water-quality criteria. Kusasalethu has on occasion exercised this right but only under extreme conditions. Such discharges will be eliminated as the water treatment plant was fully operational by year-end.

In Papua New Guinea, acid mine drainage occurs as a result of waste rock dumps that contain potentially acid-forming material. Environmental impacts are mitigated by the construction of engineered waste rock dumps and controlled placement of potentially acid-forming waste rock. When required, lime is added to the process-water discharge to maintain natural levels of alkalinity at the compliance point. Water sampling and studies continue to improve our understanding of acid mine drainage impacts and enable us to formulate plans for longer-term reduction and mitigation.

## OPTIMISING OUR USE OF MATERIALS

### Relevant Global Reporting Initiative indicators: G4-EN1

The primary materials consumed in the conduct of our mining activities and processes include the rock (ore and waste) we mine together with liquefied petroleum gas, grease, cyanide, fuels and lubricating and hydraulic oils.

<b>Materials used</b>					
	FY16	FY15	FY14	FY13 <sup>4</sup>	FY12
Rock mined: ore and waste (000t)	<b>27 606</b>	<sup>1</sup> 29 948	39 133	38 668	34 868
Ore mined (000t)	<b>19 739</b>	13 041	14 798	13 312	14 010
Waste rock recycled (000t)	<b>3 964</b>	6 647	7 058	8 008	8 191
Slimes recycled (000t)	<b>6 131</b>	5 987	5 933	5 358	6 955
Liquefied petroleum gas (t)	<b>0.54</b>	1.14	1.21	1.08	0.55
Grease (t)	<sup>5</sup> <b>384</b>	54	87	61	51
Cyanide (000t)	<sup>6</sup> <b>18.0</b>	14.3	14.7	8.0	11.1
Petrol and diesel (000ℓ)	<b>20 298</b>	24 464	<sup>2</sup> 27 148	<sup>3</sup> 61 354	30 135
Lubricating and hydraulic oil (000ℓ)	<b>2 291</b>	2 772	3 011	3 860	2 457

<sup>1</sup> Reduction mainly due to closure of Target 3 and restructuring of Kusasalethu's production profile  
<sup>2</sup> Reduction in petrol and diesel consumption due to closing Kimberley Reef area at Doornkop and decline in consumption at Hidden Valley with increased use of hydropower  
<sup>3</sup> Increased use at Hidden Valley when overland conveyor malfunctioned  
<sup>4</sup> Excludes Evander (previous years not restated)  
<sup>5</sup> Increased usage at Phakisa and Tshepong  
<sup>6</sup> Increase in cyanide consumption due to high usage at Kalgold when milling oxides

## Cyanide

Harmony used 18 000t of cyanide during FY16 (FY15: 14 300t). The increase in cyanide consumption was largely due to the increased volume of tonnes treated in FY16 –18.1Mt compared to 18.9Mt in FY15. The corresponding intensity usage is 0.97t cyanide/t treated for FY16 (FY15: 0.79t cyanide/t treated).

Harmony is a signatory to the International Cyanide Management Code for the manufacture, transport and use of cyanide in the production of gold (the Cyanide Code). All of our major gold mining operations and most of our metallurgical plants have been certified compliant with the Cyanide Code.

Kalgold: The cyanide detox plant was commissioned in July 2015 when the Kalgold plant began to deposit tailings into the D-Zone open pit as part of Kalgold's open pit closure strategy. The cyanide detox plant will reduce cyanide concentrations in the tailings to acceptable levels. Test work is underway to ensure we achieve the desired levels. Cyanide concentration levels are monitored at the detox plant, along the tailings and return water pipeline route and at the point of discharge into the pit. The Kalgold plant is to re-register with the International Cyanide Management Institute once cyanide concentrations meet the institute's requirements.

**Phoenix retreatment operation (Saaiplaas plant):** The de-registration status quo remains. The plant's process does not allow for decreases in cyanide dosages as this results in reduced gold recovery and we are therefore unable to reduce the weak acid dissociable concentration of cyanide leaving the plant.

Hidden Valley's plant received its Cyanide Code compliance certificate in FY14. Harmony and Newcrest are signatories to the code and, since commissioning of the process plant in FY10, cyanide concentrations at the Nauti Village compliance point (as stipulated in the permit) comply with the environmental permit limits.

## MANAGING OUR EFFLUENTS AND WASTE

*Relevant Global Reporting Initiative indicators: G4-EN22, G4-EN23, G4-EN24 and MM3*

Effective waste management is a priority and can reduce our environmental impacts and mitigate our environmental liabilities. An understanding of the actual cost of waste management enables us to plan effectively for new projects and mine closure. Practically, we maximise recycling and waste reduction during the life of a mine, and design to minimise waste and reclaim mineral waste (such as waste rock from dumps as aggregate) to curtail our total mining environmental footprint.

Internally, guidelines on mineral, non-mineral and hazardous waste materials are included in the environmental management systems implemented at all operations. We understand that waste management begins with initial generation and encompasses handling, storage and transport as well as recycling, treatment and/or disposal.

<b>Waste (000t)</b>	FY16	FY15	FY14	FY13	FY121
Accumulated tailings in tailings storage facilities (active and dormant)	<b>1 418 577</b>	1 400 273	1 382 178	1 359 770	1 433 760
Accumulated waste rock dumps	<b>203 559</b>	196 692	190 128	169 115	165 085
Scrap steel	<b>6.229</b>	4.996	4.919	5.583	10.355

<sup>1</sup> New reporting indicator for South Africa from FY12 onwards with consolidated group data reported

## Mineral waste

In FY16, 26.1Mt of mineral waste was generated from gold production (FY15: 24.7Mt), comprising 7.9Mt (FY15: 6.6Mt) of waste rock and 18.3Mt of tailings (FY15: 18.1Mt).

Tailings comprise crushed rock and process water emitted from the gold elution process in the form of a slurry once the gold has been extracted. The composition, size and consistency of tailings vary by operation with opencast operations producing greater volumes in general than underground operations.

Tailings and waste rock are usually inert but rock close to the ore body may be associated with radiation or salts if these are characteristic of the ore body.

As tailings contain impurities or pollutants, they are placed on tailings dams engineered to contain the slime, in line with our water management programme. The fines are also collected and deposited on the tailings. Water is collected from toe drains and penstocks, and channelled to return water dams where it is available for reuse by the plant.

In the process, cyanide is destroyed – it self-destructs on the tailings when exposed to light – but salts and heavy metals can enter groundwater and create a pollution plume. We monitor our groundwater as public safety assessments have found that these plumes (radionuclide contaminant plumes) could be contained in the tailings storage or water management facilities for hundreds to thousands of years.

Effective mineral waste management reduces the aesthetic and land use challenges of mining, particularly during closure, as well as the potential for water and air pollution while maximising the recovery of ore, minerals and metals. Improved mineral waste management can result in significant savings and a reduction in energy consumption. Residual economic value can be generated from projects such as our Phoenix reclamation initiative.

To protect employees, communities and the environment, we handle all chemically reactive or radioactive waste appropriately by:

- minimising the quantity of material stored to limit the extent of the footprint of land disturbed
- ensuring storage sites are physically and chemically safe, and well-engineered
- undertaking progressive rehabilitation – returning affected land to productive use after mining.

Hidden Valley's advanced waste management systems have generated positive feedback from stakeholders, particularly the tailings storage facility (the first to be operated successfully in Papua New Guinea). The review of laws relating to management and disposal of tailings is now on hold indefinitely while the Mining Policy and Geohazard Department focuses on completing the revised Mining Policy Act and related new regulations approved in 2015. The Mining Policy Act review is in its final stages of approval by the government and may become law during FY17.

Of note, at Hidden Valley, we have:

- improved waste management, closure and decommissioning procedures for waste and fuel oil storage areas
- developed a sediment reduction plan that focuses on source control (for example, better drainage around waste dumps and the stabilisation of exposed slopes) rather than downstream sediment traps. Sediment reduction is still the key focus for the environment team
- discussed with the Conservation and Environment Protection Authority on how alternative and more site-specific discharge criteria for cobalt and sediment can be developed. There has been no progress to date as the Conservation and Environment Protection Authority is focused on their transition activities.
- trained sewage treatment plant operators to ensure that consistent treatment and proper sampling procedures are followed. Compliance has improved.

No application for a permit amendment for Hidden Valley has been made. The focus has been on having the Environmental Improvement Plan accepted by the authorities before negotiating new environmental permit conditions.

### **Non-mineral waste**

In FY16, 11 895t of waste (plastic, steel, wood and paper) were recycled (FY15: 9 059 tonnes), generating R6 million (US\$0.4 million) (FY15: R5 million; US\$0.4 million).

Plastics, steel, paper and timber generated by processing operations are produced in smaller volumes than mineral waste. This non-mineral waste is managed by recycling/re-use, off-site treatments, disposal or on-site landfills. We ensure responsible storage, treatment and disposal of non-mineral waste. Group environmental standards for non-mineral waste management are integrated into existing ISO 14001 systems.

## OUTLOOK

We continue to pursue our five-year environmental objectives:

<b>Group aggregate targets FY14-FY18</b>			
	Baseline data	Performance	
		FY16	FY15
<b>Baseline FY13</b>			
Reduce water used for primary activities (intensity and absolute) by 4.5%	Absolute: 18 556ML Intensity: 1.01m <sup>3</sup> /t	Absolute: 13 689ML Intensity: 0.76m <sup>3</sup> /t	Absolute: 14 614ML Intensity: 0.81m <sup>3</sup> /t
Total environmental legal compliance	0 fines	0 fines	1 fine
Improve percentage of water recycled (intensity and absolute) by 5%	60%	73%	72%
Implement 80% of biodiversity action plans	All South African operations have biodiversity action plans in place		
Reduce land available for rehabilitation by 2%	9 948ha	9 057ha	9 454ha
<b>Baseline FY08</b>			
Reduce absolute electricity consumption by 3%	4 422 000MWh	2 439 597	2 667 375MWh
Reduce intensity of electricity consumption by 2%	0.35MWh/t	0.13MWh/t	0.15MWh/t
Reduce total carbon emissions by 3%	5 343 000 t CO <sub>2</sub> e	3 251 949 t CO <sub>2</sub> e	3 439 536t CO <sub>2</sub> e
Reduce carbon emission intensity by 2%	0.3t CO <sub>2</sub> e/t	0.179 t CO <sub>2</sub> e	0.19t CO <sub>2</sub> e/t

# MINING CHARTER COMPLIANCE SCORECARD

Harmony is a truly empowered company and we report on our performance in relation to the Mining Charter throughout this integrated report. The table below sets out our performance in relation to the specific requirements of the Mining Charter, as gazetted in 2010, and our progress in terms of the targets it set for 2014.

A revised draft of the Mining Charter was published in April 2016 and Harmony, through the Chamber of Mines, is currently engaging with government on the content of the proposed Mining Charter, which has yet to be finalised.

## PROGRESS AGAINST MINING CHARTER TARGETS

The Mining Charter serves as a guide to the industry, focusing the transformation journey on nine key elements. A template designed by the Department of Mineral Resources enables mining companies to provide the information necessary to assess their success in achieving key Mining Charter targets.

The following table provides a synopsis of our performance against the targets for each of the Mining Charter's nine pillars for the calendar year ended 31 December 2015.

<b>1. Reporting</b>	
We are required to report the level of compliance with the Mining Charter by calendar year.	
<b>Target</b>	<b>Compliance as at 31 December 2015</b>
Annually	✓
<b>2. Ownership</b>	
We are required to transfer 26% of Harmony's equity to historically disadvantaged South African entities. Beneficiaries could include entrepreneurs, employees and community trusts.	
<b>Target</b>	<b>Compliance as at 31 December 2015</b>
26%	More than 26%
<b>3. Housing and living conditions</b>	
Mining companies housing employees in hostels are required to provide single-person rooms, as well as family units.	
<b>Target</b>	<b>Compliance as at 31 December 2015</b>
Occupancy rate of one room per person Family units established	100% Hostels have been upgraded to allow for one person per room, converting some hostels into family units and establishing home ownership programmes which include the construction of houses. Harmony is working in partnership with the Department of Human Settlements to convert old hostels into family units. Masimong has been completed while Merriespruit is in progress. A key challenge was to comply fully regarding the Doornkop mining licence. For more information, please refer to the Employees and Communities section.
<b>4. Procurement and enterprise development</b>	
We are required to achieve a certain level of procurement spending with black-owned entities in order to encourage the economic empowerment and development of such suppliers.	
<b>Target</b>	<b>Compliance as at 31 December 2015</b>
Capital goods: 40% Services: 70%	Capital goods: 83% Services: 81%

Consumer goods: 50% Annual contribution by multinational suppliers to socio-economic development: 0.5% of the value of any supply contract	Consumer goods: 77% Harmony engages with all its multinational suppliers urging them to contribute to socio-economic development, as prescribed by the Mining Charter. Harmony is also exploring the potential of a Harmony-supported fund for this same purpose, which will allow for proper monitoring of contributions made by our suppliers. Harmony has done much to empower and develop black-owned suppliers and/or to encourage ownership transformation of supplier companies. For more details, see Procurement in the Employees and Communities section.
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## 5. Employment equity

Workplace diversity and equitable representation by historically disadvantaged South Africans at all levels with the company are seen as catalysts for social cohesion, transformation and competitiveness. Representation by historically disadvantaged South Africans:

Target	Compliance as at 31 December 2015
Board: 40%	Board: 57%
Senior management (executive committee): 40%	Senior management (executive committee): 45%
Middle management: 40%	Middle management: 46%
Junior management: 40%	Junior management: 61%
Core skills: 40%	Core skills: 66%
	Specific emphasis is placed on demographic representation and of that by women in particular. Although all group-wide employment equity targets have been met, further efforts are being made to ensure we are fully transformed at an operational level as well.

## 6. Human resource development

Employee skills development is integral to social transformation in the workplace and to sustainable growth. We are required to contribute to the development of the requisite skills and to support South African-based research and development initiatives intended to develop solutions to exploration, mining, processing, technology efficiency, beneficiation and environmental conservation challenges.

Target	Compliance as at 31 December 2015
Percentage of total payroll to be invested: 5%	Percentage of payroll invested: 6.1%

## 7. Mine community development

To achieve our social licence to operate, we need to make meaningful contributions towards community development, particularly in communities close to the mines and in labour-sending areas. Development programmes must be based on a clear assessment of development needs, in line with local Integrated Development Plans.

Target	Compliance as at 31 December 2015
Plan implementation as at 30 December 2015	90%

## 8. Sustainable development and growth

Given that mineral resources are non-renewable, it is important to balance the economic benefits of mining with the social and environmental needs of our communities and thus we are required to meet specific obligations in respect of health, safety and environmental management. As one of the most-regulated

industries in South Africa, the mining industry has highly developed health, safety and environmental strategies in place to improve the industry's management and performance in this regard.

Target	Compliance as at 31 December 2015
Implementation of approved	Implementation of approved Environmental Management Programmes: 100%
Environmental Management Programmes: 100%	Refer to the Environmental Performance section for more details.
Use of South African-based research facilities for the analysis of samples: 100%	Percentage of samples analysed at South African research facilities: 100%

**9. Beneficiation**

The Mining Charter encourages South African mining companies to beneficiate the minerals they mine. As an incentive, beneficiation advances may be used to offset black economic empowerment ownership requirements. We benefit from our shareholding in Rand Refinery (Pty) Limited. All our gold is fully refined and beneficiated to final product within South Africa for sale to customers. In addition, Harmony beneficiates the gold it produces at its jewellery school in Welkom. The first commercial outlets supplied by the school were opened in April 2015.

TOTAL SCORE:		88%
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# OPERATIONAL PERFORMANCE

Achievements FY16	Challenges FY16
<ul style="list-style-type: none"> <li>• Safety performance improved by 33% in terms of lost-time injuries</li> <li>• Produced 1.082Moz of gold, in line with guidance</li> <li>• Underground grade recovered increased, for the fourth consecutive year, to 5.02g/t</li> <li>• Bambanani remained the lowest cost underground mine with an all-in sustaining cost of US\$654/oz and the highest underground recovered grade at our South African operations of 12.99g/t</li> <li>• Phakisa performed best in comparison to the previous year recording a 28% increase in production and a 14% increase in recovered grade</li> <li>• Sustained productivity improvements</li> </ul>	<ul style="list-style-type: none"> <li>• Increasing margins and profitability at Kusasalethu and Hidden Valley</li> <li>• Infrastructure and equipment maintenance to prevent failures</li> <li>• Continued focus on maintaining and increasing productivity levels</li> </ul>

## WHY OUR OPERATIONAL PERFORMANCE IS MATERIAL

Gold mining and gold production are central to Harmony's existence. Maintaining and growing our margins as efficiently as we can is essential to sustaining our business and meeting our strategic objectives. This includes delivering safely on our operational plans, reducing costs, improving productivity and maximising revenue.

Our approach takes into consideration the long-term sustainability of the company as a whole. We aim to mine those areas which will return a positive cash flow.

The revenue we generate and ultimately the profit we make are determined by the price received for the gold we sell, and this is determined by the prevailing gold price measured in US dollars on world markets. Furthermore, the prices received in our operational and functional currencies – the South Africa rand and the Papua New Guinea kina which affect 93% and 7% of our production respectively – are governed by the prevailing exchange rates in terms of the US dollar. The kina is our functional currency in Papua New Guinea and these values are in turn converted into rands, Harmony's presentation currency.

We are price takers and have no influence on the gold price or exchange rates. However, the effect of a lower US dollar gold price has been mitigated by a decline in the exchange rate of the rand and/or kina versus the US dollar, which increases the rand price and/or kina price received per ounce of gold. The contra-cyclical behaviour of the US dollar price of gold and the rand-US dollar and kina-US dollar exchange rate often work to our advantage.

## OPERATING PERFORMANCE FY16

Our focus is on producing profitable ounces, safely, and good progress was made in FY16. Increased production mainly at Tshepong and Phakisa, as well as at Bambanani, Doornkop, Joel, Unisel and the surface rock dumps offset declines in production at other operations.

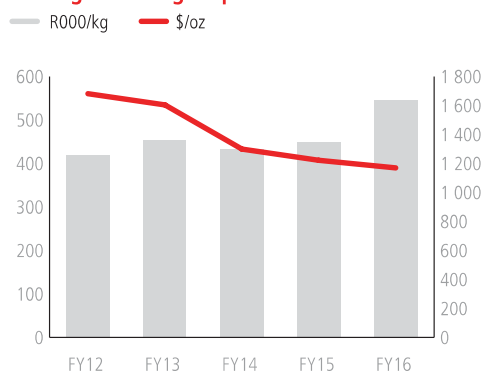
Higher gold production in FY16, together with a higher average rand gold price received, delivered a 19% increase in revenue to R18.3 billion (a 6% decrease to US\$1.27 billion). The average rand gold price increased by 21% to R544 984/kg (FY15: R449 570/kg), owing to a 27% weakening of the rand against the US dollar to US\$/R14.50 (offsetting the 4% decrease in the average gold price received to US\$1 169/oz).

During FY16, we persisted with efforts to reduce and contain costs and to restructure our operations for profitability. Despite increases, especially in power and labour costs, cash operating costs in rand terms increased by just 6% year-on-year (16% decrease in US dollars). Overall, cost increases were lower than inflation, with all-in sustaining cost for all operations increasing by only 3% to R467 526/kg, compared to R453 044/kg in FY15 (decrease of 19% to US\$1 003/oz from US\$1 231/oz in FY15).

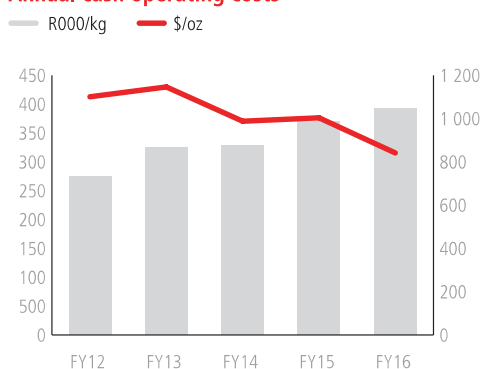
We continue to closely monitor the grade mined and to strictly apply our grade mining principles. The average grade recovered for FY16 increased for the fourth consecutive year. At 5.02g/t for the year, this was 6% higher than in FY15 and 18% higher than in FY12.

Given our focus on margins and the production of profitable ounces, we have reviewed the life-of-mine plans at our higher cost operations. Bambanani, Phakisa and Tshepong together with Phoenix and the surface operation recorded margins of more than 20%. At Kusasaletu, negative cash flows and operating losses resulted in a revision of its life of mine plan to five years with the emphasis on safety and profitability. In addition, we have begun implementing harvesting plans at the low-grade Unisel and Masimong mines.

### Average annual gold price received



### Annual cash operating costs

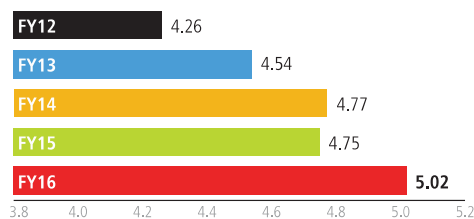


### Contribution to group production by operation (%)



Tshepong	15%	Phakisa	12%
Kusasaletu	12%	Target 1	10%
Bambanani	9%	Doornkop	8%
Masimong	7%	Joel	7%
Hidden Valley	7%	Unisel	5%
Kalgold	3%	Surface dumps	3%
Phoenix	2%		

### Annual underground grade recovered (g/t)



## MAJOR CHALLENGES IN FY16

The major challenges faced during the year and their respective mitigation plans were:

**Safety:** While safety remains Harmony's key priority and various safety initiatives contributed to improved performance in term of lost-time injuries, there were regrettably 10 fatalities (FY15: 9) at our operations during FY16. These fatalities, together with the section 54/55 notices issued by the Department of Mineral Resources to suspend operations until they were declared safe, resulted in an estimated production loss of 203kg (7 157oz). For more detailed information on our safety performance, please refer to the section on Safety and Health of this report.

**Infrastructure and equipment failure:** Infrastructure and equipment maintenance remains a daily focus at all our mines. Senior engineering capacity and safety management have been enhanced in order to combat and prevent infrastructure and equipment failures.

**Managing operational risks:** Operational risk management is integral to our business, and to optimise the gold mining value chain, it is essential to have in place a risk management plan to ensure that all supporting systems are functioning efficiently. Managing risks effectively while working safely and being proactive are core to our success. Safety hazards and operational business risks are identified and dealt with continuously at each of our operations. During FY16, two chief operating officers, who report directly to the chief executive officer, were appointed, one with responsibility for the South African operations and the other with responsibility for safety, mining projects, new business development and corporate strategy.

**Delivering on our growth projects and planned mining grades:** Delivery on planned growth is vital to deliver on our strategy. The Tshepong-Phakisa integration project is on track and the Joel decline project is scheduled to be completed in FY17. Both these projects will contribute to the production of higher-grade ore. Our code for the mining of grade is strictly applied. No mining takes place below the cut-off grade, we mine only to the average reserve grade and only quality grade ore is mined.

**Achieving our operational plans:** Production from our South African operations increased by 3% as we began to reap the benefits of development. Increased levels of production at Phakisa, Tshepong, Bambanani and Doornkop in particular contributed to this, offsetting declines at Hidden Valley, Target 1, Kalgold and Kusasaletu.

**Increasing recovered grades remains a key objective:** The closure of loss-making mining sections at Kusasaletu will have a positive effect on the overall grade in FY16. The total average underground grade recovered for the year increased to 5.02g/t in FY16 from 4.75g/t in FY15.

**Productivity:** More easily accessible healthcare via our health hubs has contributed to reduced levels of absenteeism and sick leave. As high blood pressure is one of our most serious healthcare concerns, these health hubs enable us to better monitor employee health and treatment programmes. For more information, please refer to the section on Safety and Health of this report.

The benefits of a healthier workforce were reflected in improved productivity rates at year-end, with overall productivity per in-service employee including contractors of 45.6t per employee (FY15: 43.6t per employee). Employees qualify for various bonuses based mainly on safety performance, tonnes and grades mined and costs – all in an effort to increase productivity.

## OUTLOOK FOR FY17

### Relevant Global Reporting Initiative indicators: G4-EC7 and G4-EC8

#### Our approach towards our FY17 operational planning:

Our FY17 annual production guidance is in line with our medium-term strategic target to achieve annual production of 1.5Moz at a cost of less than US\$950/oz within three years (by FY19) and in so doing to increase our margins. In terms of our strategic plan for the next three years, our target for FY17 is to produce 1.05Moz at a total cost, including capital, of R495 000/kg (US\$1 100/oz). These costs assume an estimated increase in inflation of approximately 6% in rands terms. Planned capital expenditure of R2.8 billion (US\$200 million) is in line with our strategy.

