

# SAFETY AND HEALTH



HUMAN AND  
INTELLECTUAL  
CAPITAL

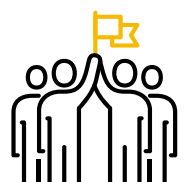


SOCIAL AND  
RELATIONSHIP  
CAPITAL



Harmony cares deeply for the safety and health of employees. We aim to prevent loss of life events and embed a proactive safety culture by driving critical control management, in line with the International Council on Mining and Metals' guidelines and principles. No product is as important as our employees, who should return home daily, safe and healthy.

## WHAT WE ACHIEVED IN FY19



Prepared in accordance with the GRI Standards:

403-1, 403-2, 403-3, 403-4, 403-5, 403-6, 403-7, 403-8, 403-9 and 403-10

### - Safety

- **Roll-out of phase 1 and related training on safety risk management approach** completed in FY19

- 11 colleagues lost their lives in mining-related accidents
- Proactive safety management measured through the close-out of A-hazard fatal risk findings – an average of 98.31% of these findings were closed out

- **Improved safety performance at group level:** lost-time injury frequency rate improved by 2% to 6.16 per million hours worked

### Health

- **TB incidence rate continues to decline** – down a further 21% in FY19

- **Hidden Valley, one of the safest operations in Papua New Guinea,** fatality free for three years

- **4 million fatality-free shifts at Doornkop** – a first for a South African deep-level gold mine

- **Extensive community polio vaccination programme** conducted in mine and project areas in Papua New Guinea

## OUR APPROACH TO SAFETY AND HEALTH

The safety and the health of employees is paramount. Ensuring a safe and healthy workplace is a moral responsibility and key operational focus area, which will ultimately contribute to delivery on our business objectives and the sustainability of our business.



Kusasaletu – health hub



At the beginning of FY17, Harmony embarked on a safety and health journey. With active leadership, a proactive culture and

effective critical control management, we believe we can prevent significant unwanted events and fatal incidents – ensuring Harmony and our employees *Live Longer*. This journey has led to the implementation of a comprehensive integrated safety risk management system (the Harmony risk management approach), training, refresher training and several safety campaigns. This system was developed following an exercise to benchmark best practice in the industry, and an external audit of our safety performance and practice. Building on industry best practice, Harmony implemented a four-layered approach to risk management.

Our activities in relation to safety and health support the following Sustainable Development Goals:

**3** GOOD HEALTH AND WELL-BEING



**8** DECENT WORK AND ECONOMIC GROWTH



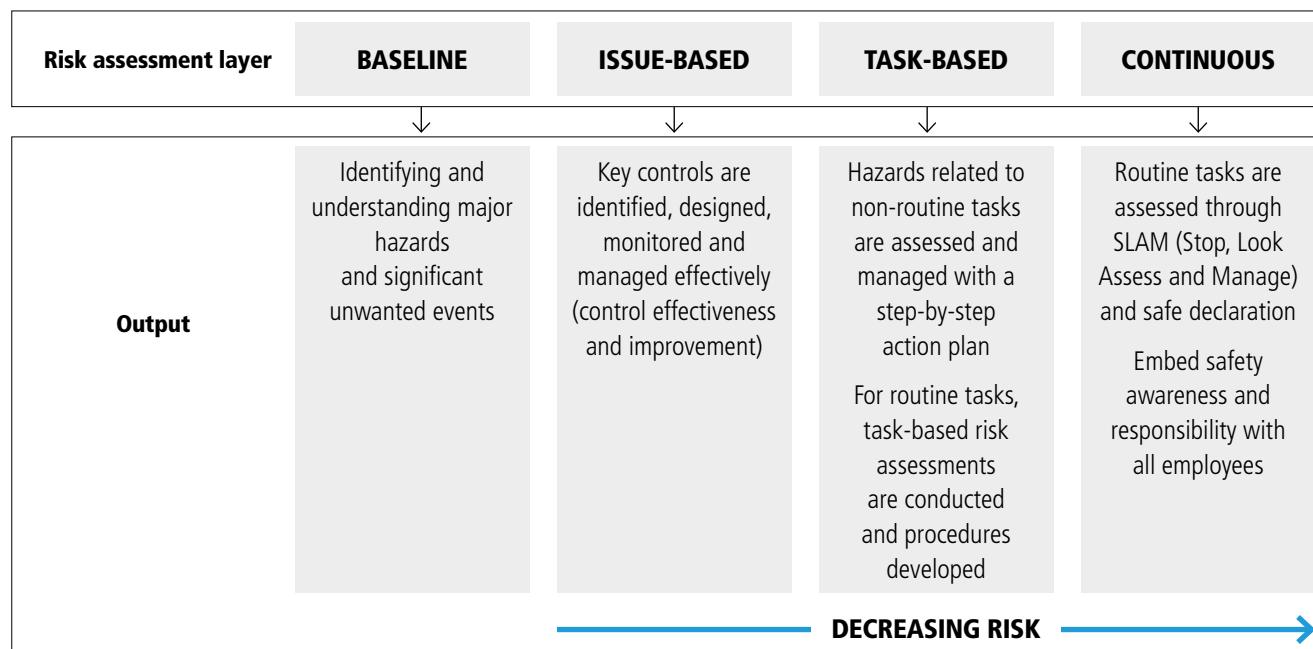
**17** PARTNERSHIPS FOR THE GOALS



Tshepong Operations

# SAFETY AND HEALTH CONTINUED

## FOUR-LAYERED RISK MANAGEMENT APPROACH



Our risk-based approach is not limited to safety. It also encompasses health, the environment, communities and social risks, legal and regulatory risks, among others.