#### Highlights of what we expect for FY17:

- All operations to be profitable by the end of the financial year
- A marginal decline in total production to 1.05Moz while the underground recovered grade is maintained
- Bambanani to remain the most profitable operation in South Africa and in the group as a whole – to continue mining the high-grade pillar
- Tshepong's production to increase on higher volumes and a higher recovered grade
- Phakisa to increase profitability as production build up continues
- Joel to increase its cash flow, given the start of production from the decline project
- Masimong to remain profitable with a shorter life of mine, following restructuring
- Doornkop to continue generating a profit in FY17, post its restructuring in FY15
- Kusasalethu to return to profitability by focusing on high-grade areas in the short term

Harmony's production guidance is based on a gold price of R495 000/kg (or US\$1 100/oz) and an exchange rate of R14.00/US\$ for FY17. Our guidance per operation for FY17 is provided below:

FY17 forecast and guidance				
Operation	Production	All-in sustaining cost <sup>1</sup>		Life of mine
	(oz)	(R/kg)	(US\$/oz)	(years)
Tshepong	155 000	495 000	1 100	19
Phakisa	135 000	485 000	1 080	10
Bambanani	90 000	350 000	780	5
Target 1	110 000	465 000	1 040	10
Doornkop	85 000	540 000	1 210	17
Joel	67 500	465 000	1 040	11
Kusasalethu	140 000	525 000	1 170	5
Masimong	67 500	525 000	1 170	3
Unisel	55 000	510 000	1 130	6
Underground operations – total	905 000	485 000	1 080	
South Africa surface operations (including Kalgold)	97 500	490 000	1 100	14+
Hidden Valley <sup>2</sup>	<sup>5</sup> 47 500	635 000	1 420	
<b>Total</b>	<sup>4</sup> ~ 1.05Moz	~ R495 000/kg	<sup>3</sup> ~ US\$1 100/oz	

<sup>1</sup> All-in sustaining cost excludes share-based payments

<sup>2</sup> Post year-end, Harmony entered into a transaction to fully acquire Hidden Valley

<sup>3</sup> At an exchange rate of R14.00/US\$

<sup>4</sup> At a grade of ~5.13g/t

<sup>5</sup> 50% of total production, representing Harmony's share as at 30 June 2016

## SOUTH AFRICA – DEEP-LEVEL MINING

### Tshepong

		FY16	FY15	FY14
<b>Number of employees</b>				
– Permanent		4 232	4 218	4 132
– Contractors		250	210	216
Total		4 482	4 428	4 348
<b>Operational</b>				
Volumes milled	(000t) (metric)	1 088	992	947
	(000t) (imperial)	1 200	1 095	1 044
Gold produced	(kg)	5 031	4 278	4 223
	(oz)	161 751	137 540	135 772
Gold sold	(kg)	5 029	4 337	4 204
	(oz)	161 685	139 437	135 161
Grade	(g/t)	4.62	4.31	4.46
	(oz/t)	0.135	0.126	0.130
Productivity	(g/TEC)	100.52	86.05	84.33
<b>Development results</b>				
Total metres		12 077	13 053	12 762
Reef metres		1 745	1 822	2 209
Capital metres		0	0	79
<b>Financial</b>				
Revenue	(Rm)	2 756	1 948	1 822
	(US\$m)	190	170	176
Average gold price received	(R/kg)	547 967	449 211	433 425
	(US\$/oz)	1 176	1 221	1 302
Cash operating cost	(Rm)	1 845	1 588	1 379
	(US\$m)	127	139	133
Production profit/(loss)	(Rm)	912	337	457
	(US\$m)	63	29	44
Capital expenditure	(Rm)	307	313	301
	(US\$m)	21	27	29
Cash operating cost	(R/kg)	366 767	371 149	326 498
	(US\$/oz)	787	1 008	981
All-in sustaining cost	(R/kg)	438 401	454 512	407 093
	(US\$/oz)	940	1 235	1 223
<b>Safety</b>				
Number of fatalities		0	1	2
Lost-time injury frequency rate per million hours worked		6.40	5.72	8.33
<b>Environment</b>				
Electricity consumption	(GWh)	301	307	301
Water consumption – primary activities	(ML)	1 230	1 110	1 090
Greenhouse gas emissions	(000t CO2e)	306	316	299
Intensity data per tonne treated				
– energy		0.27	0.31	0.32
– water		1.13	1.12	1.15
– greenhouse gas emissions		0.27	0.32	0.32

		FY16	FY15	FY14
Number of reportable environmental incidents		0	0	1
<b>Community</b>				
Local economic development*	(Rm)	7	33	30
Training and development	(Rm)	37	33	24
* Included in the total for FY15 is an amount of R24 million that was capitalised as part of the hostel upgrades (FY16: R0 million)				
<b>Other salient features</b>				
Status of operation	Steady state operation: development continues			
Life of mine	19 years			
Hoisting capacity (per month)	214 000 tonnes (235 892 tons)			
Compliance and certification	New order mining right – December 2007 ISO 14001 ISO 9001			

### Mineral reserves as at 30 June 2016

Reserves (metric)	Proved reserves			Probable reserves			Total mineral reserves		
	Tonnes (Mt)	Grade (g/t)	Gold (000kg)	Tonnes (Mt)	Grade (g/t)	Gold (000kg)	Tonnes (Mt)	Grade (g/t)	Gold (000kg)
	17.1	5.49	94	3.5	4.39	16	20.7	5.30	110
Reserves (imperial)	Tons (Mt)	Grade (oz/t)	Gold (000oz)	Tons (Mt)	Grade (oz/t)	Gold (000oz)	Tons (Mt)	Grade (oz/t)	Gold (000oz)
	18.9	0.160	3 022	3.9	0.128	500	22.8	0.155	3 522

Tshepong is located in the Free State Province, near Welkom, about 248km from Johannesburg. Mining is conducted to a depth of 2 349m. The mine uses conventional undercut mining in the Basal Reef while the B Reef is exploited as a high grade secondary reef. Ore mined is processed at the Harmony One plant.

During FY16, no fatalities occurred and Tshepong achieved 2 million fatality-free shifts at the end of May 2016.

In FY16, Tshepong was Harmony's largest contributor to gold production and production profit. Increased productivity and focus on mining efficiencies contributed to the improved performance in FY16. The continued build-up in production from the sub-66 decline is driving the improvement in grade.

Gold production increased by 18% to 5 031kg (161 751oz) in FY16, primarily due to an increase in volumes and improved grade recoveries. Ore milled increased by 10% to 1 088 000 tonnes (1 200 000 tons), while recovered gold grade increased by 7% to 4.62g/t (0.135 oz/t). The increase in gold production and the average rand gold price received (by 22% to R547 967) resulted in a 41% increase in revenue to R2 756 million (12% increase to US\$190 million).

Poor ground conditions affected progress of the sub-71 major capital project during FY16. A project team is in the process of compiling the feasibility study for the sub-75 decline extension project down to 77 level. A study is underway to investigate further synergies with the integration of the Tshepong and Phakisa mines and ways of optimising these synergies so as to improve the financial metrics of the combined operation, as Tshepong's infrastructure is under-utilised.

Cash operating costs increased by 16% to R1 845 million (decreased by 9% to US\$127 million) mainly due to increased production in FY16, labour cost increases and higher electricity tariffs.

Capital expenditure decreased by 2% to R307 million (decreased by 22% to US\$21 million). Capital was mainly spent on ongoing development.

Challenges receiving management's attention are to manage the geologically complex (excessive fault and dyke intrusions) decline area and illegal mining activities.

## Phakisa

		FY16	FY15	FY14
<b>Number of employees</b>				
– Permanent		3 547	3 344	3 460
– Contractors		350	392	325
Total		3 897	3 736	3 785
<b>Operational</b>				
Volumes milled	(000t) (metric)	686	611	577
	(000t) (imperial)	756	674	636
Gold produced	(kg)	3 988	3 118	2 976
	(oz)	128 217	100 246	95 680
Gold sold	(kg)	3 991	3 156	2 963
	(oz)	128 314	101 468	95 263
Grade	(g/t)	5.81	5.10	5.16
	(oz/t)	0.170	0.149	0.150
Productivity	(g/TEC)	93.54	76.99	70.72
<b>Development results</b>				
Total metres		11 022	12 138	11 298
Reef metres		1 785	1 749	1 364
Capital metres		0	162	101
<b>Financial</b>				
Revenue	(Rm)	2 186	1 420	1 284
	(US\$m)	151	124	124
Average gold price received	(R/kg)	547 829	449 969	433 199
	(US\$/oz)	1 175	1 223	1 302
Cash operating cost	(Rm)	1 378	1 166	1 068
	(US\$m)	95	102	103
Production profit/(loss)	(Rm)	811	239	223
	(US\$m)	56	21	21
Capital expenditure	(Rm)	323	403	360
	(US\$m)	22	35	35
Cash operating cost	(R/kg)	345 457	373 876	358 995
	(US\$/oz)	741	1 016	1 079
All-in sustaining cost	(R/kg)	436 477	495 644	478 645
	(US\$/oz)	936	1 347	1 438
<b>Safety</b>				
Number of fatalities		2	0	1
Lost-time injury frequency rate per million hours worked		6.64	8.76	7.73
<b>Environment</b>				
Electricity consumption	(GWh)	152	143	126
Water consumption – primary activities	(ML)	1 254	1 155	1 090
Greenhouse gas emissions	(000t CO <sub>2</sub> e)	154	147	125
Intensity data per tonne treated				
– energy		0.22	0.23	0.22
– water		1.83	1.89	1.89
– greenhouse gas emissions		0.22	0.24	0.22

		FY16	FY15	FY14
Number of reportable environmental incidents		0	0	0
<b>Community</b>				
Local economic development*	(Rm)	6	12	11
Training and development	(Rm)	35	32	30
* Included in the total for FY15 is an amount of R3 million that was capitalised as part of the hostel upgrades (FY16: R0 million)				
<b>Other salient features</b>				
Status of operation	Production ramp up continues			
Life of mine	10 years			
Hoisting capacity (per month)	103 000 tonnes (113 537 imperial tons)			
Compliance and certification	New order mining right – December 2007 ISO 14001 ISO 9001 OHSAS 18001			

### Mineral reserves as at 30 June 2016

Reserves (metric)	Proved reserves			Probable reserves			Total mineral reserves		
	Tonnes (Mt)	Grade (g/t)	Gold (000kg)	Tonnes (Mt)	Grade (g/t)	Gold (000kg)	Tonnes (Mt)	Grade (g/t)	Gold (000kg)
	5.6	6.56	37	1.9	7.17	14	7.5	6.72	50
Reserves (imperial)	Tons (Mt)	Grade (oz/t)	Gold (000oz)	Tons (Mt)	Grade (oz/t)	Gold (000oz)	Tons (Mt)	Grade (oz/t)	Gold (000oz)
	6.2	0.191	1 185	2.1	0.209	437	8.3	0.196	1 622

Phakisa is located in the Free State Province, some 252km from Johannesburg. The mine has two shafts, the main Phakisa shaft and the Nyala shaft. The latter is used to hoist rock and serves as a second escape route. Phakisa exploits the Basal Reef. Mining is conducted to a depth of 2 426m. Ore mined is processed at the Harmony One plant. Phakisa is still building up to full production which is expected within the next 18 months.

The lost-time injury frequency rate improved by 24% to 6.64 per million hours worked in FY16. Regrettably two fatalities occurred during the year.

In line with the planned build-up of production at Phakisa, gold production increased by 28% to 3 988kg (128 217oz), as a result of the 12% increase in the ore milled (to 686 000 tonnes or 756 000 tons) and the 14% increase in the recovered grade to 5.81g/t (0.170oz/t).

Phakisa is delivering on plan and consistently meeting development targets. Increased focus on efficiencies and productivity will further enhance the operating margin of the operation. Management are conducting optimisation studies to integrate the Tshepong and Phakisa mines.

The increase in gold production and 22% increase in the average rand gold price received resulted in a 54% increase in revenue to R2 186 million (22% increase to US\$151 million).

Cash operating costs increased by 18% to R1 378 million (decreased by 7% to US\$95 million) due to increased production and an increase in wages and electricity tariffs.

Capital expenditure decreased by 20% to R323 million (37% to US\$22 million), primarily due to the completion of the major capital projects in the prior year. Capital was spent mainly on ongoing development in FY16.

Risks receiving management's focus include managing logistical challenges including the single-man winder arrangement, the Koepe rock winder and the rail-veyor<sup>TM</sup> ore-handling system.



## Bambanani

		FY16	FY15	FY14
<b>Number of employees</b>				
– Permanent		1 491	1 517	1 584
– Contractors		321	330	444
Total		1 812	1 847	2 028
<b>Operational</b>				
Volumes milled	(000t) (metric)	232	229	206
	(000t) (imperial)	256	253	227
Gold produced	(kg)	3 013	2 908	2 576
	(oz)	96 870	93 495	82 821
Gold sold	(kg)	3 015	2 947	2 567
	(oz)	96 934	94 748	82 530
Grade	(g/t)	12.99	12.70	12.50
	(oz/t)	0.378	0.370	0.365
Productivity	(g/TEC)	156.54	153.08	157.73
<b>Development results</b>				
Total metres		1 743	1 150	1 092
Reef metres		105	15	0
Capital metres		0	0	0
<b>Financial</b>				
Revenue	(Rm)	1 617	1 330	1 111
	(US\$m)	112	116	107
Average gold price received	(R/kg)	536 410	451 200	432 706
	(US\$/oz)	1 151	1 226	1 300
Cash operating cost	(Rm)	808	697	574
	(US\$m)	56	61	55
Production profit/(loss)	(Rm)	806	625	537
	(US\$m)	56	55	52
Capital expenditure	(Rm)	106	110	125
	(US\$m)	7	10	12
Cash operating cost	(R/kg)	268 305	239 552	222 764
	(US\$/oz)	576	651	669
All-in sustaining cost	(R/kg)	304 634	270 623	255 500
	(US\$/oz)	654	735	768
<b>Safety</b>				
Number of fatalities		0	1	1
Lost-time injury frequency rate per million hours worked		3.59	4.63	7.46
<b>Environment</b>				
Electricity consumption	(GWh)	140	133	143
Water consumption – primary activities	(ML)	1 434	1 731	1 665
Greenhouse gas emissions	(000t CO2e)	142	137	142
Intensity data per tonne treated				
– energy		0.60	0.59	0.69
– water		6.18	7.57	8.08
– greenhouse gas emissions		0.60	0.61	0.69

Number of reportable environmental incidents		0	0	0
<b>Community</b>				
Local economic development	(Rm)	9	3	3
Training and development*	(Rm)	25	17	13
* Expenditure on training and development at Bambanani includes that at Steyn 2 for FY14				
<b>Other salient features</b>				
Status of operation	Mature operation with focus on mining of the shaft pillar for the next few years after which it will reach the end of its operating life			
Life of mine	5 years			
Hoisting capacity (per month)	32 256 tonnes (35 556 tons)			
Compliance and certification	New order mining right – December 2007 ISO 14001 ISO 9001 OHSAS 18001			

### Mineral reserves as at 30 June 2016

Reserves (metric)	Proved reserves			Probable reserves			Total mineral reserves		
	Tonnes (Mt)	Grade (g/t)	Gold (000kg)	Tonnes (Mt)	Grade (g/t)	Gold (000kg)	Tonnes (Mt)	Grade (g/t)	Gold (000kg)
	1.3	11.08	14	–	–	–	1.3	11.08	14
Reserves (imperial)	Tons (Mt)	Grade (oz/t)	Gold (000oz)	Tons (Mt)	Grade (oz/t)	Gold (000oz)	Tons (Mt)	Grade (oz/t)	Gold (000oz)
	1.4	0.323	449	–	–	–	1.4	0.323	449

Bambanani, near Welkom and about 262km from Johannesburg, has two surface shafts (the East and West shafts). Mining is conducted to a depth of 2 365m. Activities at the mine focus on the Basal Reef and are limited to shaft pillar extraction. The ore mined is sent to Harmony One Plant for processing. Given the high risk of seismicity at Bambanani, efforts are focused on managing support systems and the rehabilitation of areas with challenging ground conditions.

The safety performance at Bambanani improved in FY16. No fatalities occurred and the lost-time injury frequency rate improved by 22% to 3.59 per million hours worked. The shaft management team remains committed to improving the safety performance of the operation.

Bambanani's all-in sustaining costs are less than US\$700/oz (R310 000/kg), and is one of Harmony's most profitable mines.

The decline shaft was commissioned towards the end of FY16 and is expected to be completed during the September 2016 quarter. All reef is now being hoisted via West Shaft, while the hoisting of waste will continue at East Shaft for the duration of the mining of the shaft pillar.

Gold production increased by 4% to 3 013kg (96 870oz) in FY16. This was primarily due to the increase in recovered grade and ore production. Recovered grade increased by 2% to 12.99g/t (0.378oz/t), while ore milled increased by 1% to 232 000 tonnes (256 000 tons).

Despite the overall increase in production and grade, production during the second half of the financial year was impacted by stoppages and delays caused by a shaft infrastructure accident. Aging infrastructure resulted in electrical cables being dislodged from their mountings causing damage to parts of the mine. A comprehensive programme and engineering strategy has been implemented to mitigate this risk going forward. Further production delays were caused by underground fires started by illegal miners in a mined out area. Fire mitigation plans, equipment and infrastructure upgrades have been implemented to protect the mining area.

The increases in gold production and the 19% increase in the average rand gold price received in FY16 contributed to a 22% increase in revenue to R1 617 million (3% decrease to US\$112 million mainly due to the 27% weakening of the rand/us dollar exchange rate to R14.50, mainly offset by the increase in the rand gold price).

Cash operating costs increased by 16% to R808 million (or 8% to US\$56 million), mainly due to an increase in labour costs arising from the wage agreement settlement and shaft related performance bonuses. Electricity costs increased due to increased electricity tariffs and consumption during FY16.

Capital expenditure decreased by 4% to R106 million (a decrease of 30% to US\$7 million). Most of this was spent on the decline shaft project and ongoing capital development.

## Target 1

		FY16	FY15	FY14
<b>Number of employees</b>				
– Permanent		1 653	1 683	1 624
– Contractors		272	266	270
Total		1 925	1 949	1 894
<b>Operational</b>				
Volumes milled	(000t) (metric)	739	749	771
	(000t) (imperial)	814	826	851
Gold produced	(kg)	3 387	3 824	4 493
	(oz)	108 895	122 944	144 453
Gold sold	(kg)	3 419	3 868	4 508
	(oz)	109 923	124 358	144 936
Grade	(g/t)	4.58	5.11	5.83
	(oz/t)	0.134	0.149	0.170
Productivity	(g/TEC)	155.77	172.25	206.06
<b>Development results</b>				
Total metres		3 459	4 174	4 292
Reef metres		182	290	436
<b>Financial</b>				
Revenue	(Rm)	1 833	1 738	1 948
	(US\$m)	126	152	188
Average gold price received	(R/kg)	536 196	449 319	432 031
	(US\$/oz)	1 150	1 221	1 298
Cash operating cost	(Rm)	1 242	1 178	1 049
	(US\$m)	86	103	101
Production profit/(loss)	(Rm)	583	547	897
	(US\$m)	40	48	87
Capital expenditure	(Rm)	322	296	289
	(US\$m)	22	26	28
Cash operating cost	(R/kg)	366 814	308 156	233 487
	(US\$/oz)	787	837	702
All-in sustaining cost	(R/kg)	471 876	395 669	306 605
	(US\$/oz)	1 012	1 075	921
<b>Safety</b>				
Number of fatalities		2	0	0
Lost-time injury frequency rate per million hours worked		4.91	4.51	1.30
Environment				
Electricity consumption	(GWh)	247	242	242
Water consumption – primary activities	(ML)	808	808	790

		FY16	FY15	FY14
Greenhouse gas emissions	(000t CO2e)	251	249	251
Intensity data per tonne treated				
– energy		0.33	0.32	0.31
– water		1.09	1.22	1.02
– greenhouse gas emissions		0.33	0.33	0.31
Number of reportable environmental incidents		0	0	0
<b>Community</b>				
Local economic development	(Rm)	4	4	4
Training and development	(Rm)	34	30	20
<b>Other salient features</b>				
Status of operation	Single, cost efficient shaft operation.			
Life of mine	10 years			
Hoisting capacity (per month)	89 994 tonnes (99 200 tons)			
Compliance and certification	New order mining right – December 2007 ISO 14001, ISO 9001, OHSAS 18001			

### Mineral reserves as at 30 June 2016

Reserves (metric)	Proved reserves			Probable reserves			Total mineral reserves		
	Tonnes (Mt)	Grade (g/t)	Gold (000kg)	Tonnes (Mt)	Grade (g/t)	Gold (000kg)	Tonnes (Mt)	Grade (g/t)	Gold (000kg)
	2.7	4.59	12	3.9	4.75	18	6.6	4.69	31
Reserves (imperial)	Tons (Mt)	Grade (oz/t)	Gold (000oz)	Tons (Mt)	Grade (oz/t)	Gold (000oz)	Tons (Mt)	Grade (oz/t)	Gold (000oz)
	3.0	0.134	401	4.3	0.139	591	7.3	0.137	992

Target 1 is located in the Free State Province, some 270km southwest of Johannesburg. Mining operations at Target 1 comprise one primary underground mine, to a depth of approximately 2 945m. While most of the ore extracted comes from mechanised mining (massive mining techniques), conventional stoping is still employed primarily to de-stress areas ahead of mechanised mining. Ore mined is processed at the Target plant. The gold mineralisation currently exploited at Target 1 is contained within a succession of Elsburg and Dreyerskuil quartz pebble conglomerate reefs.

Target 1 manages its risks by focusing on trackless development to ensure the timeous availability of massive stopes and to prevent excessive dilution from waste and backfill in the pillar areas which could impact negatively on the delivered grade. Future success will depend on the availability of trackless mining equipment and performance regarding volumes and grade.

The lost-time injury frequency rate increased by 9% to 4.91 per million hours worked in FY16. Regrettably two fatalities occurred during the year.

Gold production decreased by 11% to 3 387kg (108 895oz) in FY16. The Target 1 operation was adversely impacted by safety and work stoppages during the third quarter of FY16. Under performance on trackless development to access the higher grade massive stopes also impacted grade recoveries.

As a result, the recovered gold grade declined by 10% to 4.58g/t (0.134oz/t) and ore milled declined by 1% to 739 000 tonnes (814 000 tons). The decrease in gold production was offset by an increase in the average gold price received (19% to R536 196/kg) resulting in a 5% increase in revenue to R1 833 million (17% decrease to US\$126 million).

Cash operating costs rose by 5% to R1 242 million (17% decrease to US\$86 million). Reduced expenditure on consumables partially offset an increase in labour and electricity costs.

Capital expenditure increased by 9% to R322 million (decrease of 15% to US\$22 million) mainly due to the purchase of production vehicles and increase in ongoing development capital expenditure.

## Doornkop

		FY16	FY15	FY14
<b>Number of employees</b>				
– Permanent		2 471	2 977	2 836
– Contractors		443	493	736
Total		2 914	3 470	3 572
<b>Operational</b>				
Volumes milled	(000t) (metric)	630	603	737
	(000t) (imperial)	695	665	812
Gold produced	(kg)	2 730	2 663	2 603
	(oz)	87 772	85 618	83 687
Gold sold	(kg)	2 712	2 711	2 633
	(oz)	87 193	87 160	84 653
Grade	(g/t)	4.33	4.42	3.53
	(oz/t)	0.126	0.129	0.103
Productivity	(g/TEC)	83.49	68.47	63.57
<b>Development results</b>				
Total metres (excl. capital metres)		7 766	8 919	8 322
Reef metres		1 688	1 701	1 475
Capital metres		0	0	0
<b>Financial</b>				
Revenue	(Rm)	1 480	1 220	1 126
	(US\$m)	102	107	109
Average gold price received	(R/kg)	545 770	449 857	427 728
	(US\$/oz)	1 171	1 222	1 285
Cash operating cost	(Rm)	1 058	1 071	1 095
	(US\$m)	73	94	106
Production profit/(loss)	(Rm)	433	128	28
	(US\$m)	30	12	3
Capital expenditure	(Rm)	208	245	238
	(US\$m)	14	21	23
Cash operating cost	(R/kg)	387 585	402 065	420 617
	(US\$/oz)	831	1 092	1 264
All-in sustaining cost	(R/kg)	473 562	501 151	513 348
	(US\$/oz)	1 016	1 362	1 543
<b>Safety</b>				
Number of fatalities		0	1	11
Lost-time injury frequency rate per million hours worked		12.27	7.14	9.06
<b>Environment</b>				
Electricity consumption	(GWh)	203	205	187
Water consumption – primary activities	(ML)	1 135	733	1 010
Greenhouse gas emissions	(000t CO2e)	206	211	186
Intensity data per tonne treated				
– energy		0.32	0.34	0.25
– water		1.80	1.26	1.37
– greenhouse gas emissions		0.32	0.35	0.25

		FY16	FY15	FY14
Number of reportable environmental incidents		0	0	0
<b>Community</b>				
Local economic development*	(Rm)	4	37	25
Training and development	(Rm)	30	35	23
* Included in the total for FY16 is an amount of R1 million that was capitalised as part of the hostel upgrades (FY15: R28 million)				
<b>Other salient features</b>				
Status of operation	Mining takes place on the South Reef at this single-shaft operation.			
Life of mine	17 years			
Hoisting capacity (per month)	91 480 tonnes ( 100 839 tons)			
Compliance and certification	New order mining right – October 2008 ISO 14001, ISO 9001, OHSAS 18001			

### Mineral reserves as at 30 June 2016

Reserves (metric)	Proved reserves			Probable reserves			Total mineral reserves		
	Tonnes (Mt)	Grade (g/t)	Gold (000kg)	Tonnes (Mt)	Grade (g/t)	Gold (000kg)	Tonnes (Mt)	Grade (g/t)	Gold (000kg)
	1.7	5.03	9	2.6	5.21	13	4.3	5.14	22
Reserves (imperial)	Tons (Mt)	Grade (oz/t)	Gold (000oz)	Tons (Mt)	Grade (oz/t)	Gold (000oz)	Tons (Mt)	Grade (oz/t)	Gold (000oz)
	1.9	0.147	278	2.8	0.152	431	4.7	0.150	709

Doornkop, a single-shaft operation, is located in the Gauteng province of South Africa, approximately 30km west of Johannesburg, on the northern rim of the Witwatersrand Basin. Mining is conducted to a depth of 1 978m. The operation focuses on narrow-reef conventional mining of the South Reef. The ore from the operation is processed at the Doornkop plant.

There were no fatalities in FY16, however, the lost time injury frequency rate increased to 12.27 per million hours worked in FY16 compared to 7.14 in FY15. The shaft management team remains committed to improving the safety performance of the operation.

The Doornkop operation was restructured towards the end of FY15 to respond to the low gold price environment and the significant capital investment required to sustain the operations at this shaft. The section 189A process was concluded at the end of July 2015. The majority of employees and contractors affected were transferred to vacant positions at other operations.

Doornkop's life-of-mine plan focuses on mining the higher-grade areas of the South Reef ore body on 192 and 197 levels. Greater emphasis was placed on improving operating efficiencies in FY16. Gold production increased by 3% to 2 730kg (87 772oz) in FY16 mainly due to an increase in ore milled of 4% to 630 000 tonnes (630 000 tons). The recovered gold grade reduced marginally by 2% to 4.33g/t (0.126oz/t).

The increase in gold production, combined with the 21% increase in the average rand gold price received, resulted in a 21% increase in revenue to R1 480 million (the 5% decrease to US\$102 million is mainly due to the 27% weakening of the rand/US dollar average exchange rate to R14.50 in FY16, mostly offset by the increase in the rand gold price). Improved operational efficiencies, the increase in the rand gold price and in production resulted in the increased operating margin for Doornkop, which also contributed to the increased profitability of the updated life-of-mine plan for FY17.

Cash operating costs decreased by 1% to R1 058 million (decreased by 22% to US\$73 million).

Capital expenditure decreased by 15% to R208 million (decreased by 33% to US\$14 million) owing to reduced capital requirements resulting from the restructuring in FY15 and was spent mainly on development.

## Joel

		FY16	FY15	FY14
<b>Number of employees</b>				
– Permanent		1 796	1 818	1 594
– Contractors		97	81	189
Total		1 893	1 899	1 783
<b>Operational</b>				
Volumes milled	(000t) (metric)	542	551	548
	(000t) (imperial)	597	607	604
Gold produced	(kg)	2 278	2 258	2 335
	(oz)	73 239	72 596	75 072
Gold sold	(kg)	2 245	2 330	2 308
	(oz)	72 179	74 911	74 204
Grade	(g/t)	4.20	4.10	4.26
	(oz/t)	0.123	0.119	0.124
Productivity	(g/TEC)	117.33	115.65	125.78
<b>Development results</b>				
Total metres		3 541	3 200	2 881
Reef metres		2 315	1 037	1 079
Capital metres		485	338	993
<b>Financial</b>				
Revenue	(Rm)	1 220	1 046	995
	(US\$m)	84	91	96
Average gold price received	(R/kg)	543 442	449 026	430 929
	(US\$/oz)	1 166	1 220	1 295
Cash operating cost	(Rm)	845	755	688
	(US\$m)	58	66	66
Production profit/(loss)	(Rm)	389	276	327
	(US\$m)	27	24	32
Capital expenditure	(Rm)	215	182	145
	(US\$m)	15	16	14
Cash operating cost	(R/kg)	371 080	334 168	294 493
	(US\$/oz)	796	908	885
All-in sustaining cost	(R/kg)	424 617	384 022	330 648
	(US\$/oz)	911	1 043	994
<b>Safety</b>				
Number of fatalities		1	0	2
Lost-time injury frequency rate per million hours worked		3.49	3.72	3.25
<b>Environment</b>				
Electricity consumption	(GWh)	108	101	103
Water consumption – primary activities	(ML)	816	671	498
Greenhouse gas emissions	(000t CO <sub>2</sub> e)	109	104	102
Intensity data per tonne treated				
– energy		0.19	0.18	0.19
– water		1.50	1.22	0.91

		FY16	FY15	FY14
– greenhouse gas emissions		0.19	0.19	0.19
Number of reportable environmental incidents		0	0	0
<b>Community</b>				
Local economic development	(Rm)	3	3	3
Training and development	(Rm)	15	15	11
<b>Other salient features</b>				
Status of operation	Twin-shaft operation – technically challenging			
Life of mine	11 years			
Hoisting capacity (per month)	47 174 tonnes (52 000 tons)			
Compliance and certification	New order mining right – December 2007 ISO 14001 ISO 9001 OHSAS 18001			

### Mineral reserves as at 30 June 2016

Reserves (metric)	Proved reserves			Probable reserves			Total mineral reserves		
	Tonnes (Mt)	Grade (g/t)	Gold (000kg)	Tonnes (Mt)	Grade (g/t)	Gold (000kg)	Tonnes (Mt)	Grade (g/t)	Gold (000kg)
	2.6	5.26	14	3.0	4.61	14	5.5	4.91	27
Reserves (imperial)	Tons (Mt)	Grade (oz/t)	Gold (000oz)	Tons (Mt)	Grade (oz/t)	Gold (000oz)	Tons (Mt)	Grade (oz/t)	Gold (000oz)
	2.8	0.153	435	3.3	0.134	440	6.1	0.143	875

Joel is located in the Free State Province and about 292km from Johannesburg, on the southern edge of the Witwatersrand Basin. The mine comprises two shafts, the North and South shafts. The primary economic reef horizon at Joel is a narrow tabular Beatrix Reef deposit which is accessed via conventional grid development. Mining is conducted to a depth of 1 452m. The ore is processed at the Joel plant.

The lost-time injury frequency rate improved by 3% to 3.49 per million hours worked. Regrettably a fatality occurred in August 2015. The stoppage that ensued resulted in a loss of 52kg (1 672oz).

Managing shaft and project schedules is critical for Joel. Capital development on the decline project progressed well in FY16 and is expected to be completed in FY17. First production from this area is expected in July 2017. Joel's future operating life depends on the successful completion of the decline project, which began in FY15.

Gold production increased by 1% to 2 278kg (73 239oz) in FY16. Recovered gold grades improved by 2% to 4.20g/t (0.123oz/t) which offset the 2% decrease in ore milled to 542 000 tonnes (597 000 tons). The increase in gold production and the increase in the average rand gold price received (by 21% to R543 442/kg), resulted in a 17% increase in revenue to R1 220 million (8% decrease to US\$84 million).

Cash operating costs increased by 12% to R845 million (decreased by 12% to US\$58 million) mainly due an increase in labour costs and higher electricity costs arising from increased usage and higher tariffs.

Capital expenditure increased by 18% to R215 million (decreased by 6% to US\$15 million) primarily due to major capital spent on the 137 decline project.



## Kusasaletu

		FY16	FY15	FY14
<b>Number of employees</b>				
– Permanent		3 944	3 898	5 139
– Contractors		539	1 020	1 302
Total		4 483	4 918	6 441
<b>Operational</b>				
Volumes milled	(000t) (metric)	668	908	1 143
	(000t) (imperial)	736	1 001	1 260
Gold produced	(kg)	3 863	3 953	4 694
	(oz)	124 198	127 092	150 916
Gold sold	(kg)	3 822	4 297	4 531
	(oz)	122 880	138 151	145 673
Grade	(g/t)	5.78	4.35	4.11
	(oz/t)	0.169	0.127	0.120
Productivity	(g/TEC)	77.80	65.59	73.60
<b>Development results</b>				
Total metres		7 183	13 777	15 077
Reef metres		1 517	2 436	3 107
Capital metres		0	59	–
<b>Financial</b>				
Revenue	(Rm)	2 078	1 939	1 959
	(US\$m)	143	169	189
Average gold price received	(R/kg)	543 633	451 211	432 358
	(US\$/oz)	1 166	1 226	1 299
Cash operating cost	(Rm)	1 848	1 866	1 830
	(US\$m)	127	163	177
Production profit/(loss)	(Rm)	262	(57)	206
	(US\$m)	18	(5)	20
Capital expenditure	(Rm)	360	463	509
	(US\$m)	25	40	49
Cash operating cost	(R/kg)	478 277	472 112	389 762
	(US\$/oz)	1 026	1 283	1 171
All-in sustaining cost	(R/kg)	584 498	587 406	513 883
	(US\$/oz)	1 254	1 596	1 544
<b>Safety</b>				
Number of fatalities		2	1	3
Lost-time injury frequency rate per million hours worked		7.06	25.80	9.56
<b>Environment</b>				
Electricity consumption	(GWh)	611	682	664
Water consumption – primary activities	(ML)	1 671	1 342	1 418
Greenhouse gas emissions	(000t CO2e)	620	702	660
Intensity data per tonne treated				
– energy		0.91	0.75	0.58
– water		2.50	1.48	1.23
– greenhouse gas emissions		0.91	0.77	0.58

Number of reportable environmental incidents		1	1	2
<b>Community</b>				
Local economic development*	(Rm)	5	30	65
Training and development	(Rm)	26	50	37
* Included in the total for FY15 is an amount of R18 million that was capitalised as part of the hostel upgrades (FY16: R0 million)				
<b>Other salient features</b>				
Status of operation	Positioned for profitability			
Life of mine	5 years			
Hoisting capacity (per month)	200 000 tonnes (220 460 tons)			
Compliance and certification	New order mining right – December 2007 ISO 14001, ISO 9001, Cyanide Code			

## Mineral reserves as at 30 June 2016

Reserves (metric)	Proved reserves			Probable reserves			Total mineral reserves		
	Tonnes (Mt)	Grade (g/t)	Gold (000kg)	Tonnes (Mt)	Grade (g/t)	Gold (000kg)	Tonnes (Mt)	Grade (g/t)	Gold (000kg)
	3.8	7.15	27	0.2	5.31	1	4.0	7.06	28
Reserves (imperial)	Tons (Mt)	Grade (oz/t)	Gold (000oz)	Tons (Mt)	Grade (oz/t)	Gold (000oz)	Tons (Mt)	Grade (oz/t)	Gold (000oz)
	4.2	0.209	878	0.2	0.155	36	4.4	0.206	914

Kusasaletu is located about 90km from Johannesburg, near the provincial border of Gauteng and North West Province. Kusasaletu is situated in the West Witwatersrand Basin and mines the Ventersdorp Contact Reef as its main ore body. The mine comprises twin vertical and twin sub-vertical shaft systems and uses conventional mining methods in a sequential grid layout. Mining is conducted to a depth of 3 388m, making it Harmony's deepest mine. Ore mined is treated at the Kusasaletu plant.

The lost-time injury frequency rate improved significantly by 73% to 7.06 per million hours worked in FY16. Regrettably two fatalities occurred during the year.

Kusasaletu was restructured during FY15. Levels on the old mine were abandoned and the revised mine plan focused on mining lower volumes at higher grades. The waste and reef splitting system (waste ore pass system) to improve gold recoveries was finalised in FY16. In FY16, the recovered gold grade increased by 33% to 5.78g/t (0.169oz/t) and ore milled reduced by 26% to 668 000 tonnes (736 000 tons) resulting in a 2% decrease in gold production to 3 863kg (124 198oz).

During the second half of FY16, management decided to stop production at the mine for a total period of 21 days in order to perform major engineering infrastructure upgrades. Production was negatively impacted by these stoppages. This was necessary to ensure access to high-grade reserves and to improve safety at the mine.

Negative cash flows in FY16 and previous financial years necessitated a revision of the life-of-mine plan. In order to optimise cash flow, the focus now is on accessing higher grade ore zones and a shorter life-of-mine. The aim is to increase the profitability and operating margin of the operation and to generate positive cash flows. Studies are underway to determine the viability of deepening the mine into the high-grade pay area below the 113 level.

Challenges at the mine include engineering infrastructure, maintaining efficiencies at the metallurgical plant, eliminating illegal mining and gold theft, and producing sufficient backfill at the plant for operational support.

The average rand gold price received increased by 20% to R543 633/kg. Revenue increased by 7% to R2 078 million in FY16 (decreased by 15% to US\$143 million).

Capital expenditure decreased by 22% to R360 million (38% decrease to US\$25 million), as a result of the restructuring in FY15 to focus on mining lower volumes at higher grades. Capital was spent mainly on development. Cash operating costs decreased by 1% to R1 848 million (22% decrease to US\$127 million). Costs reduced mainly due to the decrease in production volumes.

## Masimong

		FY16	FY15	FY14
<b>Number of employees</b>				
– Permanent		2 478	2 470	2 868
– Contractors		112	99	118
Total		2 590	2 569	2 986
<b>Operational</b>				
Volumes milled	(000t) (metric)	650	670	670
	(000t) (imperial)	716	739	739
Gold produced	(kg)	2 432	2 463	2 718
	(oz)	78 190	79 187	87 385
Gold sold	(kg)	2 432	2 491	2 708
	(oz)	78 191	80 087	87 064
Grade	(g/t)	3.74	3.68	4.06
	(oz/t)	0.109	0.107	0.118
Productivity	(g/TEC)	83.85	75.27	78.00
<b>Development results</b>				
Total metres		4 755	9 855	10 079
Reef metres		1 549	2 376	1 547
<b>Financial</b>				
Revenue	(Rm)	1 318	1 118	1 171
	(US\$m)	91	98	113
Average gold price received	(R/kg)	541 806	448 867	432 416
	(US\$/oz)	1 162	1 220	1 299
Cash operating cost	(Rm)	1 038	979	978
	(US\$m)	72	86	95
Production profit/(loss)	(Rm)	280	127	188
	(US\$m)	19	11	18
Capital expenditure	(Rm)	110	166	168
	(US\$m)	8	15	16
Cash operating cost	(R/kg)	426 904	397 380	360 006
	(US\$/oz)	916	1 080	1 082
All-in sustaining cost	(R/kg)	493 527	479 096	441 231
	(US\$/oz)	1 059	1 302	1 326
<b>Safety</b>				
Number of fatalities		2	1	2
Lost-time injury frequency rate per million hours worked		10.05	12.09	15.80
<b>Environment</b>				
Electricity consumption	(GWh)	172	184	196
Water consumption – primary activities	(ML)	715	859	874
Greenhouse gas emissions	(000t CO2e)	175	190	195
Intensity data per tonne treated				
– energy		0.26	0.28	0.29
– water		1.10	1.28	1.30
– greenhouse gas emissions		0.26	0.29	0.29
Number of reportable environmental incidents		0	0	0

		FY16	FY15	FY14
<b>Community</b>				
Local economic development*	(Rm)	6	6	17
Training and development	(Rm)	22	25	20
<b>Other salient features</b>				
Status of operation	Mature, single shaft operation nearing the end of its life of mine			
Life of mine	3 years			
Hoisting capacity (per month)	108 863 tonnes (120 000 tons)			
Compliance and certification	New order mining right – December 2007 ISO 14001 ISO 9001 OHSAS 18001			

### Mineral reserves as at 30 June 2016

Reserves (metric)	Proved reserves			Probable reserves			Total mineral reserves		
	Tonnes (Mt)	Grade (g/t)	Gold (000kg)	Tonnes (Mt)	Grade (g/t)	Gold (000kg)	Tonnes (Mt)	Grade (g/t)	Gold (000kg)
	1.5	4.05	6	0.2	3.82	1	1.7	4.02	7
Reserves (imperial)	Tons (Mt)	Grade (oz/t)	Gold (000oz)	Tons (Mt)	Grade (oz/t)	Gold (000oz)	Tons (Mt)	Grade (oz/t)	Gold (000oz)
	1.6	0.118	193	0.3	0.112	30	1.9	0.117	223

Masimong is located in the Free State Province, near the city of Welkom and about 260km from Johannesburg. The Masimong complex comprises an operating shaft (5 shaft), and a second shaft (4 shaft), which, although closed for mining, is used for ventilation, pumping and as a second outlet. Masimong exploits the Basal Reef and the B Reef. Mining is conducted to a depth of 2 050m. Ore mined is processed at the Harmony One plant.

The lost-time injury frequency rate improved by 17% to 10.05 per million hours worked in FY16. Regrettably two fatalities occurred during the year.

Masimong was restructured in FY15 to improve its profitability by scaling down ore body development in an effort to reduce costs and increase margins. As a result, the expected life of mine was shortened to three years.

During FY16, Masimong's production was negatively impacted by safety stoppages. Grade management and quality mining practices are important to achieve increased recovered grades.

Gold production decreased by 1% to 2 432kg (78 190oz) in FY16. This was primarily due to reduced production volumes, ore milled decreased by 3% to 650 000 tonnes (716 000 tons). Recovered gold grades increased by 2% to 3.74g/t (0.109oz/t).

The decrease in gold production was offset by the 21% increase in the average rand gold price received in FY16 (to R541 806/kg), which contributed to an 18% increase in revenue to R1 318 million (7% decrease to US\$91 million mainly due to the weakening of the rand/US dollar exchange rate to R14.50, offset by the increase in the rand gold price).

Cash operating costs increased by 6% to R1 038 million (16% decrease to US\$72 million), due mainly to increased labour and contractor costs.

Capital expenditure decreased by 34% to R110 million (decreased by 47% to US\$8 million) in line with the reduced capital requirements of the revised mine plan. Capital was spent mainly on ongoing development.

## Unisel

		FY16	FY15	FY14
<b>Number of employees</b>				
– Permanent		1 817	1 809	1 809
– Contractors		128	114	148
Total		1 945	1 923	1 957
<b>Operational</b>				
Volumes milled	(000t) (metric)	424	417	408
	(000t) (imperial)	467	460	450
Gold produced	(kg)	1 704	1 695	1 838
	(oz)	54 785	54 495	59 093
Gold sold	(kg)	1 705	1 715	1 834
	(oz)	54 817	55 138	58 964
Grade	(g/t)	4.02	4.06	4.50
	(oz/t)	0.117	0.118	0.131
Productivity	(g/TEC)	77.43	77.82	85.33
<b>Development results</b>				
Total metres		3 145	5 177	5 641
Reef metres		1 917	2 816	3 462
<b>Financial</b>				
Revenue	(Rm)	925	770	792
	(US\$m)	64	67	77
Average gold price received	(R/kg)	542 487	449 082	432 072
	(US\$/oz)	1 164	1 220	1 298
Cash operating cost	(Rm)	754	674	600
	(US\$m)	52	59	58
Production profit/(loss)	(Rm)	171	88	192
	(US\$m)	12	7	19
Capital expenditure	(Rm)	62	99	85
	(US\$m)	4	9	8
Cash operating cost	(R/kg)	442 359	397 615	326 466
	(US\$/oz)	949	1 080	981
All-in sustaining cost	(R/kg)	496 099	469 246	388 785
	(US\$/oz)	1 064	1 275	1 168
<b>Safety</b>				
Number of fatalities		0	1	0
Lost-time injury frequency rate per million hours worked		9.61	8.74	11.66
<b>Environment</b>				
Electricity consumption	(GWh)	112	109	110
Water consumption – primary activities	(ML)	563	519	711
Greenhouse gas emissions	(000t CO2e)	113	112	109
Intensity data per tonne treated				
– energy		0.26	0.26	0.27
– water		1.33	1.25	1.74
– greenhouse gas emissions		0.26	0.27	0.27
Number of reportable environmental incidents		0	0	0

		FY16	FY15	FY14
<b>Community</b>				
Local economic development*	(Rm)	4	19	12
Training and development	(Rm)	23	21	15
* Included in the total for FY15 is an amount of R15 million that was capitalised as part of the hostel upgrades (FY16: R0 million)				
<b>Other salient features</b>				
Status of operation	Mature operation reaching the end of life of mine			
Life of mine	6 years			
Hoisting capacity (per month)	60 000 tonnes (66 138 tons)			
Compliance and certification	New order mining right – December 2007 ISO 9001			

### Mineral reserves as at 30 June 2016

Reserves (metric)	Proved reserves			Probable reserves			Total mineral reserves		
	Tonnes (Mt)	Grade (g/t)	Gold (000kg)	Tonnes (Mt)	Grade (g/t)	Gold (000kg)	Tonnes (Mt)	Grade (g/t)	Gold (000kg)
	1.2	4.18	5	1.3	4.35	6	2.5	4.27	11
Reserves (imperial)	Tons (Mt)	Grade (oz/t)	Gold (000oz)	Tons (Mt)	Grade (oz/t)	Gold (000oz)	Tons (Mt)	Grade (oz/t)	Gold (000oz)
	1.4	0.122	167	1.4	0.127	180	2.8	0.124	348

Unisel is located in the Free State Province, near Virginia and about 271km from Johannesburg. Mining is conducted to a depth of 2 153m below surface. Conventional scattered mining and pillar reclamation takes place to access the Basal, Leader and, to a lesser extent, the Middle reefs. Ore mined is processed at Harmony One plant.

Unisel is nearing the end of its operating life, but has been a good performer despite being Harmony's oldest operating mine. Unisel's aging operations and infrastructure present significant challenges to the mine's operational flexibility and to the maintenance of production.

There were no fatalities in FY16, however, the lost-time injury frequency rate increased to 9.61 per million hours worked in FY16 compared to 8.74 in FY15.

Gold production remained steady year-on-year and increased by 1% to 1 704kg (54 785oz) in FY16. The recovered gold grade declined by 1% to 4.02g/t (0.117oz/t), while ore milled increased by 2% to 424 000 tonnes (467 000 tons). The increase in gold production and an increase in the average rand gold price received resulted in a 20% increase in revenue to R925 million (4% decrease to US\$64 million).

Cash operating costs increased by 12% to R754 million (decreased by 12% to US\$52 million) primarily due to an increase in labour costs and electricity tariffs.

Capital expenditure decreased by 37% to R62 million (decreased by 56% to US\$4 million) as capital development was reduced in the first half of FY16 to improve the profitability of the mine.

## SOUTH AFRICA – SURFACE OPERATIONS

### Surface dumps

		FY16	FY15	FY14
<b>Number of employees</b>				
– Permanent		10	10	13
– Contractors		190	174	129
Total		200	184	142
<b>Operational</b>				
Volumes milled	(000t) (metric)	3 041	2 701	2 897
	(000t) (imperial)	3 353	2 978	3 196
Gold produced	(kg)	1 065	862	903
	(oz)	34 241	27 713	29 032
Grade	(g/t)	0.35	0.32	0.31
	(oz/t)	0.010	0.009	0.009
<b>Financial</b>				
Revenue	(Rm)	577	389	386
	(US\$m)	40	34	37
Average gold price received	(R/kg)	544 996	450 420	431 172
	(US\$/oz)	1 169	1 224	1 296
Cash operating cost	(Rm)	427	330	328
	(US\$m)	29	29	32
Production profit/(loss)	(Rm)	158	58	62
	(US\$m)	11	5	6
Capital expenditure	(Rm)	18	6	9
	(US\$m)	1	1	1
Cash operating cost	(R/kg)	401 033	382 959	363 568
	(US\$/oz)	860	1 041	1 092
All-in sustaining cost	(R/kg)	422 205	403 906	383 701
	(US\$/oz)	906	1 097	1 153
<b>Safety</b>				
Number of fatalities		0	0	0
Lost-time injury frequency rate per million hours worked		0	2.48	0.83
<b>Environment</b>				
Electricity consumption	(GWh)	66	64	68
Water consumption – primary activities	(ML)	394	480	816
Greenhouse gas emissions	(000t CO2e)	67	66	67
Intensity data per tonne treated				
– energy		0.02	0.02	0.23
– water		0.12	0.18	0.28
– greenhouse gas emissions		0.02	0.02	0.23
Number of reportable environmental incidents		0	0	0
<b>Community</b>				
Local economic development	(Rm)	0	0	0
<b>Other salient features</b>				
Status of operation	The operational plans are for a profitable FY16			
Life of mine	14+ years			
Compliance and certification	Certification depends on future of these operations, ISO 9001			

## Mineral reserves as at 30 June 2016 (excluding Phoenix)

Reserves (metric)	Proved reserves			Probable reserves			Total mineral reserves		
	Tonnes (Mt)	Grade (g/t)	Gold (000kg)	Tonnes (Mt)	Grade (g/t)	Gold (000kg)	Tonnes (Mt)	Grade (g/t)	Gold (000kg)
	175.9	0.27	47	567.0	0.23	133	742.9	0.25	180
Reserves (imperial)	Tons (Mt)	Grade (oz/t)	Gold (000oz)	Tons (Mt)	Grade (oz/t)	Gold (000oz)	Tons (Mt)	Grade (oz/t)	Gold (000oz)
	193.9	0.008	1 507	625.0	0.007	4 276	818.9	0.007	5 784

Production from the processing of surface rock dumps situated in the Free State province in South Africa depends entirely on the availability of spare mill capacity at the Harmony One and Target plants, which in turn depends on the availability of underground ore delivered for milling. In FY16, Central Plant only processed re-mined, redundant plant clean-up and rock dumps.

Gold production from the processing of the surface dumps was 24% higher year-on-year in FY16, a result of both increases in volumes processed (increase of 13%) and in the recovered grade (increase of 9%).

The processing of the rock dumps is approaching its end as virtually all of the higher-grade dump material originally available has been processed, leaving only lower-grade material. During FY16, the Central Plant tailings retreatment project started, aimed at upgrading the plant to process only tailings. The life of the tailing retreatment project is expected to be 19 years and upgrades are scheduled to be completed by the end of FY17.

## Phoenix (Tailings retreatment)

		FY16	FY15	FY14
<b>Number of employees</b>				
– Permanent		82	83	83
– Contractors		296	312	293
Total		378	395	376
<b>Operational</b>				
Volumes milled	(000t) (metric)	6 465	6 245	6 073
	(000t) (imperial)	7 129	6 887	6 697
Gold produced	(kg)	804	867	835
	(oz)	25 849	27 875	26 846
Gold sold	(kg)	788	881	825
	(oz)	25 335	28 324	26 524
Grade	(g/t)	0.12	0.14	0.14
	(oz/t)	0.004	0.004	0.004
Productivity	(g/TEC)	177.72	185.73	201.11
<b>Financial</b>				
Revenue	(Rm)	429	396	357
	(US\$m)	30	35	35
Average gold price received	(R/kg)	544 390	449 941	433 293
	(US\$/oz)	1 168	1 223	1 302



		FY16	FY15	FY14
Cash operating cost	(Rm)	320	295	246
	(US\$m)	22	26	24
Production profit/(loss)	(Rm)	117	97	117
	(US\$m)	8	8	11
Capital expenditure	(Rm)	5	4	2
	(US\$m)	–	–	–
Cash operating cost	(R/kg)	398 122	339 896	294 408
	(US\$/oz)	854	924	885
All-in sustaining cost	(R/kg)	403 907	344 319	294 615
	(US\$/oz)	866	936	885
<b>Safety</b>				
Number of fatalities		0	0	0
Lost-time injury frequency rate per million hours worked		2.06	0.00	0.00
<b>Environment</b>				
Electricity consumption	(GWh)	40	41	67.5
Water consumption – primary activities	(ML)	267	277	228
Greenhouse gas emissions	(000t CO2e)	41	42	67.1
Intensity data per tonne treated				
– energy		0.006	0.007	0.011
– water		0.04	0.04	0.04
– greenhouse gas emissions		0.006	0.007	0.011
Number of reportable environmental incidents		0	0	0
<b>Other salient features</b>				
Status of operation	Retreatment of tailings using spare processing capacity			
Life of mine	14+ years			
Compliance and certification	New order mining right – December 2007 ISO 14001 certification is under consideration – interim focus is on compliance ISO 9001			

### Mineral reserves as at 30 June 2016

Reserves (metric)	Proved reserves			Probable reserves			Total mineral reserves		
	Tonnes (Mt)	Grade (g/t)	Gold (000kg)	Tonnes (Mt)	Grade (g/t)	Gold (000kg)	Tonnes (Mt)	Grade (g/t)	Gold (000kg)
	79.8	0.28	22	–	–	–	79.8	0.28	22
Reserves (imperial)	Tons (Mt)	Grade (oz/t)	Gold (000oz)	Tons (Mt)	Grade (oz/t)	Gold (000oz)	Tons (Mt)	Grade (oz/t)	Gold (000oz)
	88.0	0.008	712	–	–	–	88.0	0.008	712

Phoenix, a tailings retreatment operation situated in Virginia in the Free State Province, makes use of the Saaiplaas plant to retreat tailings. During FY13, Harmony finalised an empowerment agreement and transferred 30% of its shareholding in the Phoenix operations to black economic empowerment owners.

Operational success depends on maintaining plant efficiency and reducing pump and pipe failures. Grade variability and the theft of pipelines and electrical cables are the main risks being managed at Phoenix. Security has been increased in an effort to halt the endemic theft of piping and cables that can affect the integrity of operations.

Year-on-year, gold production declined by 7% to 804kg (25 849oz), mainly as a result of a 14% decrease in the recovered grade to 0.12g/t (0.004oz/t), which was partially offset by a 4% increase in volumes processed to 6 465 000 tonnes (7 129 000 tons).

The increase in the average rand gold price received offset the decrease in gold production, resulting in an 8% increase in revenue to R429 million (decrease of 14% to US\$30 million).

Cash operating costs increased by 8% to R320 million (decreased by 15% to US\$22 million), due to the higher volumes processed in FY16 and increase in labour costs and electricity tariffs.

## Kalgold

		FY16	FY15	FY14
<b>Number of employees</b>				
– Permanent		235	240	230
– Contractors		377	465	471
Total		612	705	701
<b>Operational</b>				
Volumes milled	(000t) (metric)	1 479	1 472	1 472
	(000t) (imperial)	1 630	1 623	1 623
Gold produced	(kg)	1 103	1 198	1 162
	(oz)	35 463	38 517	37 358
Gold sold	(kg)	1 086	1 230	1 203
	(oz)	34 916	39 545	38 677
Grade	(g/t)	0.75	0.81	0.79
	(oz/t)	0.022	0.024	0.023
Productivity	(g/TEC)	116.79	183.86	185.15
<b>Financial</b>				
Revenue	(Rm)	595	551	522
	(US\$m)	41	48	50
Average gold price received	(R/kg)	548 072	448 230	433 759
	(US\$/oz)	1 176	1 218	1 303
Cash operating cost	(Rm)	548	452	409
	(US\$m)	38	40	39
Production profit/(loss)	(Rm)	55	88	103
	(US\$m)	4	8	10
Capital expenditure	(Rm)	36	41	33
	(US\$m)	2	4	3
Cash operating cost	(R/kg)	496 991	377 547	351 670
	(US\$/oz)	1 066	1 026	1 057
All-in sustaining cost	(R/kg)	546 949	422 323	393 401
	(US\$/oz)	1 173	1 148	1 182
<b>Safety</b>				
Number of fatalities		0	0	0
Lost-time injury frequency rate per million hours worked		0	2.25	0.90
<b>Environment</b>				

		FY16	FY15	FY14
Electricity consumption	(GWh)	49	40	41
Water consumption – primary activities	(ML)	375	1 795	1 707
Greenhouse gas emissions	(000t CO2e)	50	41	41
Intensity data per tonne treated				
– energy		0.03	0.03	0.03
– water		0.25	1.22	1.16
– greenhouse gas emissions		0.03	0.03	0.03
Number of reportable environmental incidents		0	1	0
Community				
Local economic development	(Rm)	2	2	7
Training and development	(Rm)	5	4	4
Other salient features				
Status of operation	Open-pit mining operation			
Life of mine	19 years			
Compliance and certification	New order mining right – August 2008 ISO 14001 ISO 9001			

### Mineral reserves as at 30 June 2016

Reserves (metric)	Proved reserves			Probable reserves			Total mineral reserves		
	Tonnes (Mt)	Grade (g/t)	Gold (000kg)	Tonnes (Mt)	Grade (g/t)	Gold (000kg)	Tonnes (Mt)	Grade (g/t)	Gold (000kg)
	5.3	0.97	5	12.3	1.12	14	17.6	1.07	19
Reserves (imperial)	Tons (Mt)	Grade (oz/t)	Gold (000oz)	Tons (Mt)	Grade (oz/t)	Gold (000oz)	Tons (Mt)	Grade (oz/t)	Gold (000oz)
	5.8	0.028	165	13.6	0.033	444	19.4	0.031	608

Kalgold is an open-pit mine situated 55km southwest of Mahikeng in North West Province and located within the Kraaipan Greenstone Belt. Mining takes place from the A Zone pit. Ore mined is processed at a carbon-in-leach plant located at Kalgold.

Both the A and B mills were replaced in FY16. The elution upgrade project and plant refurbishment upgrades are underway and will improve plant efficiencies. Upgrades to the crushers and improved maintenance will aid improved performance of the operation in future.

Upgrades to the plant and underperformance of the crushing units impacted gold production in FY16. The recovered grade decreased by 7% to 0.75g/t (8% to 0.022oz/t). Ore milled remained stable year-on-year. The lower gold production was offset by the increase in the average rand gold price received which resulted in an 8% increase in revenue to R595 million (a 15% decrease to US\$41 million).

Cash operating costs increased by 21% to R548 million (5% increase to US\$38 million). Capital expenditure decreased by 12% to R36 million (decreased by 50% to US\$2 million).

Risks managed at Kalgold include the prevention of plant intrusions and gold theft and the performance of blasting and hauling operations in the pit.

PAPUA NEW GUINEA

Hidden Valley (50%)

		FY16	FY15	FY14
<b>Number of employees</b>				
Total (including employees of Morobe Mining Joint Ventures)		1 969	2 157	1 980
<b>Operational</b>				
Volumes milled	(000t) (metric)	1 729	1 825	2 001
	(000t) (imperial)	1 906	2 012	2 207
Gold produced	(kg)	2 257	2 943	3 292
	(oz)	72 565	94 619	105 840
Gold sold	(kg)	2 340	3 003	3 307
	(oz)	75 233	96 548	106 322
Grade	(g/t)	1.31	1.61	1.65
	(oz/t)	0.038	0.047	0.048
<b>Financial</b>				
Revenue	(Rm)	1 320	1 346	1 434
Revenue	(US\$m)	91	118	138
Average gold price received	(R/kg)	564 272	448 322	433 488
	(US\$/oz)	1 210	1 218	1 303
Cash operating cost	(Rm)	1 082	1 153	1 086
	(US\$m)	75	101	105
Production profit/(loss)	(Rm)	108	203	344
	(US\$m)	7	18	33
Capital expenditure	(Rm)	79	121	122
	(US\$m)	5	11	12
Cash operating cost	(R/kg)	479 196	391 774	329 943
	(US\$/oz)	1 028	1 065	991
All-in sustaining cost	(R/kg)	597 398	514 690	415 068
	(US\$/oz)	1 282	1 395	1 244
<b>Safety</b>				
Number of fatalities		1	1	0
Lost-time injury frequency rate per million hours worked		1.39	0.28	0.00
<b>Environment</b>				
Electricity consumption	(GWh)	54	48	42
Water consumption – primary activities	(ML)	715	722	768
Greenhouse gas emissions	(000t CO <sub>2</sub> e)	55	0	0
Intensity data per tonne treated				
– energy		0.03	0.03	0.02
– water		0.41	0.39	0.38
– greenhouse gas emissions		0.03	0	0
Number of reportable environmental incidents		0	0	1
<b>Other salient features</b>				
Status of operation	Open-pit mining operation producing gold and silver. A joint venture with Newcrest			
Life of mine	± 7 years			
Compliance and certification	Mining lease approved by Papua New Guinea authorities; Cyanide Code			

## Mineral reserves as at 30 June 2016 (Harmony's 50% share<sup>#</sup>)

	Proved reserves			Probable reserves			Total mineral reserves		
	Tonnes (Mt)	Grade (g/t)	Gold (000kg)	Tonnes (Mt)	Grade (g/t)	Gold (000kg)	Tonnes (Mt)	Grade (g/t)	Gold (000kg)
Reserves (metric)	1.3	1.09	1	11.5	1.62	19	12.7	1.57	20
Reserves (imperial)	Tons (Mt)	Grade (oz/t)	Gold (000oz)	Tons (Mt)	Grade (oz/t)	Gold (000oz)	Tons (Mt)	Grade (oz/t)	Gold (000oz)
	1.4	0.032	47	12.6	0.047	599	140	0.046	644

The Hidden Valley mine is an open pit gold and silver mine, situated in the highly prospective area of the Morobe Province in Papua New Guinea, some 210km northwest of Port Moresby.

The major gold and silver deposits of the Morobe goldfield and Hidden Valley are hosted in the Wau Graben. The Hidden Valley-Kaveroi and Hamata pits, located approximately 6km apart, are in operation. Ore mined is treated at the Hidden Valley processing plant.

During FY16, Hidden Valley's operations were impacted by accident-related stoppages during the first quarter of FY16. The operation was suspended due to a fatality in July 2015 and lost 33 production days as a result. The operation was also adversely affected by poor grade and road closures.

Mining at Kaveroi stage 4 ceased in the fourth quarter of FY16 although milling was sustained by the processing of the lower-grade stockpile and the start of ore production at Hamata. Overall this led to lower tonnages of ore mined and milled.

The outcome for the year was a 23% decline in gold production to 2 257kg (72 565oz), on the back of the decrease in the grade recovered and tonnes milled.

Cash operating costs and capital expenditure decreased due to lower production and the deferral of pre-stripping and stripping activities at Hidden Valley in FY16.

<sup>#</sup> Post-year end, Harmony entered into a transaction to fully acquire Hidden Valley from its joint venture partner. The transaction is subject to the conditions precedent being met.

## PROJECTS AND EXPLORATION

### HIGHLIGHTS AND MILESTONES OF FY16 EXPLORATION PROGRAMME IN PAPUA NEW GUINEA

#### Advancement of the Golpu project

- Optimised feasibility and prefeasibility studies completed and results released in February 2016
- Completed and announced results of the feasibility study for stage 1 and the prefeasibility study for stage 2 of the Golpu project.

#### Maiden inferred resource declared for Kili Teke prospect

- Drilling at Kili Teke continues to yield highly significant gold-copper mineralisation drill results.

### WHY THIS IS MATERIAL TO HARMONY

Sustaining and growing production is key to our long-term strategy. Our current resources are finite and it is essential to have a project pipeline that balances early-stage and more immediate prospects so as to meet future targets. In addition to production, we need to diversify our resource base in order to mitigate our exposure to the counter-cyclical nature of the gold industry.

### OUR APPROACH

Our exploration programme, like our operations, is focused in South Africa and Papua New Guinea. As these are prospective areas and we already have knowledge of the local geology, government, infrastructure and regulations of these countries, it makes sense to take advantage of this as we expand our project pipeline.

Our exploration strategy targets significant prospective geological regions to discover large long-life gold and gold-copper ore bodies that will allow us to create value for years to come. We aim to create a balanced brownfields and greenfields exploration portfolio.

Brownfields exploration allows us to maximise value from existing infrastructure by developing mineral resources that sustain our operations. Greenfields exploration, on the other hand, allows us to create new opportunities in highly prospective under-explored mineral provinces and emerging gold districts.

Our flexible approach to potential exploration projects includes joint ventures, acquisitions and other arrangements. However, all projects undergo a robust assessment to determine whether they meet our exploration standards. Criteria include project- and country-related risk profiles, and minimum requirements on the potential size, production profile and investment targets.

In particular, we seek exploration projects that align with our operational imperatives of prioritising safety, maximising in-ground expenditure and drill testing high-priority targets. In this way we can ensure that future projects, once operational, will enable us to meet our long-term strategic objectives.

Harmony closely monitors the environment for new opportunities to enhance our project portfolio, in line with core operating capabilities. Given sustained low commodity prices, tenure over highly prospective target areas in Papua New Guinea continues to become available.

### ACTIONS IN 2016

In FY16, we spent R433 million (US\$29.9 million) (FY15: R385 million, US\$33.6 million) on both brownfields and greenfields exploration, all of which was spent in Papua New Guinea.

In line with our strategy of developing a world-class copper and gold portfolio in Papua New Guinea, the key work streams underpinning the FY16 exploration programme included:

- Optimised feasibility studies on a staged development path for the high-grade Golpu porphyry gold-copper deposit, and special mining lease permitting process
- Accelerated drill schedule at the Kili Teke porphyry gold-copper discovery to define resources and progress up the value curve
- Drill target development for epithermal gold at the Wau Domefield in the Morobe province
- Continued rationalisation of the greenfield tenement package to maintain focus on the most prospective targets.

## KEY GEOLOGICAL FEATURES

### Papua New Guinea

The central belt of rocks making up the highland spine of Papua New Guinea formed as a result of subduction-related interaction and convergence between the Pacific plate (in the north), and the Australian plate (in the south). Deposits typical of subduction-related arc settings include:

- Epithermal gold deposits which form at shallow depths, relatively close to the earth's surface, examples of which include Hidden Valley, Hamata, Kerimenge, Wau and Wafi
- Porphyry gold-copper systems which form at deeper levels in the crust associated with the emplacement of intrusive stocks and dykes. Porphyry systems are one of the largest sources of copper ore in the world, and can also contain significant amounts of gold, molybdenum and silver as by-products. Golpu is a high-grade porphyry gold-copper system

Harmony has advanced a number of gold and gold-copper prospects which are at various stages of exploration and evaluation across Harmony's lease areas in Papua New Guinea. These include the Kili Teke prospect.

### South Africa

Our underground mines are all located in the Witwatersrand Supergroup. Most are in the south-western corner of the Witwatersrand Basin or Free State goldfields, which comprise sedimentary rocks that extend laterally for hundreds of kilometres into the West Rand goldfields and East Rand Basin. An open pit operation is located on the Kraaipan Greenstone Belt in the north-west of the country.

## PAPUA NEW GUINEA

Papua New Guinea is one of the world's most prospective yet under-explored terrains for porphyry gold-copper and epithermal gold mineralisation. The New Guinea mobile belt which spans the core of the Irian Jaya-Papua New Guinea mainland, is host to a number of world-class porphyry gold-copper and gold deposits including Golpu (Cu-Au), Ok Tedi (Cu-Au), Grasberg (Cu-Au), and Porgera (Au). Harmony began actively exploring in Papua New Guinea in 2003. We have developed a small but high-quality project portfolio, both in established mineral provinces and in emerging gold and copper districts.

The case for exploration investment in Papua New Guinea remains strong. The country is hugely prospective, under-explored, and has a stable and transparent regulatory environment that promotes and supports mining investment. In addition, Harmony has an established track record of discovery and adding value through cost effective exploration:

- Since 2003, resource growth from both the Morobe joint venture tenements (Harmony's 50% equity share) and Harmony's 100%-held tenements amounts to 12.7Moz of gold and 5.1Mt of copper (42.5Moz gold equivalent)
- Discovery cost on a per ounce gold equivalent basis of less than US\$10 is among the best in the world

### Morobe Exploration Joint Venture (50%)

The Morobe Exploration Joint Venture refers to a key strategic tenement holding in the Morobe Province that encompasses the Hidden Valley mine<sup>1</sup> and Golpu project. The tenement package is held jointly (50:50) between Harmony and Newcrest. The Morobe exploration strategy is to manage a portfolio pipeline of projects to develop bulk tonnage (~1Moz) or high-margin gold or gold-copper targets that provide new standalone opportunities or resource options to complement the operations at Hidden Valley and/or at the Golpu project.

During FY16, we spent R9 million (US\$0.6 million) compared to R12 million (US\$1.1 million) in FY15 on exploration in the area throughout the joint venture. This represents Harmony's share which is 50% of the total work programme expenditure. The Morobe Exploration Joint Venture tenement package currently stands at 999km<sup>2</sup> (FY15: 1 245km<sup>2</sup>). Work on the Morobe Exploration Joint Venture tenements included:

- Rationalisation of peripheral and non-core tenements:
  - EL1590 was surrendered after prospectivity was downgraded
  - EL1629 is now managed by Pacific Niugini Minerals under an option and sale purchase agreement
- Prospect development at the historic Wau gold mining centre located approximately 12km northeast of Hidden Valley and reassessment of drill targets and potential at Wafi Golpu

A reduced budget of R6 million (US\$0.4 million) has been proposed for FY17 to continue the generative work programme planned to develop quality targets with the potential to provide resource optionality and leverage infrastructure associated with operations at Hidden Valley or the Golpu project.

The Papua New Guinea exploration and mine development programme is summarised below:		
<b>Golpu</b>		
<b>Target</b>	<b>Progress in FY16</b>	<b>Targets/plans for FY17</b>
Develop the Golpu deposit, a world-class gold-copper porphyry resource, into a mine with more than 28 years of low-cost copper and gold production.	Completed and announced the results for the prefeasibility and feasibility studies For more detailed information, see Wafi Golpu	Stakeholder engagement to initiate the permitting process: Compilation and submission of the special mining lease application including Environmental Impact Statement <sup>2</sup> Optimisation and de-risking studies Deep-sea tailings placement studies
<b>Wafi Golpu district</b>		
<b>Target</b>	<b>Progress in FY16</b>	<b>Targets/plans for FY17</b>
Wafi transfer zone – greenfields exploration targeting discovery of additional resources to expand Golpu into a mineral district	Validation mapping and reconnaissance has confirmed Nambonga North as a priority drill target for FY17 Prospectivity of EL1590 was downgraded and the tenement was surrendered	Continue generative work programme and drill target development:  Airborne geophysical survey trial over the Wafi Golpu system  Reinterpretation of the Wafi gold system in context with latest structural model and geophysical data
<b>Hidden Valley district</b>		
<b>Target</b>	<b>Progress in FY16</b>	<b>Targets/plans for FY17</b>
Brownfields exploration within a 10km radius of the Hidden Valley plant to develop replacement resources and support expansion	Grassroots level work focused on the historic Wau gold mining centre with detailed mapping and rock chip sampling and grid based soil geochemical sampling completed. In total, 1 082 surface samples were collected A number of high tenor gold geochemical anomalies were generated for developing into drill targets	Drill target definition and drill testing of high-priority targets in the historic Wau mining district



## Harmony Gold Exploration (Papua New Guinea) Limited (100%)

A total of R164 million (US\$11.3 million) was spent on exploration outside of the Morobe joint venture on Harmony-owned projects in FY16 (FY15: R87 million/US\$7.5 million). This work focused almost exclusively on developing and drill testing the Kili Teke prospect.

Harmony's 100%-owned greenfields tenement portfolio comprises 764km<sup>2</sup> compared to FY15: 1 023 km<sup>2</sup> (a 25% reduction in the size of the tenement portfolio year-on-year). The reduction in the tenement holding was driven by relinquishing part of EL2310, which was required as part of the licence renewal process.

Details of the FY16 work programme are outlined below. Drilling was successful in defining a maiden resource for Kili Teke, which now stands at 785 000t of copper, and 1.8Moz of gold, and the Kili Teke prospect has been proven as a new porphyry camp with the potential to develop into a major gold-copper discovery.

Subject to further drilling success, a FY17 budget of R227 million (US\$17.6 million) has been earmarked to expand the resource base and progress "pre-concept" studies of the Kili Teke mineralisation.

<b>Kili Teke prospect</b>		
<b>Target</b>	<b>Progress in FY16</b>	<b>Targets/plans for FY17</b>
Targeting gold-copper porphyry	18 400m of drilling was completed during the year 128Mt maiden resource declared in November 2015. In June 2016 the inferred mineral resource increased to 222Mt @ 0.35% Cu, 0.25g/t gold and 170 ppm molybdenum containing 782 000t copper, 1.75Moz of gold and 38 000t molybdenum	Drilling to continue for resource expansion (open to southeast and at depth). A budget of R227 million (US\$17.6 million) has been earmarked Pre-concept study work to begin
<b>Project generation</b>		
<b>Target</b>	<b>Progress in FY16</b>	<b>Targets/plans for FY17</b>
Develop a project pipeline capable of delivering additional quality resources to sustain growth and regional operations	EL2836 containing the Poru prospect area was progressed to grant and preliminary social mapping began Tenement monitoring for new opportunities continued	Prospect identification and development through ridge and spur soil sampling, mapping and rock-chip sampling

## **KILI TEKE PROSPECT – A SIGNIFICANT NEW GREENFIELD PORPHYRY COPPER DISCOVERY**

Kili Teke represents the first greenfield porphyry gold-copper discovery in Papua New Guinea since Golpu, which was identified in 1990 and then materially expanded some 20 years later in 2010. Harmony's exploration team has played an integral role in both discoveries.

Regionally, the Kili Teke copper gold prospect is hosted in the Papuan fold belt which comprises the same limestone-sedimentary sequence that is host to the giant Ok Tedi and Grasberg gold-copper mines. Harmony is actively exploring the region for similar major porphyry gold-copper systems together with accompanying high-grade, gold-copper skarn mineralisation.

In following up historic exploration results in FY15, Harmony defined a broad (kilometre scale), high-tenor gold-copper anomaly at Kili Teke, indicative of the zonal geochemical distribution and alteration footprint associated with a major mineralised porphyry gold-copper system. Initial drilling began in November 2014 and was highly successful.

FY16 drilling comprised 26 holes for 18 400m and focused on infilling and extending the discovery mineralisation in the Central Mineralised Porphyry. A maiden mineral resource announced in November 2015 was subsequently revised in June 2016. The updated resource was grown 50% to 6.0Moz on a gold equivalent basis compared to the November 2015 model.

#### **November 2015 – initial intercepts**

KTDD007: 461m @ 0.51% Cu, 0.4 g/t Au, from 86m, Including 202m @ 0.74% Cu, 0.57g/t Au, from 137m

KTDD013: 542m @ 0.58% Cu, 0.41 g/t Au from 90m, Including 319m @ 0.79% Cu, 0.57 g/t Au from 166m

#### **June 2016 – revised mineral resource**

The inferred mineral resource currently stands at 222Mt @ 0.4% copper and 0.2g/t gold and 170ppm molybdenum containing:

- 782 000t copper
- 1.75Moz gold
- 38 000t molybdenum

The additional drill data has led to an improved understanding of the geological model and the mineralised system. Cross-cutting relationships identified through detailed logging show that the gold-copper mineralisation is associated with a multiphase intrusive complex. Two early-mineral porphyry phases have been identified as the main host to the higher grade and more well developed stockwork mineralisation. Uranium-lead zircon age dating yield Pliocene age dates in the range of  $3.5 \pm 0.04$ Ma (million years) to  $3.59 \pm 0.07$ Ma for the mineralised phases. Late-mineral porphyry phases were also identified in the drilling and impact grade continuity within the deposit where they intrude and stope out the earlier more mineralised phases.

The Kili Teke deposit remains open to the southeast and at depth down plunge and drilling at the prospect continues targeting:

- Zones of skarn mineralisation within and around the main intrusive complex. Skarn mineralisation has not yet been included in the model. These have the potential to develop into high-grade massive sulphide lodes which could be selectively mined provided grade continuity and size (tonnage) can be established. KTDD025 for example intersected: 7.8m @ 12.98% Cu, 11.45 g/t Au from 920.5m
- The deposit remains open at depth where trends in the copper-sulphur ratios suggest higher-grade (bornite) stockwork mineralisation may be developed
- The deposit remains open to the southeast under cover of the limestone cap. Further drilling to scope out the full extent of the intrusive complex is planned
- Additional intrusive centres with mineralisation outside of the current resource area; potentially driving marbleisation intersected at the Gold Ridge Anomaly or the intense alteration and accompanying sulphides evident at the Transfer Zone Porphyry target

#### **Kili Teke deposit**

Overall the geometry of the deposit remains as a relatively steeply plunging, pipe-like intrusive complex, with mineralization decreasing away from the central high-grade stockwork zones of copper gold mineralisation. Intense marbleisation and skarn mineralisation is developed around the peripheral contact with the host sequence. Variably developed skarn mineralisation also occurs along internal structural and contact zones.

### **Kili Teke infrastructure, scoping and desktop concepts**

Kili Teke is located on EL2310, some 50km north-northwest of the Tari Township (which is the provincial capital of the Hela Province in the Highlands of Papua New Guinea) and approximately 40km west-northwest of Porgera. The nearest road access point, which connects through to the Highlands Highway at Tari is approximately 14km from the Kili Teke prospect.

Pre-concept study work has confirmed technically-viable solutions exist for mining, processing, infrastructure and logistics at Kili Teke, and no fatal flaws were identified. The gold-copper mineral resource at Kili Teke extends to surface and would lend itself to an open-pit operation. First pass rougher kinetic test work for metallurgical recovery shows that copper recovers extremely well (90%) and gold recovers well (65%). Further deposit concept and study work is planned for FY17 in conjunction with the drill programme.

The Hela Province and the Tari area in particular are currently undergoing a major infrastructure upgrade following on from the national liquefied natural gas project development. The Papua New Guinea government recently announced funding for several significant infrastructure projects including the sealing of the roads between Komo, Tari, Koroba and Mendi, and a major upgrade of the Hides gas-fired power plant and rural electrification programme. The Hides power plant supplies electricity to the Porgera gold mine. The Komo airstrip, located approximately 80km south of Kili Teke, is the largest sealed airstrip in the country and is capable of taking large cargo planes.

### **WAFI GOLPU – A ROBUST INVESTMENT CASE**

Harmony and Newcrest each currently own 50% of Golpu through the Wafi Golpu Joint Venture. The Golpu deposit is located approximately 65km southwest of Lae in the Morobe Province of Papua New Guinea which is the second largest city in Papua New Guinea and will host Golpu's import and export facilities. The proposed mine site sits at an elevation of approximately 400m above sea level in moderately hilly terrain and is located near the Watut River, approximately 30km upstream from the confluence of the Watut and Markham rivers

In February 2016, the Wafi Golpu joint venture completed feasibility and prefeasibility studies for the Wafi Golpu gold-copper project and declared updated resources and reserves for the project. Both studies confirmed a robust investment case – one that supports proceeding with the project.

The initial project capital on a 100% basis is estimated at US\$2.6 billion, yielding an internal rate of return of 16%. These feasibility study outcomes justify the development of twin exploration access declines, with two proposed block caves (BC 1 and BC 2) designed to extract approximately 50% of the contained metal (gold and copper) of the Golpu reserve. The remaining reserve is to be extracted by a deeper third block cave (BC 3) which is the subject of the prefeasibility study. The common path mining and processing infrastructure, as defined in the feasibility study, will be used in support of project optimisation, expansion and extended mine life as described in the prefeasibility study.

#### **FEASIBILITY STUDY**

The feasibility study defines initial development of the Golpu resource and focuses on the development of the first two block caves, and all associated infrastructure required. The key findings of the feasibility study include:

- Low operating costs will withstand low commodity price cycles and will benefit from high returns during higher commodity price cycles
- The updated ore reserve at 31 December 2015, is estimated to contain 5.5Moz of gold and 2.4Mt of copper (Harmony's 50% interest)
- Project de-risked, with no significant deviation from the previous prefeasibility study economic outcomes and technical recommendations
- Golpu is amenable to "staged development"
  - allows for optimising capital efficiency
  - progressively de-risks the project prior to further investments
- Financial metrics include (the feasibility study is considered to be at  $\pm 15\%$  accuracy)
  - net present value: US\$1.1 billion

- internal rate of return: ~16%
- maximum negative free cash flow (100% basis): US\$1.8 billion
- Initial mine development targets higher-grade sections of the deposit thereby optimising free cash flow
- Development of the near-surface block cave 1 affords early cash flow thereby reducing the maximum negative cash outflow
- Production parameters for the two block caves are:

	Annual mining rate	Tonnes mined	Gold grade	Copper grade
Block cave	(Mt)	(Mt)	(g/t)	(%)
Block cave 1	3.0	8	0.99	2.00
Block cave 2	6.0	143	1.05	1.54

- Block caving is the preferred mining method for the following reasons:
  - ore body geometry and indicative rock mass characteristics are suited to block caving
  - it is a high productivity, low operating cost underground mining method
- The project is in close proximity to the city of Lae with established infrastructure such as roads, marine port, airport, and light industry

#### Summary of the key metrics (100% basis) of the feasibility study:

Area	Measure	Unit	Results
Production	First ore milled	Months from start of earthworks	~60
	Steady-state production	Months from start of earthworks	~90
	Ore mined and milled	Mt	149
	Life of mine	Years	28
Copper	Metal produced	Mt	2.2
	Peak annual copper production	000t pa	135
	Copper recoveries	%	94
Gold	Gold metal produced	Moz	3.6
	Peak annual gold production	000oz	297
	Gold recoveries	%	70
Capital	Project capital	US\$ billion	2.6
	Sustaining capital	US\$ billion	1.6
	Total life of project capital	US\$ billion	4.2
	Maximum negative cash flow	US\$ billion	1.8
Operating costs	Total operating cost (real)	US\$/t	30.66
	Realisation cost	US\$/t	17.61
	Cash cost	US\$/lb produced	0.59
	Total sustaining production cost	US\$/lb produced	0.89
	Total production cost	US\$/lb produced	1.45
Economic assumptions	Gold price	US\$/oz	1 200
	Copper price	US\$/lb	3.00
	Exchange rates	AU\$/US\$	0.80
		PGK/US\$	2.85
	Discount rate (real)	%	8.50
Financial outcomes	Net present value	US\$ billion	1.1
	Internal rate of return	%	~16

The operating cost estimate covers all operating expenditure to mine, treat and administer extraction of the ore body, as well as transporting, dewatering and ship-loading of the concentrate at the port of Lae. Cash costs and total production costs include treatment and refining charges, freight to end customers, royalties and mining levies. Total production cost includes sustaining and construction capital costs. The realisation cost estimate in the financial model is US\$17.61/t, this includes treatment and refinery costs, concentrate transport and handling costs, and royalties and is not included in the total operating cost. Any real, above inflation, price escalation of costs to the time of forecast expenditure has been excluded. Costs are however sourced and forecast in the underlying currency in which they are incurred.

### Capital costs

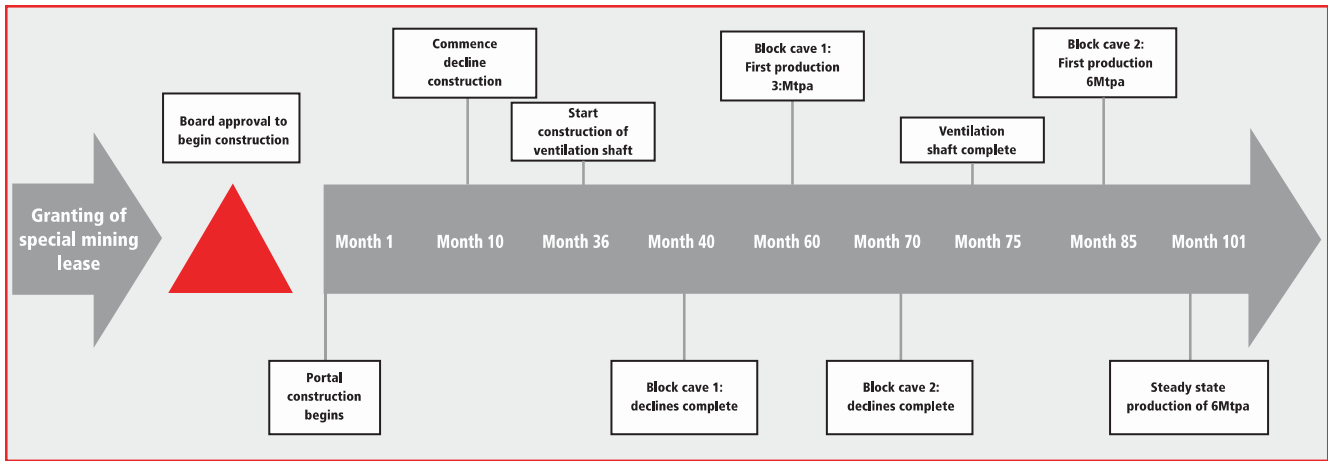
Harmony's share (50%) of the estimated capital requirements (based on the feasibility study) from grant of the special mining lease are approximately as follows:

No Government <sup>o</sup> buy-in (Harmony 50%)			Government <sup>o</sup> buy-in (Harmony 35%)		
Year	Project cash flow (incl capital expenditure)		Year	Project cash flow (incl capital expenditure)	
	US\$m			US\$m	
FY17 and FY18	*		FY17 and FY18	*	
FY19	(115)		FY19	37	Grant of special mining lease and Government buys 30% for US\$235m
FY20	(115)		FY20	(81)	
FY21	(145)	External funding of US\$25m required	FY21	(102)	
FY22	(260)		FY22	(182)	
FY23	(240)		FY23	(168)	
<b>Total</b>	<b>(875)</b>		<b>Total</b>	<b>(496)</b>	

<sup>o</sup> Government of Papua New Guinea

\* Insignificant expenditure up to granting of the special mining lease. The above funding requirements are based on the project permitting timeline with on-the-ground activities only commencing post grant of a special mining lease in FY19

### Wafi Golpu: Development timeline



## Community engagement

Engagement with key stakeholders, including the Papua New Guinea national government, the Morobe provincial government, landowners and community representatives continues so as to ensure clear alignment on the project objectives. In parallel with further technical studies and project definition, the local communities will be actively engaged and appraised of the project development roadmap and next steps. The three major communities involved are the Hengambu, Yanta and Babuaf, spread over 15 villages in the region. The local communities remain supportive of the project.

## Further work on the feasibility study

The following areas will be the focus of further assessment to optimise the study outcomes and the incorporation of additional data which will be collected in the next study phase.

**Access declines:** Declines towards the ore body affording drilling platforms are required in order to verify geotechnical and hydrological interpretations of the ore body at depth.

**Geotechnical interpretation:** Further underground drilling and mapping work is required to confirm assumptions of the rock mass characteristics in each block cave and the rock mass response to the changing stress regime.

**Tailings management:** Further assessment of tailings disposal options including the potential for deep-sea tailings placement, which could result in a decrease in capital expenditure.

**Hydrology:** The management of water will be central to the success of the mining operation, primarily due to the nature of the geological environment of the project site. Further investigation and modelling of water will focus on increasing the confidence in the geohydrology model by obtaining additional data from drilling campaigns, modelling the effectiveness of a dewatering bore field around the block cave subsidence zone, and streamflow and surface hydrology modelling and management.

**Permitting and environmental approvals:** Work will continue with the Papua New Guinea Government to obtain statutory environmental approvals and other regulatory permits for the project.

**Port and power:** Further assessment of optimal arrangements for port facilities and power supply.

## PREFEASIBILITY STUDY

The prefeasibility study was conducted in parallel to the feasibility study. The first optimisation step looked at debottlenecking the 6Mtpa capacity from block cave 2. The debottlenecking increased the production capacity to 7Mtpa by making minor and low cost modifications to the process plant grinding circuit and the underground material handling system.

The access declines to the block caves in both the feasibility study and prefeasibility study were treated as common path access embedding optionality and flexibility in the designs to scale the operation up with a relatively low capital investment in response to increasing commodity prices.

The second optimisation step was increasing the mine's production rate. By optimising all existing feasibility study infrastructure and increasing the size of the underground loader fleet, a higher mining production output from block cave 2 can be achieved, without a significant capital investment. A second process plant with a capacity of 7Mtpa would be constructed to bring total plant capacity to 14Mtpa.

The third and final optimisation investigated by the prefeasibility study was to extend the life of the operation with the construction of a third block cave below the second block cave. Additional capital is required to extend the decline access and conveyor belt system, the ventilation system and establish the associated underground infrastructure.

**Summary of the key metrics (100% basis) of the prefeasibility study:**

Description	Unit	Feasibility study	Prefeasibility study <sup>1</sup>		
			Step 1	Step 2	Step 3
<b>Financials</b>					
Net present value	US\$ million (real)	1 087	1 240	1 338	1 954
Internal rate of return	%	15.6	16.3	16.8	17.5
Maximum negative cash flow (real)	US\$ million	1 763	1 763	1 763	1 763
Free cash flow generation (annual real – steady state average)	US\$ million	249	298	405	402
<b>Schedule</b>					
Maximum annual ore throughput	Mt	6	7	14	14
Life of mine	years	28	25	18	35
<b>Production</b>					
Ore mined	Mt	149	153	155	379
<b>Copper</b>					
Average grade	%	1.58	1.58	1.57	1.26
Total recovered	000t	2 233	2 301	2 306	4 547
Annual average recovered over life of mine	000t	80	92	128	130
<b>Gold</b>					
Average grade	g/t	1.06	1.06	1.05	0.91
Total recovered	000oz	3 573	3 527	3 509	7 058
Annual average recovered over life of mine	000oz	128	141	195	202
<b>Capital expenses<sup>2</sup></b>					
Project capital	US\$ millions (real)	2 640	2 656	2 656	2 656
Expansion capital	US\$ millions (real)	–	10	572	1 261
Sustaining and expansion capital	US\$ millions (real)	1 551	1 499	2 175	3 725
<b>Operating expenses<sup>2</sup></b>					
Total operating cost	US\$/t ore milled	30.66	28.12	24.16	23.95

		Feasibility study	Prefeasibility study <sup>1</sup>		
Description	Unit		Step 1	Step 2	Step 3
Cash cost	US\$/lb Cu real (life-of-mine average)	0.59	0.55	0.44	0.60
<sup>1</sup> All prefeasibility study outcomes are shown on a life-of-mine basis					
<sup>2</sup> Costs are based on 2016 real estimates					

## DEVELOPMENTS SUBSEQUENT TO YEAR-END

In August 2016, an application for a special mining lease for the Wafi Golpu project was submitted to the Mineral Resources Authority in Papua New Guinea. Submission of this application follows reviews of the project feasibility study project by the boards of directors of both Harmony and Newcrest and brings the project one step closer to realising more value for Golpu.

Work to optimise the outcome of the studies and to incorporate additional data continues. Further project development will be subject to the granting of the special mining lease, the obtaining of all necessary permits, approvals and agreements and, ultimately, approval by the boards of both Harmony and Newcrest.



# SOUTH AFRICA

## BROWNFIELDS EXPLORATION

A summary of brownfields exploration conducted in South Africa in FY16 and planned for FY17:

<b>Tshepong B Reef</b>		
<b>Target</b>	<b>Progress in FY16</b>	<b>Targets/plans for FY17</b>
Continuation of B Reef exploration to maintain current levels of B Reef mining. Drilling to identify areas of economic value in the down dip extensions of the B Reef channels currently being mined	Geological interpretation has been completed, drilling platforms have been identified and drilling schedules established to confirm the down dip extensions of the B Reef channels identified in the Leeubosch, Midas and Horizon dyke areas	Drilling will begin from six new areas on four levels at Tshepong
<b>Phakisa B Reef</b>		
<b>Target</b>	<b>Progress in FY16</b>	<b>Targets/plans for FY17</b>
Currently, the B Reef is not being mined. Exploration drilling to be undertaken to identify areas of economic value in the down dip extensions of the channels being mined at neighbouring Tshepong. Significant potential may exist to mine the B Reef north of the shaft pillar on Phakisa	Geological interpretation has been completed, drilling platforms have been identified and drilling schedules established to confirm the B Reef channel to the north of the Zindaba Dyke	Drilling will begin from levels 69 to 75 north of the Zindaba Dyke from the 65 line northwards
<b>Doornkop Main Reef</b>		
<b>Target</b>	<b>Progress in FY16</b>	<b>Targets/plans for FY17</b>
Drilling for Main Reef that is located 60-70m below the current economic South Reef and is classified as a minor reef that can be explored and mined utilising most of the current South Reef infrastructure	Geological interpretation has been done, drilling platforms have been identified and drilling schedules established to confirm the Main Reef channel	Drilling to begin from four drilling platforms on 197 level (13 holes have been planned)
<b>Doornkop South Reef</b>		
<b>Target</b>	<b>Progress in FY16</b>	<b>Targets/plans for FY17</b>
Current South Reef structural model in the inferred areas is based on that of the Kimberly Reef, which lies stratigraphically 800m above the South Reef. Drilling of long-incline boreholes will be done to assist with modelling of the South Reef on levels 202, 207 and 212	Geological interpretation has been done, drilling platforms have been identified and drilling schedules established to confirm the levels where South Reef can be mined	Drilling will begin from seven different platforms to confirm the presence of the South Reef on levels 202, 207 and 212
<b>Doornkop seismic study</b>		
<b>Target</b>	<b>Progress in FY16</b>	<b>Targets/plans for FY17</b>
Currently, our South Reef structural model is based on that for the Kimberly Reef, which lies stratigraphically 800m above the South Reef. The seismic survey will identify and locate major geological structures and South Reef levels	Geological interpretation has been conducted, traversing survey lines have been identified and schedules established to confirm major geological structures as well as those levels where the South Reef can be mined	The seismic survey, which consists of nine lines and 72 line kilometres of traversing, aims to cut across major structures within the mine boundary to enable us to determine the extent of these major structures and potential production levels

<b>Kalgold</b>		
<b>Target</b>	<b>Progress in FY16</b>	<b>Targets/plans for FY17</b>
Three potential mineralised zones have been identified south of the D Zone pit	Geological interpretation has been done and drilling traverses planned	Reverse circulation drilling traverses will be drilled at the potential targets (38 boreholes have been planned)
<b>Harmony-White Rivers Exploration joint venture</b>		
<b>Target</b>	<b>Progress in FY16</b>	<b>Targets/plans for FY17</b>
The main objective of this exploration joint venture is to explore and develop potential gold resources at White Rivers Exploration (Pty) Limited's Beisa Project and abutting exploration areas within Harmony's adjacent Target complex	In terms of the agreement, White Rivers and Harmony (through Loraine Gold Mines Limited and Avgold Limited) will have initial and fixed interests of 65% and 35% respectively in the exploration joint venture. White Rivers will fund and manage exploration activities to prefeasibility study level. Initial exploration activities, which include collation of historical data, interpretation and verification of data, and geological modelling, are in progress. The initial resource in the project area has been identified and the scoping study has been carried out.	Good progress is being made and an initial resource is expected to be declared during FY17  Underground exploration drilling is planned but would require rehabilitation of the underground access area  The prefeasibility study is to begin once exploration results become available

**Projects**

A summary of projects currently underway in South Africa in FY16 is as follows

**Joel North**

Target	Progress in FY16	Targets/plans for FY17
Mining down to 137 level	Infrastructural development on 129 level was completed and the declines have reached 137 level. Equipping of the conveyor decline has begun from 137 level up towards 129 level	Completion of capital development on 137 level, the twin declines and the installation of the permanent conveyor

**Tailings retreatment expansion**

Target	Progress in FY16	Targets/plans for FY17
Retreatment of additional tailings in the Free State	Initial water study completed. Investigated retreatment of a further 1Mt of tailings per month	Completion of prefeasibility and feasibility studies

**Central plant tailings reclamation**

Target	Progress in FY16	Targets/plans for FY17
Reclaim material from FSS5 tailings facility for processing at the central plant (to be converted for tailings re-treatment) at a rate of 300 000t annually. Central plant operation will be similar to the highly profitable Phoenix operation, which has been in operation since 2007	Capital for this project was approved towards the end of the financial year and implementation has begun	Complete implementation of project by end of the financial year

# CORPORATE GOVERNANCE

## THE VALUE OF GOOD CORPORATE GOVERNANCE

Harmony's corporate governance framework and processes are aimed at fulfilling the company's obligations to all stakeholders. These obligations are the foundation both of our strategy and of our values, and are inseparable from our practice of corporate governance.

Harmony's board is tasked with making the decisions necessary to shape the strategy and to guide the company in attaining its strategic goals. We thus seek particular skills in our board members to enable them to contribute meaningfully to the company. These skills include knowledge of the South African gold mining industry as well as the local and international economy, financial and/or mining expertise, an understanding of socio-economic expectations and knowledge of the legislation and regulations in the jurisdictions in which we operate.

Harmony's values are entrenched in our codes of conduct and behaviour and underpin not only our approach to corporate governance but everything we do, and every decision that we make. Moreover, our board members live our values and lead by example by making decisions that are in line with our values. Leadership, strategy and our values are interdependent and our approach to corporate governance seeks to ensure this.

Each quarter, the board, through the audit and risk committee, reviews the company's risks and operational, financial and sustainability performances, and relates these back to strategy at the annual strategy session.

## OUR APPROACH TO CORPORATE GOVERNANCE

### Governance practices and reporting

The foundation of our corporate governance is compliance with the Companies Act, the requirements of the JSE Limited, where we have our primary listing, and the New York Stock Exchange as well as the King Report on Governance for South Africa and the King Code of Governance Principles (King III) and related principles of good corporate governance. Harmony also complies voluntarily with the principles of the United Nations Global Compact, International Council on Mining and Metals, the Global Reporting Initiative and the Cyanide Code.

In line with the JSE Listings Requirements, we continue to apply the principles of King III. A detailed King III compliance register can be found on our website at [www.harmony.co.za](http://www.harmony.co.za).

New York Stock Exchange foreign private issuers, such as Harmony, must briefly highlight any significant ways in which their corporate governance practices differ from those followed by United States domestic companies subject to the listing standards of the New York Stock Exchange. A brief summary of the significant differences can be found in our 2016 Form 20-F filed with the United States Securities and Exchange Commission on our website at [www.harmony.co.za/investors/reporting/20f](http://www.harmony.co.za/investors/reporting/20f).

Our governance structures and processes are reviewed regularly and adapted when necessary to reflect what is happening internally in Harmony, as well as to keep up with national and international best practice.

### Board leadership

We have paid specific attention to the composition of our board to ensure a balance of power. Harmony has a unitary board comprising executive and non-executive directors with a majority of independent non-executive directors.

On the recommendation of the nomination committee and in terms of the King III requirement, the board was evaluated and the classification confirmed of all independent non-executive directors. This includes directors serving on the board for longer than nine years.

The roles of the chairman and chief executive officer are distinct and separate, as governed by the board's terms of reference and delegation of authority framework.

Our chairman, Patrice Motsepe, was appointed based on the value he adds to Harmony in this role, given the vital skills he has. Patrice has served on our board since 2003 and was most recently re-elected as chairman in August 2016. In terms of our succession plan, the chairman is currently supported by a deputy chairman, Modise Motloba, who has held this position since August 2012. As determined in accordance with King III, Patrice is considered to be a non-independent, non-executive director.

As a result, Fikile De Buck was re-appointed by the board as our lead independent non-executive director in August 2016. Her role is in line with the recommendations of King III and she assists the board in managing any actual or perceived conflicts of interests that may arise from the non-independence of the chairman. Mavuso Msimang was appointed deputy lead independent non-executive director on 5 May 2014.

For more on the members of our board, see Board of Directors in this report.

### **Appointment of directors**

The responsibility for board appointments lies with the nomination committee, which recommends all new board appointments and reviews succession plans for directors and management. In line with King III, the board chairman is a member of this committee. The procedures governing appointments are formal and transparent. While the nomination committee recommends individuals as members of the board, the appointment of board members is considered by the board as a whole, in accordance with its terms of reference. These appointments are, in turn, approved by shareholders.

When making new appointments to the board, Harmony considers the following factors: skills; experience, gender and demographics. We are satisfied that we currently have an acceptable balance of members and that our non-executive and independent directors have sufficient experience and knowledge among them to carry significant weight in the board's decision-making process.

### **Board induction and training**

Once appointed, directors undergo the company's board induction programme. Managed by the company secretary, this programme provides new board members with comprehensive company information and governance packs. It also offers directors the opportunity to meet with various management teams and to tour the business. No new directors were appointed during the year.

A formal training-needs analysis is conducted annually to ensure board members are appropriately trained, with ad hoc training opportunities identified during the year. Formal training on relevant topics is given at each board meeting, while the company secretary provides board members with regular updates on regulatory and industry developments. Our board also took time to visit our operations and community projects during the year.

### **Board responsibilities**

The board responsibilities are carried out with the company's best interests in mind. Our board receives sufficient information to ensure objective decision-making, and is expected to act rationally at all times. Our code of conduct enshrines behaviour that puts the best interests of Harmony ahead of those of individuals. The code of conduct is available at [www.harmony.co.za/sustainability/governance#policies](http://www.harmony.co.za/sustainability/governance#policies).

One of the board's primary functions is to establish management structures and processes that assist in maintaining the sustainability of our business in terms of our financial, social and environmental performance. The board and its committees have work plans in place that allow them to address their responsibilities adequately throughout the year. These work plans are reviewed and confirmed quarterly.

Responsible citizenship is core to the company and, through the social and ethics committee, the board ensures we remain a committed, socially responsible corporate citizen. One of the ways in which the board ensures Harmony is a good corporate citizen is by considering and responding to the legitimate expectations of stakeholders. This requires a careful balance between promoting our business interests and protecting our stakeholder relations – it is essential that Harmony remains profitable in order to be able to share these profits with stakeholders. The social and ethics committee receives quarterly reports on stakeholder engagement, which it uses to monitor progress and provide feedback to the board. In addition, the board is kept informed of shareholder perceptions after roadshows and other shareholder engagements (refer to the Material Issues and Stakeholder Engagement section).

To sustain our business, we need to ensure our balance sheet remains strong and flexible. The board undertakes quarterly reviews of our financial performance, while the executive management team reviews our operational results on a weekly basis. If the company were found to be in financial distress, the board would consider what mechanisms would be appropriate to address this. Ordinarily, the board uses these quarterly reviews to perform solvency and liquidity tests to support the going concern statement, in line with the provisions of the Companies Act.

In line with the International Integrated Reporting Council guidelines, the board reviews and approves this integrated report as part of its annual duties. The audit and risk committee makes a final recommendation to the board for consideration.

The board monitors the performance of the chief executive officer. The board also evaluates succession plans for the chief executive officer and executive management annually to ensure a continuation of skills and expertise for the future.

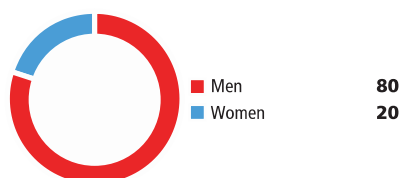
### Composition and skills

We have paid specific attention to the composition of our board to ensure that it reflects our objectives and that board members have the skills and expertise necessary to contribute to the sustainability of our company. Three of Harmony’s non-executive directors are women and nine directors are considered to be historically disadvantaged South Africans to give representation by this grouping of almost 60%, thus exceeding the 2014 Mining Charter requirement that 40% of the board comprise historically disadvantaged South Africans.

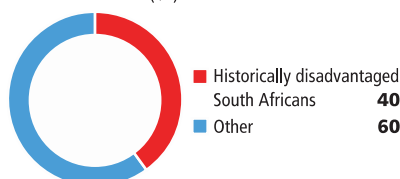
Critical to the achievement of our strategy is ensuring the company consists of teams with the skills and vision necessary to achieve our strategic targets. The board is no exception – it is made up of individuals who understand our industry, our sector and our strategy. The skills of the members of the board includes expertise in local and international mining, geology and mining technology, social and environmental compliance, strategic and project management expertise, law and investment, stakeholder management and human resources.

### Board composition

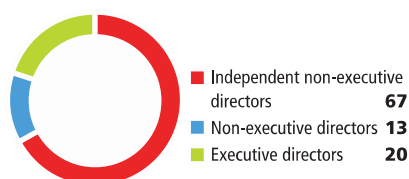
By gender (%)



By historically disadvantaged South Africans (%)



By director (%)



## NOTEWORTHY ACTION – BUILDING RELATIONSHIPS WITH STAKEHOLDERS

The board interacts with many of our key stakeholders during the course of the year. This, we believe, is important – our relationships are central to our business and our strategy. Insight into these relationships improve board members’ ability to fulfil their roles appropriately.

During FY16, the board spent time with our employees during site visits to the operations, which included visits to Papua New Guinea, Kusasaletu, Joel, Tshepong/Phakisa and a discussion on sustainable mining at Kalgold.

In addition, the chief executive officer and financial director had direct contact with investors through road shows, while the board interacted with shareholders at the annual general meeting. The chief executive officer and executive managers continuously engage with the greater industry through the Chamber of Mines and various forums/meetings.

### Board committees

In order to focus on our priorities, particular responsibilities have been delegated to board committees in terms of the board delegation of authority and the committees’ terms of reference. The board does not abdicate its overall responsibility but rather the work done by these committees serves to support the board in executing its responsibility. At each board meeting, the committee chairmen report on the activities of their respective committees and make recommendations on key decisions. Some duties are further delegated to the chief executive officer and financial director who, in turn, delegate some of these responsibilities to the executive committee and management, who are closer to the operations. A clear line of communication is in place to ensure these responsibilities are well managed, underpinning our value of accountability.

Each board committee comprises board members with the skills and expertise that suit its portfolio, allowing committee members to apply their minds and make well-considered recommendations to the board. Minutes of each committee meeting are included in the board packs distributed prior to board meetings to provide context to deliberations at committee meetings. To ensure board members are able to fully consider what they need to within these committees, and on the board, each director has unrestricted access to the advice and services of senior management, allowing them insight into the business, as well as full access to company and subsidiary information, records, documents and property. Our non-executive directors are encouraged to visit our operations and attend management meetings to get a sense of how they are run. However, they remain independent, allowing management to fulfil their duties fully. If they feel it is necessary, our board members can request independent, professional advice at the company’s expense.

Audit and risk committee	
<b>Members</b> John Wetton* (chairman) Fikile De Buck* Modise Motloba* Simo Lushaba* Karabo Nondumo* * Independent non-executive	<b>Description of committee’s overall expertise and experience</b> <ul style="list-style-type: none"> <li>• A total combination of the following skills and experiences on the part of the individual members of this committee enables them to execute their duties as members of the audit and risk committee:</li> <li>• Accounting experience, experience in investment banking, treasury services and fund management</li> <li>• Roles on various other boards, as well as industry bodies</li> <li>• Governance experience</li> <li>• Knowledge of business development in and around Africa</li> <li>• Previous roles as chief financial officers, business managers and an external auditor. Therefore a good understanding of company finances, risk, processes and controls</li> </ul>
<b>Primary functions</b> <ul style="list-style-type: none"> <li>• Monitors the operation of an adequate system of internal control and control processes</li> <li>• Monitors the preparation of accurate financial reporting and statements in compliance with all applicable legal and corporate governance requirements and accounting standards</li> <li>• Monitors risk management, ensures that significant risks identified are appropriately addressed and supports the board in the overall governance of risk</li> </ul>	
<b>Key activities and actions in FY16</b>	
For the actions of the audit and risk committee in FY16 refer to the audit and risk committee chairman’s report.	

<b>Investment committee</b>	
<b>Members</b> Simo Lushaba* (chairman) Ken Dicks* Cathie Markus* Karabo Nondumo* <sup>^</sup> Vishnu Pillay* John Wetton* André Wilkens * Independent non-executive <sup>^</sup> Appointed 25 May 2016	<b>Description of committee's overall expertise and experience</b> <ul style="list-style-type: none"> <li>• The combination of the following skills equips the investment committee with knowledge of what reasonable returns on investments are and a thorough understanding of the investment process, as well as insight into what investors want:</li> <li>• Occupy various roles on other boards</li> <li>• Experience in entrepreneurship and business development</li> <li>• Extensive knowledge of the mining, legal and financial industries</li> </ul>
<b>Primary functions</b>	
<ul style="list-style-type: none"> <li>• Considers projects, acquisitions and disposals in line with Harmony's strategy and ensures that due diligence procedures are followed</li> <li>• Conducts other investment-related functions designated by the board</li> </ul>	
<b>Key activities and actions in FY16</b>	
<ul style="list-style-type: none"> <li>• Reviewed and recommended the budget and business plans for FY17</li> <li>• Considered investments, proposals, projects and proposed acquisitions in line with the board's approved delegation of authority and the committee's terms of reference</li> </ul>	

<b>Nomination committee</b>	
<b>Members</b> Fikile De Buck* (chairman) Joaquim Chissano* Patrice Motsepe Modise Motloba* Mavuso Msimang* * Independent non-executive	<b>Description of committee's overall expertise and experience</b> <ul style="list-style-type: none"> <li>• The following insights allow the committee to find and nominate individuals who will add value to our Harmony board in the areas that we require:</li> <li>• Experience in the mining, financial, accounting and legal sectors</li> <li>• Extensive experience in management and leadership roles</li> <li>• Understanding of Harmony, and its needs, as well as of the requirements of being on a board</li> </ul>
<b>Primary functions</b>	
<ul style="list-style-type: none"> <li>• Ensures that procedures governing board appointments are formal and transparent</li> <li>• Makes recommendations to the board on all new board appointments</li> <li>• Reviews succession planning for directors and other members of the executive team and oversees the board's self-assessment process</li> </ul>	
<b>Key activities and actions in FY16</b>	
<ul style="list-style-type: none"> <li>• Reviewed succession planning for directors and other members of the executive team and oversaw the board's self-assessment process</li> <li>• Reviewed and recommended directors for re-election who retired by rotation in terms of the company's memorandum of incorporation</li> <li>• Reviewed and recommended the composition, structure and size of the board and board committees</li> <li>• Considered the positions of the chairman of the board, the deputy chairman of the board, the lead independent director and the deputy lead independent director and made recommendations to the board</li> <li>• Reviewed and recommended the independence of non-executive directors (especially independent non-executives serving on the board for longer than nine years)</li> <li>• Reviewed and recommended succession plans for the board, the chairman of the board, the chief executive officer, executive management, the company secretary and the head of internal audit</li> <li>• Followed a transparent and formal process in recommending the appointment of Peter Steenkamp as the company's new chief executive officer</li> </ul>	

<b>Remuneration committee</b>	
<b>Members</b> Cathie Markus* (chairman) Fikile De Buck* Simo Lushaba* Vishnu Pillay* John Wetton* André Wilkens * Independent non-executive	<b>Description of committee's overall expertise and experience</b> <ul style="list-style-type: none"> <li>• Experience in accounting, remuneration and financial management roles, as well as legal and mining experience, allowing members to ensure our remuneration is aligned with industry standards, best practice and legislation</li> <li>• Knowledge of the duties and responsibilities of board and executive positions, allowing realistic key performance indicators to be related to remuneration</li> </ul>
<b>Primary functions</b>	
<ul style="list-style-type: none"> <li>• Ensures directors and executive managers are fairly rewarded for their contribution to Harmony's performance</li> <li>• Assists the board in monitoring, reviewing and approving Harmony's compensation policies and practices, and in administering its share incentive schemes</li> <li>• Operates as an independent overseer of the group remuneration policy and makes recommendations to the board for final approval</li> </ul>	



<b>Key activities and actions in FY16</b>	
<ul style="list-style-type: none"> <li>Reviewed and recommended the remuneration policy to the board for inclusion in the notice to the annual general meeting for consideration by the shareholders as a non-binding advisory resolution (see Remuneration Report)</li> <li>Reviewed and recommended the remuneration report to be included in the integrated annual report (see Remuneration Report)</li> <li>Reviewed and recommended the non-executive directors' fees to the board for consideration and approval by shareholders. For more information, refer to the Report to Shareholders 2016, which is available at <a href="http://www.har.co.za">www.har.co.za</a></li> <li>Reviewed and recommended executive directors' and executive management's annual salary increases (see Remuneration Report)</li> <li>Reviewed the annual salary increases of the company secretary and the head of internal audit</li> <li>The details of these activities are contained in this committee's report, which can be found in the Remuneration Report.</li> </ul>	

<b>Social and ethics committee</b>	
<b>Members</b> Modise Motloba* (chairman) Joaquim Chissano* Fikile De Buck* Cathie Markus* Mavuso Msimang* John Wetton* * Independent non-executive	<b>Description of committee's overall expertise and experience</b> <ul style="list-style-type: none"> <li>Proven experience in the fields of sustainable and business development in Africa, community affairs, government relations, the drafting and implementing of charters, international relations and global leadership</li> <li>The collective experience of committee members brings with it the skills and relationships necessary to ensure Harmony can contribute to meaningful change through its social development and transformation work. In addition, this experience adds weight to the committee's ability to enforce the code of conduct within Harmony</li> </ul>
<b>Primary functions</b>	
<ul style="list-style-type: none"> <li>Oversees policy and strategies pertaining to occupational health and employee well-being, environmental management, corporate social responsibility, human resources, public safety and ethics management</li> <li>Monitors implementation of policies and strategies by executives and their management teams for each discipline referred to above</li> <li>Assesses compliance of the company against relevant regulations</li> <li>Reviews material issues in each of the above disciplines to evaluate their relevance in the reporting period, and to identify additional material issues that warrant reporting, including sustainability related key performance indicators and levels of assurance</li> </ul>	
<b>Key activities and actions in FY16</b>	
<ul style="list-style-type: none"> <li>Reviewed and recommended the social and ethics committee report to be included in the integrated annual report</li> <li>Reviewed and considered the social, economic and environmental issues affecting the company's business</li> <li>Reviewed and considered the effect that the company's operations had on the economic, social and environmental well-being of communities, as well as significant risks within the ambit of the committee's responsibilities</li> <li>Approved material elements of sustainability reporting and the key performance indicators which were externally assured</li> <li>Considered and monitored the company's employment relationships</li> <li>Attended a site visit to the company's sustainable mining initiatives and community projects at Kalgold</li> <li>See the Social and Ethics Committee: Chairman's report</li> </ul>	

<b>Technical committee</b>	
<b>Members</b> André Wilkens (chairman) Ken Dicks* Vishnu Pillay* Karabo Nondumo* * Independent non-executive	<b>Description of committee's overall expertise and experience</b> <ul style="list-style-type: none"> <li>Decades of experience in the mining industry, particularly in gold, mining technology and mining engineering</li> <li>Strong research skills</li> <li>This experience allows members to grasp fully the technical and operational challenges facing Harmony and lend their knowledge to the tasks required of them</li> </ul>
<b>Primary functions</b>	
<ul style="list-style-type: none"> <li>Provides a platform to discuss strategy, performance against targets, operational results, projects and safety</li> <li>Informs the board of key developments, progress against objectives and the challenges facing operations</li> <li>Reviews strategic plans before recommending such to the board for approval</li> <li>Provides technical guidance and support to management</li> </ul>	
<b>Key activities and actions in FY16</b>	
<ul style="list-style-type: none"> <li>Monitored exploration in South Africa and Papua New Guinea</li> <li>Monitored all South African and Papua New Guinean operations</li> <li>Reviewed and recommended to the board the company's annual budget and business plans</li> <li>Monitored safety across all operations</li> <li>Attended underground site visits to Kusasaletu, Joel and Tshepong/Phakisa.</li> </ul>	

During FY16, the majority of the members of all board committees were independent non-executive directors. All board committees were chaired by an independent non-executive director, except for the technical committee chaired by André Wilkens (a non-independent, non-executive director). The board is confident that André's leadership as chairman of the technical committee is in the best interest of the company, based on his extensive knowledge of the specific areas of responsibilities of that committee.

## Board and board committee meeting attendance

	Board	Audit and risk	Nomination	Remuneration	Technical	Investment	Social and ethics
Number of meetings	7	6	3	6	8*	4**	6**
Patrice Motsepe (chairman)	6	–	3	–	–	–	–
Modise Motloba (deputy chairman)	7	5	3	–	–	–	6
Joaquim Chissano	5	–	1	–	–	–	4
Fikile De Buck	6	6	2	5	–	–	4
Ken Dicks	7	–	–	–	8	4	–
Simo Lushaba	6	5	–	5	–	4	–
Cathie Markus	7	–	–	6	–	3	6
Mavuso Msimang	6	–	3	–	–	–	4
Karabo Nondumo***	7	5	–	–	6	–	–
Vishnu Pillay	5	–	–	4	8	4	–
John Wetton	7	6	–	6	–	4	6
André Wilkens	7	–	–	6	8	4	–
Peter Steenkamp	3 <sup>^</sup>	–	–	–	–	–	–
Frank Abbott	7	–	–	–	–	–	–
Mashego Mashego	6	–	–	–	–	–	–
Graham Briggs	4 <sup>#</sup>	–	–	–	–	–	–
– Not applicable			<sup>^</sup> Appointed to the board on 1 January 2016				
* Includes two site visits			<sup>#</sup> Resigned from the board on 31 December 2015				
** Includes one site visit			*** Appointed to the Investment Committee in May 2016				

## Company secretary

In terms of the JSE Listings Requirements, the board has, on the recommendation of the nomination committee, considered the performance, qualifications, level of experience and competence of the company secretary. The board is satisfied that Riana Bisschoff is sufficiently competent, qualified and experienced to act as Harmony's company secretary. The board is further satisfied that Riana is not a director of the board or any of the company's subsidiaries and that she maintained an arm's-length relationship with the board during FY16.

The following information was taken into consideration during the review:

Riana Bisschoff (LLB, LLM) is a qualified attorney, conveyancer and notary. She has been a company secretary for the past 12 years (nine years in a listed environment). Riana was appointed group company secretary in March 2012, and is fully supported by the board and management. She plays an active role in achieving good corporate governance, supporting the chairman and the board in:

- ensuring the effective functioning of the board
- providing guidance to the chairman, board and directors of Harmony's subsidiaries on their responsibilities and duties in the prevailing regulatory and statutory environment
- raising matters that may warrant the attention of the board

The company secretary assists in ensuring that the board's decisions and instructions are clearly communicated and is available as a central source of guidance and advice in Harmony on matters of ethics.

## Board evaluation

The board conducts annual self-assessments of its own performance, as well as the performances of its board committees, individual directors and the chairman. From this process, a full report on the findings and recommendations is drawn up, and the board implements any changes necessary during the following financial year.

## Legislative compliance

### **Relevant Global Reporting Initiative indicators: G4-S07, G4-S08**

One of the duties of the board is to ensure that Harmony complies with all applicable laws, in both South Africa and Papua New Guinea, and that it adheres to non-binding rules, codes and standards. During the year, Harmony implemented a comprehensive compliance management system aimed to provide added assurance on regulatory compliance and good governance practices.

Harmony paid no significant fines in any of its areas of operation and had no actions brought against it for anti-competitive behaviour, or for anti-trust or monopoly practices during FY16. See the chairman's report for the social and ethics committee report as well as the chairman's report for the audit and risk committee report.

Given the importance of public policy and our strategic objective of maintaining our licence to operate, we have increased our engagement in recent years with the South African government on policy, often through the Chamber of Mines. One such example is our engagement with the Department of Mineral Resources, through the Chamber of Mines, on the new draft of the Broad-Based Socio-Economic Empowerment Charter for the South African Mining Industry (Mining Charter). We have also engaged, both directly and indirectly, with Eskom and the energy regulator on issues that could have an impact on our operations, such as security of the power supply, the cost of electricity and potential carbon taxes.

## Rotation of directors

Aligning with King III and with Harmony's memorandum of incorporation, one-third of the board's non-executive directors must retire from office at each annual general meeting. These will be the non-executive directors who have been in office the longest since their last election. In addition, those directors appointed following the last annual general meeting held are also expected to stand down for election by shareholders following their respective appointments.

In line with this, the directors who will retire at this year's annual general meeting are:

- Cathie Markus
- Karabo Nondumo
- Vishnu Pillay
- André Wilkens

Their summary resumés are available in the Board of Directors section of this report. Their detailed resumés are available in the Report to Shareholders, at [www.har.co.za/16/download/HAR-RS16.pdf](http://www.har.co.za/16/download/HAR-RS16.pdf) and are also accessible on [www.harmony.co.za/about-us/board](http://www.harmony.co.za/about-us/board).

## Code of conduct

### **Relevant Global Reporting Initiative indicators: G4-S05**

Developed to respond to the challenge of ethical conduct in the business environment, our code of conduct commits Harmony, our employees and our contractors to the highest moral standards, free from conflicts of interest. Over the past few years we have done extensive work in enshrining our five values – safety, accountability, achievement, connectedness and honesty – into everyday behaviour at Harmony, through constructive employee engagement. These values underpin our code of conduct and align it with our strategy.

During FY16, our code of ethics was replaced by a code of conduct and a behavioural code in consultation with the Ethics Institute of South Africa. This was done as part of our continued efforts to adhere to good corporate governance and ethical standards. Making our codes easier to read and understand was part of this process.

The board will review these codes every second year, while their application within Harmony is continually monitored by management. Our ethics programme is also subject to independent assurance as part of the internal audit coverage plan.

Our management ethics committee monitors our ethical culture and integrity. It also assesses declarations of interest in terms of the code of conduct and provides feedback to the executive committee, which then reports to the board's social and ethics committee. As a result, ethics are discussed and examined at every level of management within the company.

The code of conduct encourages employees and other stakeholders to report any suspected irregularities. This can be done anonymously through a 24-hour crime line (which is managed by external auditing specialists), as well as other channels. All incidents reported are investigated and monitored by the white-collar crime committee, which comprises managers representing various disciplines in the company and reports to the management ethics committee.

The identity of any employee or stakeholder who reports non-compliance with the code of conduct is protected. Our anonymous ethics hotline number, which is widely advertised throughout the organisation, is +27 (0) 800 21 23 39.

### **Restrictions on share dealings**

During price-sensitive periods, our employees and directors are prohibited from dealing in Harmony shares. Written notice of these restricted periods is communicated to employees and directors by the company secretary. In terms of regulatory and governance standards, directors and employees are required to disclose any dealings in Harmony shares in accordance with the JSE Listings Requirements. The clearance procedure for directors and the company secretary to deal in Harmony shares is regulated by the company's policy on trading in shares and insider trading.

### **Information technology governance**

The board recognises that information technology is integral to doing business today, and fundamental in supporting the sustainability and growth of our company. Accordingly, the focus of our information technology division is to ensure accurate, reliable and timely information that supports effective reporting and appropriate management of our business to enable Harmony to achieve its sustainability objectives.

The audit and risk committee monitors the return on investment from significant information technology projects. Information technology management ensures that the key elements of appropriate project management principles are applied to all information technology projects. A management information technology steering committee has oversight of various information technology aspects, including governance, compliance and business continuity.

Formal processes are in place to protect and manage information, including sensitive information processed by the company, with a greater emphasis on cyber security. Various initiatives are underway to raise awareness of the types of threats and what to do if such an event occurs.

### **Political donations**

#### ***Relevant Global Reporting Initiative indicators: G4-SO6***

Harmony supports South Africa's democratic processes and contributes to its political parties. A policy relating to political donations has been adopted by the company. In the year under review, R2 million (US\$0.1 million) was donated to political parties in accordance with this policy.

## Sarbanes-Oxley

In line with New York Stock Exchange listing requirements, we comply with the Sarbanes-Oxley Act. Details of this compliance and relevant processes can be found in our Form 20-F for FY16, which is available at [www.harmony.co.za/investors/reporting/20f](http://www.harmony.co.za/investors/reporting/20f) from 26 October 2016.

## Access to information

Harmony complies with the Promotion of Access to Information Act 2000, which protects the constitutional right to information that is required to exercise or protect a right. The purpose of this legislation is to foster a culture of transparency and accountability in both public and private bodies, and to promote a society in which all South Africans are enabled to enjoy their rights. For more on this see our website: [www.harmony.co.za/sustainability/governance#policies](http://www.harmony.co.za/sustainability/governance#policies). The company received no requests for access to information in term of this legislation during FY16.

## HUMAN RIGHTS

**Relevant Global Reporting Initiative indicators: G4-HR1, G4-LA14, G4-HR3, G4-HR9, G4-HR10, G4-HR12, G4-SO3, G4-S03**

Harmony recognises that human rights should be integrated into all that we do and, through the entrenchment of our values, we endeavour to do this every day.

In line with the Companies Act, the social and ethics committee's responsibilities include monitoring of the company's standing in terms of the goals and purposes of the ten principles set out in the United Nations Global Compact. The United Nations Global Compact asks companies to embrace, support and enact, within their sphere of influence, a set of core principles in the areas of human rights, labour standards, the environment and anti-corruption. The social and ethics committee monitors our performance regarding these principles, based on the various reports submitted to them in terms of the committee's annual work plan.

We acknowledge that human rights cannot be limited to how we conduct our business, but must also be considered when we consider our business partnerships with other companies involved in our supply chain. We screen prospective suppliers on their level of legal compliance and compare their business practices with those prescribed in our code of conduct. This ensures that they behave in a way that Harmony believes is appropriate and that is aligned with our values.

During the year under review, we did not identify any human rights infringements on the part of companies involved in our supply chain, nor did we terminate any relationships on this basis. Furthermore, no human rights grievances were recorded against Harmony.

# REMUNERATION REPORT

## REMUNERATION COMMITTEE CHAIRMAN'S LETTER

Over the past year we have taken into consideration the constructive feedback from our shareholders by introducing a minimum shareholding requirement for the executive management and directors and with regard to both the short- and long-term incentives, we have increased the acceptable level of performance and introduced personal performance criteria for executive short-term incentives.

I therefore have pleasure in submitting the annual remuneration report for FY16 on behalf of the remuneration committee and the board. Recommended changes to our short- and long-term incentive schemes are highlighted throughout the relevant sections in the report.

Our report is divided into two sections:

- Part one: remuneration, governance and policy
- Part two: remuneration outcomes during the year under review (FY16).

As before, this remuneration report and policy continues to focus on the remuneration of executive directors, executive management and prescribed officers as well as on the fees paid to non-executive directors. We rely on carefully designed variable pay structures which require certain levels of performance against activities that are of primary importance to the sustainability and success of our business. We continually reassess these measures to ensure that they are aligned with our group strategy. We also give an overview of our employee share-option scheme, the Tlhakanelo Employee Share Trust, which aims to give our non-managerial employees an opportunity to benefit as Harmony shareholders.

For more on the committee and its activities during the year under review see the governance report on page 128 of this report

**Cathie Markus**

Chairman, remuneration committee  
26 October 2016

## PART ONE: REMUNERATION GOVERNANCE AND POLICY

### REMUNERATION COMMITTEE

The remuneration committee is the custodian of Harmony's remuneration policy and its implementation. No member of the committee has a personal interest in the outcome of decisions made, and five of its six members are independent non-executive directors.

For more information on the composition, primary functions, activities and actions of this committee, refer to the Corporate Governance section on page 128. The terms of reference of this committee are available at [www.harmony.co.za/sustainability/governance#policies](http://www.harmony.co.za/sustainability/governance#policies).

The main focus areas for the remuneration committee during the year were as follows:

- Reviewed the short-term incentive scheme, the applicable performance measures and the minimum threshold for bonus qualification
- The inclusion of a personal performance measurement on short-term incentives for executive management
- Revision of the long-term incentive scheme, including the use of share appreciation rights, and the performance measures applied to performance shares
- Determination of a minimum shareholding requirement for executive management and directors
- Benchmarking of executive and non-executive remuneration
- Engagement with our shareholders
- Approval and recommendation of the remuneration report

## HARMONY'S REMUNERATION POLICY – ALIGNED WITH STRATEGY

Harmony's reward strategy underpins our business strategy of producing profitable ounces, safely and increasing our margins.

In order to achieve this, we rely on experienced, skilled teams who live our values and maintain stakeholder relationships, in growing profits, and in maintaining a sustainable company.

Our remuneration policy has been designed with our business strategy in mind – to attract and retain these experienced, skilled teams, and to motivate them to deliver and achieve our key business goals. To ensure that this happens, we need to be certain that all elements of our remuneration and wider reward offerings are aligned and market competitive.

In determining remuneration, the remuneration committee takes into account shareholders', interests as well as the financial health and future of the company.

## BOARD REMUNERATION (NON-EXECUTIVE DIRECTORS)

Harmony's philosophy regarding the remuneration of non-executive directors is to ensure that they are fairly rewarded for their contribution to the company's overall performance.

Non-executive directors' fees are reviewed annually to ensure that they remain competitive. In line with the recommendations of King III, our non-executive directors are paid a retainer for board meetings and an attendance fee for every board meeting attended. Non-executive directors also receive a retainer for serving on a committee. In addition, an ad hoc fee is paid for special meetings or attendance to company business, per day.

Non-executive directors do not receive share options or other incentive awards correlated with the share price or group performance as these may impair their ability to provide impartial oversight and advice.

The proposed fees for FY17 are set out in the notice of annual general meeting on page 29 in the Report to Shareholders 2016.

## REMUNERATION MIX AT HARMONY

Harmony chooses to adopt an integrated approach to rewarding its employees.

KEY ELEMENTS OF HARMONY'S REMUNERATION STRUCTURE	
Reward elements	Remuneration strategy
<b>Guaranteed pay</b>	<p>In reviewing and approving levels of guaranteed pay, the committee ensures that the guaranteed pay portion of remuneration is aligned with similar roles in the market sector in which we operate and the contribution made by employees. To compete effectively for skills in a challenging employment market, we identify the target market against which to benchmark guaranteed pay. This target market includes those organisations or companies that employ similar skills sets to those which we require. Comparisons are made predominantly with the mining and resources sectors to ensure that Harmony remains competitive. Harmony aims for guaranteed pay levels relative to the median of the target market. Guaranteed pay is inclusive of contributions by the company to a retirement fund and a medical aid scheme.</p>

**Short-term incentive**

The short-term incentive scheme provides for bonus payments. Bonus payments are:

- based on team performance against annual targets that are reviewed annually, modified by a personal performance rating for executive management
- paid twice a year for all management employees in corporate, central services, medical services and central operations (including executive management and prescribed officers)
- paid quarterly for designated shaft management team members and regional operations management teams

During FY16, the board approved the following changes to the short-term incentive scheme:

- the minimum acceptable level of performance (i.e. qualification threshold) was increased from 90% to 95%
- the R/kg performance driver was changed to total cost (working cost plus capital excluding royalties)
- the short-term incentive for executives to be modified by a personal performance rating

The targets on which bonus payments are based are derived from the company's business plan which is developed in terms of the company's strategic objectives for the year.

For executive management, the measures and weightings are as follows:

<b>Performance drivers</b>	<b>Weighting</b>
Gold produced	40%
Total cost (working costs +capex excl. royalties)	30%
Underground grade	30%

**Payment parameters**

To achieve a minimum qualification for a bonus, Harmony must achieve at least 95% of the business plan.

On-target performance will result in a total bonus of 60% of guaranteed pay. Above-target performance is capped at 100% of guaranteed pay as illustrated below:

<b>% of business plan achieved</b>	<b>% of 6-month guaranteed pay</b>	<b>Parameter</b>
<95	0	
95	40	Threshold
100	60	Target
105	100	Maximum
>105	100	

**Safety as a modifier**

Safety performance is applied as an adjustment in the calculation of our short-term incentive bonuses. The company's lost-time injury frequency rate for the total South African business plan is used to measure Harmony's safety performance.

If the planned safety target is achieved, 10% will be added to the overall percentage bonus paid. If the company does not achieve its safety target, up to 10% will be deducted from the overall percentage bonus paid as per the gradation scale illustrated below:

<b>Achievement against business plan</b>	<b>% added or deducted from overall bonus percentage*</b>
100	10%
95	5%
90	0%
85	-5%
80	-10%



	<p>*Linear interpolation between these points</p> <p><b>Personal performance modifier:</b>  The personal performance percentage will be calculated according to an executive manager's personal performance measured against objectives set out in that executive's performance management contract as follows:  Guaranteed pay x group performance against plan (0% – 100%) x personal performance percentage (0% – 150%)</p>
<p><b>Long-term (share-based) incentive</b></p>	<p>The Harmony share plan (the plan) consists of share appreciation rights (SARs), performance shares and restricted shares.</p> <p>Employees eligible for participation in the plan include executive directors, executive management and management. Non-executive directors may not participate in the plan.</p> <p>There is no repricing or surrender or re-grant of any offers. Share awards are not granted in a closed period and no backdating of awards is allowed.</p> <p>Rewards are settled in shares, although participants may receive, via our share scheme administrators, cash from the sale of these shares, less tax payable.</p> <p>The main elements of the share plan and performance conditions are summarised below.</p> <p><b>Share appreciation rights (SARs)</b>  Eligible employees received annual allocations based on a percentage of their cost to company, which vest in equal thirds on the third, fourth and fifth anniversaries of such allocations and lapse in the sixth year as illustrated below. The value or reward that accrues is based on the positive appreciation of the share price over time (compared to the issue price) and continued employment.</p> <p>The company acknowledges shareholders' sentiment with regard to the issuing of share appreciation rights. Such views will be considered should the company issue new share appreciation rights going forward. Share appreciation rights were last allocated in November 2014 (FY15).</p> <p><b>Performance shares</b>  Eligible employees receive annual conditional awards of a maximum number of performance shares based on a percentage of cost to company and remuneration category. The conditional award vests after three years, if and to the extent that performance conditions have been satisfied. The conditional awards that do not vest at the end of the three-year period will be forfeited.</p> <p>The company reviewed and changed the performance criteria for performance shares.</p> <p>Awards made since November 2015 will be measured on the total shareholder return of the company over a three-year period and will be capped at the maximum vesting percentage of 100%. The total shareholder return vesting criteria will comprise of two components:</p> <ul style="list-style-type: none"> <li>• 50% is based on absolute performance which takes into account the value of the company's share price growth and the value of dividends paid over the measurement period</li> <li>• 50% is based on the relative performance of the company compared to that of the gold index over the measurement period</li> </ul>

**Absolute performance:**

Performance	Achievement	Vesting*
Full (stretch)	100%	100%
Target	80%	80%
Threshold	45%	0%

\*Linear interpolation will apply between levels

**Relative performance:**

Performance	Achievement	Vesting*
Full (stretch)	40%	150%
Target	0%	40%
Threshold	-5%	0%

\*Linear interpolation will apply between levels

Details of the awards made during FY16 can be found in Part Two of this Remuneration Report.

**Restricted shares**

The share plan allows for restricted shares and matching performance shares to be granted to eligible employees at the discretion of the board based on past performance. The board determines the quantum and balance between restricted shares and matching performance shares.

Restricted shares vest three-years from the grant date. If the grant is not exercised, partially or fully at the time, these shares remain restricted for a further three years and are supplemented by a matching grant of restricted shares. The restricted shares and the matching restricted shares are then settled after the end of a further three-year period.

We acknowledge the sentiments of shareholders with regard to restricted shares and our last grant of new restricted shares was made in 2012.

**Plan limit**

The approved aggregate number of shares that may be acquired by participants in the long-term incentive plan, together with any other share plan or scheme are 60 011 669 shares as approved by the members of the company at an annual general meeting held on 1 December 2010. To date, Harmony has issued 7 792 861 of these approved shares.

The aggregate number of shares that may be acquired by any one participant in terms of the long-term incentive plan together with any other share plan or scheme approved by the members shall not exceed 2 100 000 shares. To date, none of the participants has acquired an aggregate of more than 2 100 000 shares.

**Recommended changes to the Harmony share plan (the plan)**

A proposal will be made at the forthcoming annual general meeting to amend the plan to:

- introduce a minimum shareholding requirement for executive management;
- determine the vesting of performance shares on actual achievement against the applicable performance criteria when a participant is a good leaver.

**For more information refer to the notice of the annual general meeting in the Report to Shareholders 2016 at [www.har.co.za](http://www.har.co.za).**

Tlhakanelo Employee Share Trust

Administered in terms of the Tlhakanelo trust, this share-based incentive scheme ensures that current and future qualifying employees participate in Harmony's growth. Qualifying employees are those who are permanently employed by the company and who do not participate in any of the company's other share incentive schemes.

Under the Tlhakanelo employee share scheme, each award is split into the ratio of two

	<p>share appreciation rights for each ordinary share and these vest annually in equal tranches on each anniversary of the allocation date. As per the provisions of the trust deed, the last tranche of shares allocated in terms of the scheme will vest during March 2017.</p> <p>Share appreciation rights are subject to a guaranteed minimum payout of R18 per share appreciation right and a maximum payout of R32 per share appreciation right on each vesting date (over the five-year period).</p> <p>Prior to vesting, participants may elect to receive their shares or have these sold on their behalf.</p> <p><b>Details of the awards made during FY16 can be found in Part Two of this Remuneration Report.</b></p>
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### CONTRACTS, SEVERANCE AND TERMINATION

Executive directors and executive managers have employment contracts with Harmony which include notice periods of up to 90 days. There are no balloon payments on termination, automatic entitlement to bonuses or automatic entitlement to share-based payments other than in terms of the company's approved share incentive plans.

### NON-BINDING ADVISORY VOTE

Shareholders are requested to cast a non-binding advisory vote required by King III on Part One of this remuneration report as it appears above. For more information refer to the notice of the annual general meeting in the Report to Shareholders 2016 at [www.har.co.za/16/download/HAR-RS16.pdf](http://www.har.co.za/16/download/HAR-RS16.pdf)

### STAKEHOLDER FEEDBACK

We maintain open communication channels with our stakeholders, listen to feedback and take action where this is deemed to be in the best interests of the company. Based on comments received from shareholders following our FY15 remuneration report, we have enhanced our reporting and changed the parameters of our short-term and long-term incentive schemes.

## PART TWO: REMUNERATION PAID DURING THE YEAR BASED ON THE POLICY APPLICABLE IN 2016

### INCREASES TO GUARANTEED PACKAGE DURING THE YEAR UNDER REVIEW

An assessment of executive remuneration, and short- and long-term incentives was undertaken during FY16.

Taking into consideration the prevailing market conditions, affordability and shareholders' expectations, an average increase of 5% to guaranteed remuneration packages of executives and management was made during FY16.

## SHORT-TERM INCENTIVE PAYMENTS DURING THE YEAR UNDER REVIEW

During the year under review, achievement levels against the targets for the executive short-term incentive scheme were as follows:

<b>First period FY16 (July to December 2015)</b>			
Company performance measures	Weighting	% of plan achieved	Weighted %
Total kilograms	40	98	18.4
Total cost (R/kg)	30	97	13.2
Grade	30	103	19.5
Weighted average	–		51.1
Lost-time injury frequency rate adjustment			10
Percentage of six-months' guaranteed pay			61.1

<b>Second period FY16 (January to June 2016)</b>			
Company performance measures	Weighting	% of plan achieved	Weighted %
Total kilograms	40	87%	0
Total cost (R/kg)	30	78%	0
Grade	30	95%	12
Weighted average	–		12
Lost-time injury frequency rate adjustment			4
Percentage of six-months' guaranteed pay			16

## LONG-TERM INCENTIVES AWARDED DURING THE YEAR UNDER REVIEW

During FY16, the company took its shareholders' sentiment with regard to the issuing of share appreciation rights into consideration. As a result, no share appreciation rights were issued to employees in FY16. Instead, such rights were replaced with a commensurate number of performance shares.

### Harmony share plan rules applicable to the FY16 awards:

**Share appreciation rights:** The value or reward that accrues on share appreciation rights is based on the positive appreciation of the share price over time compared to the issue price.

**Performance shares:** The performance measure applicable to the performance awards is based on Harmony's total shareholder return over a three-year period. The vesting criteria will comprise of two components, namely, absolute and relative performance, as set out on in this report, with vesting capped at 100%.

**Matching shares:** No further grants of restricted shares have been made since 2012. The 2012 restricted shares not exercised in 2015 were supplemented with matching restricted shares.

The number of grants awarded for each executive director, prescribed officer and executive manager is as set out in the table on page 143 of this report.

## Vesting of long-term incentives during the year under review

During the year, the following awards in terms of the long-term incentive plan vested in November 2015:

- **Share appreciation rights allocated in November 2012**

The performance condition determined that the headline earnings per share growth from the allocation date should exceed the consumer price index. Headline earnings did not exceed the consumer price index. The performance condition was therefore not met. In terms of the long-term incentive plan, if the performance criteria have not been met, no rights will vest but will be postponed to the following anniversary until the performance criteria are met or the maximum period (sixth anniversary) is reached.

- **Performance shares awarded in November 2012**

The vesting percentage of performance shares was based on the achievement of two conditions, namely gold production against plan and relative share price performance against South African gold mining companies.

This resulted in a total vesting of 32.5% of performance shares granted in November 2012 calculated as follows:

- Gold production had a maximum vesting of 50% and a minimum vesting of 0%. The company achieved 92%, 87% and 88% of plan over the three consecutive years which resulted in an average vesting of 20%.
- The company underperformed against its peers on the basis of its relative share price performance which resulted in vesting of 12.5%.

- **Restricted shares granted in November 2012**

In terms of the plan, restricted shares not exercised will be supplemented by a matching award of restricted shares, also restricted for three years.

Restricted shares granted in November 2012 were not exercised and remained restricted for a further three years. Based on the discretion of the board, the restricted shares were supplemented by a matching award of restricted shares at a ratio of three-for-one for executives.

## TOTAL REMUNERATION OUTCOMES

### Payments made through the Tlhakanelo Employee Share Trust

Incentives	FY16:	Total since incorporation of the trust:
Value of ordinary shares sold and proceeds paid to participants (before tax)	R30 million	R132 million
Value of bonus payments paid to participants by Harmony based on R18 per share appreciation right (before tax). No sale of shares	R18 million	R105 million
Total payments received by participants (value of shares plus share appreciation rights bonus) (before tax)	R49 million	R237 million

## NON-EXECUTIVE DIRECTORS' FEES

During August 2016, the remuneration committee considered an industry benchmark on non-executive directors' fees. On the recommendation of the remuneration committee, the board proposed an increase in fees for all non-executive directors, to be considered for approval by the shareholders at the forthcoming annual general meeting. For more information on the notice of the annual general meeting refer to the Report to Shareholders 2016 at [www.har.co.za/16/download/HAR-RS16.pdf](http://www.har.co.za/16/download/HAR-RS16.pdf).

## DIRECTORS' EMOLUMENTS

Directors' remuneration (R000)						
Name	Directors' fees FY16	Salaries and benefits FY16	Retirement savings and contributions during the year FY16	<sup>1</sup> Bonuses paid FY16	Total FY16	Total FY15
<b>Non-executive</b>						
Patrice Motsepe	1 105	–	–	–	<b>1 105</b>	1 077
Joachim Chissano	463	–	–	–	<b>463</b>	415
Fikile De Buck	970	–	–	–	<b>970</b>	836
Ken Dicks	606	–	–	–	<b>606</b>	482
Dr Simo Lushaba	718	–	–	–	<b>718</b>	615
Cathie Markus	694	–	–	–	<b>694</b>	705
Modise Motloba	971	–	–	–	<b>971</b>	841
Mavuso Msimang	545	–	–	–	<b>545</b>	443
Karabo Nondumo	544	–	–	–	<b>544</b>	561
Vishnu Pillay	593	–	–	–	<b>593</b>	472
John Wetton	956	–	–	–	<b>956</b>	789
Andre Wilkens	784	–	–	–	<b>784</b>	637
<b>Executive</b>						
Frank Abbott	–	5 247	130	1 687	<b>7 064</b>	5 964
Graham Briggs <sup>2</sup>	–	4 260	–	2 655	<b>6 915</b>	10 012
Mashego Mashego	–	3 664	404	1 217	<b>5 285</b>	4 797
Peter Steenkamp <sup>3</sup>	–	3 526	496	–	<b>4 022</b>	–
<b>Prescribed officers</b>						
Beyers Nel <sup>4</sup>	–	1 282	194	207	<b>1 683</b>	–
Alwyn Pretorius <sup>5</sup>	–	360	42	–	<b>402</b>	5 823
Phillip Tobias <sup>6</sup>	–	1 346	156	88	<b>1 590</b>	–
Johannes van Heerden <sup>7</sup>	–	7 187	315	1 124	<b>8 626</b>	6 119
<b>Executive management</b>	–	15 049	1 369	4 967	<b>21 385</b>	20 943
<b>Total</b>	<b>8 949</b>	<b>41 921</b>	<b>3 106</b>	<b>11 945</b>	<b>65 921</b>	61 531

<sup>1</sup> Reflects amounts paid and not earned during the year

<sup>2</sup> Stepped down as chief executive officer on 31 December 2015

<sup>3</sup> Appointed as chief executive officer on 1 January 2016

<sup>4</sup> Appointed as prescribed officer on 1 March 2016

<sup>5</sup> Stepped down as prescribed officer on 31 July 2015

<sup>6</sup> Appointed as prescribed officer on 1 March 2016

<sup>7</sup> Salary is paid in AUS\$ and is influenced by the movement in the exchange rate

**EXECUTIVE DIRECTORS AND MANAGEMENT SHARE INCENTIVES**

**As at 30 June 2016**

Movements on share incentives	Executive directors												Prescribed officers						Other					
	Peter Steenkamp		Frank Abbott		Mashego Mashego		Graham Briggs <sup>1</sup>		Johannes van Heerden		Beyers Nel <sup>2</sup>		Phillip Tobias <sup>3</sup>		Executive management <sup>4</sup>		Other management		Total					
	Number of awards	Average price (SA rand)	Number of awards	Average price (SA rand)	Number of awards	Average price (SA rand)	Number of awards	Average price (SA rand)	Number of awards	Average price (SA rand)	Number of awards	Average price (SA rand)	Number of awards	Average price (SA rand)	Number of awards	Average price (SA rand)	Number of awards	Average price (SA rand)	Number of awards	Average price (SA rand)				
<b>Performance shares</b>																								
Opening balance at 1 July 2015	-	n/a	437 195	n/a	314 790	n/a	1 187 604	n/a	314 790	n/a	142 395	n/a	91 662	n/a	1 597 721	n/a	10 236 351	n/a	14 322 508	n/a	n/a			
Awards granted	512 000	n/a	736 809	n/a	455 758	n/a	550 000	n/a	455 758	n/a	236 220	n/a	236 220	n/a	1 875 118	n/a	20 594 748	n/a	25 652 631	n/a	n/a			
Awards exercised	-	n/a	18 547	n/a	13 153	n/a	234 006	n/a	13 153	n/a	5 621	n/a	-	n/a	65 013	n/a	453 808	n/a	803 301	n/a	n/a			
- Average sales price	-	n/a	-	8.78	-	8.78	-	37.29	-	8.78	-	8.78	-	n/a	-	8.78	-	-	-	13.02	-	19.55		
- Gain realised on awards exercised and settled	-		162 843		115 483		8 725 326		115 483		49 352		-		570 814		-		5 962 993		15 702 295			
Awards forfeited and lapsed	-	n/a	38 520	n/a	27 318	n/a	1 503 598	n/a	27 318	n/a	11 676	n/a	-	n/a	451 105	n/a	2 134 265	n/a	4 193 800	n/a	n/a	n/a		
<b>Closing balance at 30 June 2016</b>	<b>512 000</b>	<b>n/a</b>	<b>1 116 937</b>	<b>n/a</b>	<b>730 077</b>	<b>n/a</b>	<b>-</b>	<b>n/a</b>	<b>730 077</b>	<b>n/a</b>	<b>361 318</b>	<b>n/a</b>	<b>327 882</b>	<b>n/a</b>	<b>2 956 721</b>	<b>n/a</b>	<b>28 243 026</b>	<b>n/a</b>	<b>34 978 038</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>		
<b>Restricted shares</b>																								
Opening balance at 1 July 2015	-	n/a	37 136	n/a	27 694	n/a	190 456	n/a	72 218	n/a	12 021	n/a	-	n/a	166 626	n/a	166 951	n/a	673 102	n/a	n/a	n/a		
Awards granted	-	n/a	63 408	n/a	35 082	n/a	63 486	n/a	35 082	n/a	24 063	n/a	-	n/a	138 318	n/a	149 481	n/a	508 920	n/a	n/a	n/a		
Awards exercised	-	n/a	-	n/a	-	n/a	253 942	n/a	-	n/a	-	n/a	-	n/a	-	n/a	18 540	n/a	272 482	n/a	n/a	n/a		
- Average sales price	-	n/a	-	n/a	-	n/a	-	44.42	-	n/a	-	n/a	-	n/a	-	n/a	-	17.46	-	-	-	42.59		
- Gain realised on awards exercised and settled	-		-		-		11 280 104		-		-		-		-		-		323 777		11 603 881			
Awards forfeited and lapsed	-	n/a	-	n/a	-	n/a	-	n/a	-	n/a	-	n/a	-	n/a	27 694	n/a	25 872	n/a	53 566	n/a	n/a	n/a		
Closing balance at 30 June 2016	-	n/a	100 544	n/a	62 776	n/a	-	n/a	107 300	n/a	36 094	n/a	-	n/a	277 250	n/a	272 020	n/a	855 974	n/a	n/a	n/a		

Movements on share incentives	Executive directors												Prescribed officers						Other					
	Peter Steenkamp		Frank Abbott		Mashego Mashego		Graham Briggs <sup>1</sup>		Johannes van Heerden		Beyers Nel <sup>2</sup>		Phillip Tobias <sup>3</sup>		Executive management <sup>4</sup>		Other management		Total					
	Number of awards	Average price (SA rand)	Number of awards	Average price (SA rand)	Number of awards	Average price (SA rand)	Number of awards	Average price (SA rand)	Number of awards	Average price (SA rand)	Number of awards	Average price (SA rand)	Number of awards	Average price (SA rand)	Number of awards	Average price (SA rand)	Number of awards	Average price (SA rand)	Number of awards	Average price (SA rand)				
Share appreciation rights																								
Opening balance at 1 July 2015	–	n/a	139 362	33.97	112 907	39.27	264 390	38.82	114 128	39.68	85 391	38.85	46 850	18.41	571 400	38.76	15 085 539	39.12	16 419 967	38.86				
Rights granted and accepted	–	n/a	–	n/a	–	n/a	–	n/a	–	n/a	–	n/a	–	n/a	–	n/a	–	n/a	–	n/a	–	n/a		
Rights accepted	–	n/a	–	n/a	–	n/a	–	n/a	–	n/a	–	n/a	–	n/a	–	n/a	669 824	18.42	669 824	18.42	–	–		
Rights exercised	–	n/a	–	n/a	–	n/a	199 431	n/a	–	n/a	–	n/a	–	n/a	–	n/a	233 219	n/a	432 650	n/a	–	–		
– Average sales price	–	n/a	–	n/a	–	n/a	–	44.42	–	n/a	–	n/a	–	n/a	–	n/a	–	46.40	–	45.49	–	–		
– Gain realised on rights exercised and settled	–	–	–	–	–	–	3 830 369	–	–	–	–	–	–	–	–	–	5 212 932	–	9 043 301	–	–	–		
Rights forfeited and lapsed	–	n/a	–	n/a	5 327	77.28	64 959	80.58	6 548	77.28	4 482	77.28	–	n/a	150 922	43.85	2 268 121	60.49	2 500 359	59.21	–	–		
Closing balance at 30 June 2016	–	n/a	139 362	33.97	107 580	37.39	–	n/a	107 580	37.39	80 909	36.72	46 850	18.41	420 478	36.94	13 254 023	34.68	14 156 782	34.74	–	–		
Gain realised on awards exercised (SA rand)	–	–	162 843	–	115 483	–	23 835 799	–	115 483	–	49 352	–	–	–	–	–	11 499 702	–	36 349 476	–	–	–		



**EXECUTIVE DIRECTORS AND MANAGEMENT SHARE INCENTIVES (continued)**

**As at 30 June 2016**

	Executive directors												Prescribed officers						Other					
	Peter Steenkamp		Frank Abbott		Mashego Mashego		Graham Briggs <sup>1</sup>		Johannes van Heerden		Beyers Nel <sup>2</sup>		Phillip Tobias <sup>3</sup>		Executive management <sup>4</sup>		Other management		Total					
	Number of awards	Average price (SA rand)	Number of awards	Average price (SA rand)	Number of awards	Average price (SA rand)	Number of awards	Average price (SA rand)	Number of awards	Average price (SA rand)	Number of awards	Average price (SA rand)	Number of awards	Average price (SA rand)	Number of awards	Average price (SA rand)	Number of awards	Average price (SA rand)	Number of awards	Average price (SA rand)				
<b>Outstanding awards (listed by allocation date)</b>																								
<b>Performance shares</b>	512 000		1 116 937		730 077		–		730 077		361 318		327 882		2 956 721		28 243 026		34 978 038					
15 November 2013	–	n/a	172 866	n/a	124 604	n/a	–	n/a	124 604	n/a	51 788	n/a	–	n/a	491 299	n/a	3 652 588	n/a	4 617 529	n/a	n/a			
17 November 2014	–	n/a	207 462	n/a	149 715	n/a	–	n/a	149 715	n/a	73 330	n/a	91 662	n/a	590 304	n/a	5 129 200	n/a	6 391 388	n/a	n/a			
16 November 2015	–	n/a	736 809	n/a	455 758	n/a	–	n/a	455 758	n/a	236 220	n/a	236 220	n/a	1 875 118	n/a	19 461 238	n/a	23 457 121	n/a	n/a			
17 February 2016	512 000	n/a	–	n/a	–	n/a	–	n/a	–	n/a	–	n/a	–	n/a	–	n/a	–	n/a	512 000	n/a	n/a			
<b>Restricted shares</b>	–		100 544		62 776		–		107 300		36 084		–		277 250		272 020		855 974					
15 November 2010	–	n/a	–	n/a	–	n/a	–	n/a	22 262	n/a	–	n/a	–	n/a	26 413	n/a	30 606	n/a	79 281	n/a	n/a			
15 November 2011	–	n/a	8 000	n/a	8 000	n/a	–	n/a	8 000	n/a	4 000	n/a	–	n/a	20 000	n/a	16 000	n/a	64 000	n/a	n/a			
16 November 2012	–	n/a	21 136	n/a	11 694	n/a	–	n/a	11 694	n/a	8 021	n/a	–	n/a	46 106	n/a	44 702	n/a	143 353	n/a	n/a			
15 November 2013 (2010 award - matching shares)	–	n/a	–	n/a	–	n/a	–	n/a	22 262	n/a	–	n/a	–	n/a	26 413	n/a	30 606	n/a	79 281	n/a	n/a			
17 November 2014 (2011 award - matching shares)	–	n/a	8 000	n/a	8 000	n/a	–	n/a	–	n/a	–	n/a	–	n/a	20 000	n/a	16 000	n/a	60 000	n/a	n/a			
16 November 2015 (2012 award - matching shares)	–	n/a	63 408	n/a	35 082	n/a	–	n/a	35 082	n/a	24 063	n/a	–	n/a	138 318	n/a	134 106	n/a	430 059	n/a	n/a			
<b>Share appreciation rights</b>	–		139 362		107 580		–		107 580		80 909		46 850		420 478		13 254 023		14 156 782					
15 November 2010	–	n/a	–	84.81	6 400	84.81	–	n/a	6 400	84.81	4 329	84.81	–	n/a	22 405	84.81	536 843	84.81	576 377	84.81	84.81			
15 November 2011	–	n/a	6 585	104.79	5 361	104.79	–	n/a	5 361	104.79	4 620	104.79	–	n/a	20 275	104.79	549 238	104.79	591 440	104.79	104.79			
16 November 2012	–	n/a	16 204	68.84	11 694	68.84	–	n/a	11 694	68.84	8 021	68.84	–	n/a	46 106	68.84	1 275 807	68.84	1 369 526	68.84	68.84			
15 November 2013	–	n/a	52 951	33.18	38 212	33.18	–	n/a	38 212	33.18	26 459	33.18	–	n/a	150 665	33.18	4 619 989	33.18	4 926 488	33.18	33.18			
17 November 2014	–	n/a	63 622	18.41	45 913	18.41	–	n/a	45 913	18.41	37 480	18.41	46 850	18.41	181 027	18.41	6 272 146	18.41	6 692 951	18.41	18.41			

Outstanding awards (listed by allocation date)	Executive directors						Prescribed officers						Other							
	Peter Steenkamp		Frank Abbott		Mashego Mashego		Graham Briggs <sup>1</sup>		Johannes van Heerden		Beyers Nel <sup>2</sup>		Phillip Tobias <sup>3</sup>		Executive management <sup>4</sup>		Other management		Total	
	Number of awards	Average price (SA rand)	Number of awards	Average price (SA rand)	Number of awards	Average price (SA rand)	Number of awards	Average price (SA rand)	Number of awards	Average price (SA rand)	Number of awards	Average price (SA rand)	Number of awards	Average price (SA rand)	Number of awards	Average price (SA rand)	Number of awards	Average price (SA rand)	Number of awards	Average price (SA rand)
Closing balance as at 30 June 2016	512 000		1 356 843		900 433		-		944 957		478 311		374 732		3 654 449		41 769 069		49 990 794	

<sup>1</sup> Graham Briggs retired as chief executive officer and director with effect from 31 December 2015. The gain realised on awards and rights settled, in terms of the "no fault" provisions of the share plan amounted to R23 422 872.

<sup>2</sup> Beyers Nel appointed as chief operating officer of the South African operations with effect from 1 March 2016. All awards were granted prior to this appointment.

<sup>3</sup> Phillip Tobias appointed as chief operating officer of safety, mining projects, new development and corporate strategy with effect from 1 March 2016. All awards were granted prior to this appointment.

<sup>4</sup> Alywyn Pretorius, previously the chief operating officer of the South African Operations (prescribed officer) resigned from the group with effect from 30 November 2015. All awards and the movements thereon are included as part of executive management.

# AUDIT AND RISK COMMITTEE:

## CHAIRMAN'S REPORT

In accordance with the Companies Act 71 of 2008 (the Act), I have pleasure in submitting this report for the financial year ended 30 June 2016. This committee complies with the requirements of the Act pertaining to the composition and functions of an audit committee. In addition, as explained in the committee's terms of reference, Harmony's audit committee is also tasked with overseeing risk management in the company and is therefore known as the audit and risk committee (the committee).

### COMPOSITION OF THE COMMITTEE

In terms of the Act, the following members, who were serving on the committee as at 30 June 2016, will be recommended for re-appointment as audit and risk committee members for FY17 to shareholders at Harmony's annual general meeting:

Name	Status	Date appointed
John Wetton (chairman)	Independent non-executive director	1 July 2011, appointed chairman 30 November 2011
Fikile De Buck	Lead independent non-executive director	30 March 2006
Dr Simo Lushaba	Independent non-executive director	24 January 2003
Modise Motloba	Independent non-executive director	30 July 2004
Karabo Nondumo	Independent non-executive director	3 May 2013

The individuals proposed satisfy the requirements set out in section 94 of the Act for members of an audit committee, and their appointment will ensure that the committee continues to have adequate and relevant knowledge as well as the experience required for the committee to perform its functions proficiently. For details of the qualifications, expertise and experience of the members of the audit and risk committee, refer to Board of Directors. Their detailed curriculum vitae are available at [www.harmony.co.za/about-us/board](http://www.harmony.co.za/about-us/board).

### PURPOSE, ROLE AND ACTIVITIES

The purpose and role of the committee is in accordance with the requirements of the Act, the JSE Listings Requirements, King III and additional requirements imposed on the committee by the board. Further details can be found in the committee's terms of reference available on Harmony's website at [www.harmony.co.za/sustainability/governance#policies](http://www.harmony.co.za/sustainability/governance#policies).

The committee undertakes its duties with accountability to both the board and stakeholders of Harmony. In FY16, the committee:

- Reviewed the company's financial results
- Evaluated and considered Harmony's risks, as well as measures taken to mitigate those risks. In addition, the committee also considered and refined the company's risk appetite and tolerance levels
- Monitored the internal control environment in Harmony and found it to be effective
- Discussed the appropriateness of accounting principles, critical accounting policies, management judgements, estimates and impairments, all of which were found to be appropriate

- Considered the appointment of the external auditor, PricewaterhouseCoopers Inc (PwC), as the registered independent auditor for the ensuing year. A new PwC audit partner (Hendrik Odendaal) was appointed from FY16 following the compulsory rotation of Faan Lombard, who had served as Harmony's audit partner for the previous five years
- Satisfied itself, and confirmed through enquiry, that the external audit firm, PwC, was independent from the company
- Evaluated the independence and effectiveness of the internal audit function
- Evaluated and coordinated the internal audit, external audit and sustainability assurance processes
- Received and considered reports from the external and internal auditors
- Reviewed and approved internal and external audit plans, terms of engagement and fees, as well as the nature and extent of non-audit services rendered by the external auditors
- Considered the appropriateness and expertise of the financial director, Frank Abbott, as well as that of the finance function – both were found to be adequate and appropriate
- Oversaw and governed the governance of information technology on behalf of the board and considered whether information technology risks were adequately addressed and whether appropriate controls were in place to address those risks
- Considered and confirmed the company as a going concern and
- Oversaw the process of assurance of the integrated report
- Considered the distribution of a dividend taking into consideration the requirements of section 4 of the Companies Act, No 71 of 2008

The audit and risk committee is confident that it complied with the legal, regulatory and other responsibilities assigned to it by the board, under its terms of reference and in accordance with the Act, the JSE Listings Requirements and King III.

The internal audit function reports directly to the audit and risk committee, except on administrative matters about which it reports to the executive: risk management and services improvement. The internal and external auditors attend the committee's quarterly meetings and have unrestricted access to the chairman of the committee. The audit and risk committee met privately with the internal and external auditors during FY16.

Post year-end, upon recommendation from the committee, the board approved:

- The Annual Financial Statements and Summarised Consolidated Financial Statements for the year ended 30 June 2016
- The Integrated Annual Report for the year ended 30 June 2016, in accordance with King III and the JSE Listings Requirements
- The annual report filed on Form 20-F for the year ended 30 June 2016 for subsequent submission to the United States Securities and Exchange Commission
- The notice of the annual general meeting to be held on 25 November 2016

For more on the committee and its activities during FY16 see [Corporate Governance](#).

**John Wetton**

Chairman: audit and risk committee

26 October 2016

# SHAREHOLDER INFORMATION

## CONTACTS

<b>Executive: Corporate and Investor Relations</b> Marian van der Walt Telephone: +27 11 411 2037 Fax: +27 86 614 0999 Mobile: +27 82 888 1242 Email: marian@harmony.co.za	<b>Investor relations queries</b> Email: harmonyIR@harmony.co.za  <b>General enquiries:</b> E-mail: corporate@harmony.co.za Harmony website: www.harmony.co.za
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## STOCK EXCHANGE LISTINGS AND TICKER CODES

Harmony's primary listing is on the JSE Limited. It is also quoted in the form of American depositary receipts on the New York Stock Exchange and as international depositary receipts on the Berlin exchange.

Harmony's ticker codes on these exchanges are as follows:

JSE Limited	HAR
New York Stock Exchange Euronext	HMY
Berlin Stock Exchange	HAM1

## SHARE INFORMATION

Sector	Resources
Sub-sector	Gold
Issued share capital as at 30 June 2016	437 299 479 shares in issue
<b>Market capitalisation</b>	
at 30 June 2016	R22.9 billion or US\$1.6 billion
at 30 June 2015	R6.8 billion or US\$560 million
<b>Share price statistics – FY16</b>	
Johannesburg Stock Exchange: 12-month high	R62.89
12-month low	R7.92
Closing price as at 30 June 2016	R52.47
New York Stock Exchange: 12-month high	US\$4.17
12-month low	US\$0.53
Closing price as at 30 June 2016	US\$3.61
Free float	100%
ADR ratio	1:1

## SHAREHOLDER SPREAD AS AT 30 JUNE 2016

Shareholder spread	Number of shareholders	% of shareholders	Number of shares	% of issued share capital
Public	<b>8 608</b>	<b>99.87</b>	<b>182 283 005</b>	<b>41.68</b>
Non-public	<b>11</b>	<b>0.13</b>	<b>255 016 474</b>	<b>58.32</b>
Share option scheme	5	0.06	611 650	0.14
Holding 10% +	2	0.02	253 746 138	58.03
Directors*	4	0.05	658 686	0.15
<b>Totals</b>	<b>8 619</b>	<b>100.00</b>	<b>437 299 479</b>	<b>100.00</b>

\* Held by Frank Abbott, Graham Briggs<sup>#</sup>, Ken Dicks, Mashego Mashego and André Wilkens

<sup>#</sup> Director and chief executive officer until 31 December 2015

Analysis of ordinary shares	Number of shareholders	% of shareholders	Number of shares	% of issued share capital
<b>Range</b>				
1 – 10 000	8 135	94.38	4 407 414	1.01
10 001 – 100 000	328	3.81	11 884 500	2.72
100 001 – 1 000 000	122	1.42	40 134 151	9.18
1 000 001 – And more	34	0.39	380 873 414	87.10
<b>Totals</b>	<b>8 619</b>	<b>100.00</b>	<b>437 299 479</b>	<b>100.00</b>

## Ownership summary as at 30 June 2016 – top 10 shareholders

Rank	Institution	% Total shares outstanding 30 June 2016
1	African Rainbow Minerals Ltd	14.55
2	Allan Gray Unit Trust Management Ltd.	12.04
3	Van Eck Global	10.77
4	Retail investors (North America)	7.99
5	Public Investment Corp. of South Africa	7.79
6	Dimensional Fund Advisors, Inc.	3.29
7	Renaissance Technologies LLC	2.83
8	Retail investors (Europe)	2.68
9	The Vanguard Group, Inc.	2.62
10	Universal-Investment GmbH	2.25

## DIVIDEND POLICY

In considering the payment of dividends, the board will, with the assistance of the audit and risk and investment committees, take into account the following:

- The current financial status of the company and the payment of a proposed dividend subject to the successful application of the solvency and liquidity test as set out in section 4 of the Companies Act of 2008
- The future funding and capital requirements of the company
- The intention to pay a dividend

### Dividend declared

A dividend of 50 South African cents per share (4 US cents per share) was declared for FY16. Harmony's stated dividend policy is to only pay dividends from profits and not from debt.

## SHAREHOLDERS' DIARY

Financial year-end	30 June	<b>Results presentations FY17</b>	
Annual financial statements issued	26 October 2016	Interim results for the half-year	3 February 2017
Form 20-F issued	26 October 2016	Full-year results	17 August 2017
Annual general meeting	25 November 2016		

# DIRECTORATE AND ADMINISTRATION

## HARMONY GOLD MINING COMPANY LIMITED

Harmony Gold Mining Company Limited was incorporated and registered as a public company in South Africa on 25 August 1950

Registration number: 1950/038232/06

### Corporate office

Randfontein Office Park  
PO Box 2, Randfontein, 1760  
South Africa  
Corner Main Reef Road and Ward Avenue  
Randfontein, 1759  
South Africa

Telephone: +27 11 411 2000  
Website: [www.harmony.co.za](http://www.harmony.co.za)

### DIRECTORS

PT Motsepe\* (chairman)  
FFT De Buck\*<sup>^</sup> (lead independent director)  
JM Motloba\*<sup>^</sup> (deputy chairman)  
PW Steenkamp (chief executive officer)  
F Abbott (financial director)  
JA Chissano\*<sup>1^</sup>  
KV Dicks\*<sup>^</sup>  
Dr DSS Lushaba\*<sup>^</sup>  
CE Markus\*<sup>^</sup>  
HE Mashego\*\*  
M Msimang\*<sup>^</sup>  
KT Nondumo\*<sup>^</sup>  
VP Pillay\*<sup>^</sup>  
JL Wetton\*<sup>^</sup>  
AJ Wilkens\*

\* *Non-executive*

\*\* *Executive*

<sup>^</sup> *Independent*

<sup>1</sup> *Mozambican*

### INVESTOR RELATIONS

E-mail: [harmonyIR@harmony.co.za](mailto:harmonyIR@harmony.co.za)

### Marian van der Walt

Executive: Corporate and Investor Relations  
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### COMPANY SECRETARY

#### Riana Bisschoff

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Fax: +27 11 696 9734  
Mobile: +27 83 629 4706  
E-mail: [riana.bisschoff@harmony.co.za](mailto:riana.bisschoff@harmony.co.za)



## TRANSFER SECRETARIES

Link Market Services South Africa  
(Proprietary) Limited  
(Registration number 2000/007239/07)  
13th Floor, Rennie House,  
Ameshoff Street, Braamfontein  
PO Box 4844  
Johannesburg, 2000  
South Africa  
Telephone: +27 86 154 6572  
E-mail: [info@linkmarketservices.co.za](mailto:info@linkmarketservices.co.za)  
Fax: +27 86 674 2450

## ADR\* DEPOSITARY

Deutsche Bank Trust Company Americas c/o American Stock Transfer and Trust Company  
Peck Slip Station  
PO Box 2050  
New York, NY 10272-2050  
E-mail queries: [db@amstock.com](mailto:db@amstock.com)  
Toll free: +1-800-937-5449  
Int: +1-718-921-8137  
Fax: +1-718-765-8782

*\*ADR: American Depositary Receipts*

## SPONSOR

JP Morgan Equities South Africa (Pty) Ltd  
1 Fricker Road, corner Hurlingham Road  
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## TRADING SYMBOLS

JSE Limited: HAR  
New York Stock Exchange, Inc.: HMY  
Berlin Stock Exchange: HAM1  
ISIN: ZAE 000015228