Our occupational safety and health policy and related management framework are aligned with the Mine Health and Safety Act in South Africa and with relevant legislation in Papua New Guinea, including the Mining (Safety) Act and associated regulations. We also apply best practices and guidelines as prescribed by the International Council on Mining and Metals. Our approach to safety encompasses critical control management, preparedness, prevention and the monitoring, review and analysis of relevant safety and health data indicators.

At board level, the technical committee is responsible for approving and monitoring compliance with our safety and health policy, and with legislation. Safety, a key performance indicator for management, is monitored to determine remuneration in terms of safety performance.

Representatives of management, unions and government participate in structures aimed at emphasising the importance of safety and achieving our goal to eliminate fatalities and prevent the loss of life.

At our South African operations, operational safety and health committees ensure that all employees are involved in managing and ensuring the safety of all.

There are 40 full-time safety and health stewards at our South African operations (FY18: 45). The decline in their number was a result of the restructuring of Unisel in FY18 and closure of the Joel plant in FY19. Safety and health feature as agenda items at all union and management engagements.

Harmony is involved in and contributes to external safety initiatives and leading practices in the mining industry for implementation through the Mining Industry Occupational Safety and Health (MOSH)

Community of Practice for Adoption (COPA) process. Champions are nominated for each aspect of occupational safety and health to attend industry meetings and ensure that relevant information is disseminated to all operations.

In Papua New Guinea, safety managers report regularly to the Southeast Asia executive committee by way of notifications, formal monthly reports and meetings. This committee in turn reports to Harmony's technical committee and the board.



Central Plant

# SAFETY

Our values and the Harmony risk-management approach underpin our determination to eliminate the loss of life. A co-operative approach, involving all stakeholders, ensures that the necessary infrastructure and systems are in place – including relevant planning, communication and training. Safe behaviour is constantly reinforced. Employees are instructed and authorised to stop working when they consider a workplace to be unsafe as well as to prevent unsafe actions.

Harmony has set out the following strategic priorities in order to achieve a safe working place by focusing on leadership, risk management and people:

- passionate and active leadership
- effective risk and critical control management (risk assessment as a way of life)
- effective safety management systems (modernisation of systems and processes)
- ongoing organisational learning (learning from incidents)
- a proactive culture and an engaged workforce

Harmony is on a journey to embed risk management as a way of life in Harmony, thus enabling our people to be proactive in order to *Live Longer*.



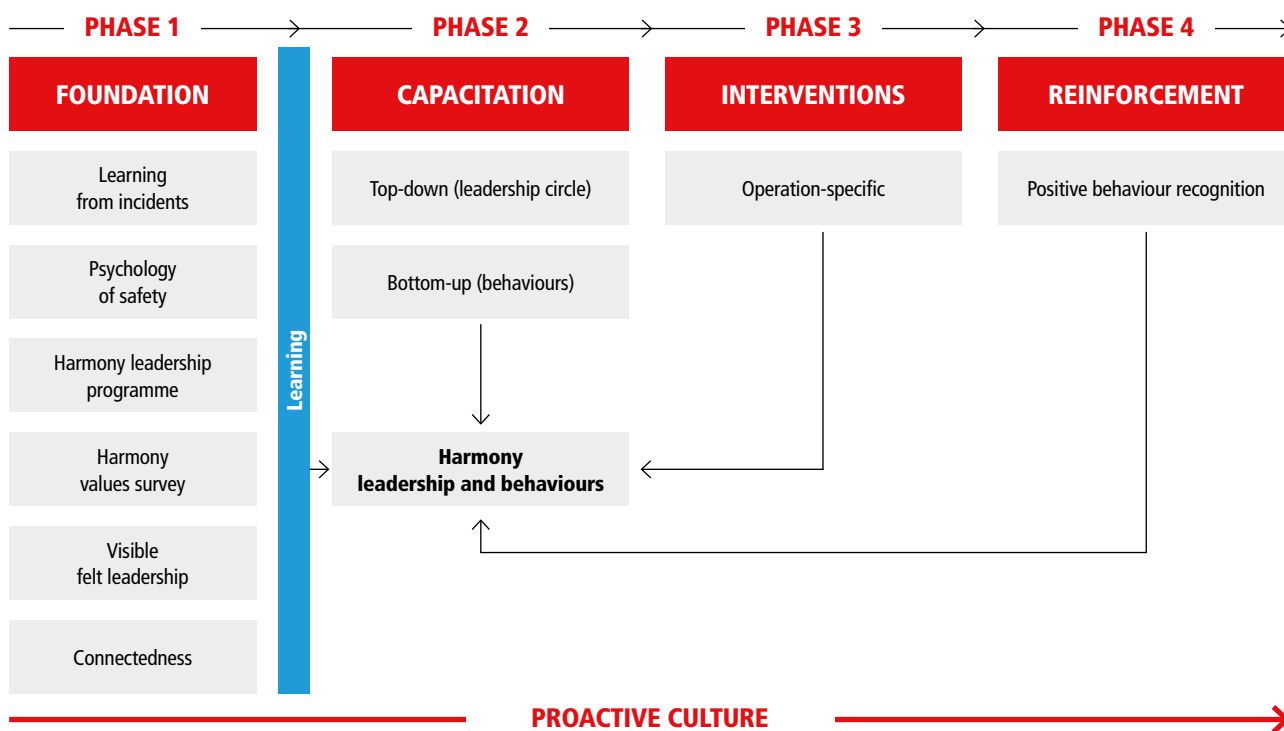
*Tshepong Operations*

## RISK MANAGEMENT: A PHASED JOURNEY

Phase 1 of the roll-out of the Harmony risk management approach at all operations was completed by the end of calendar 2018. Phase 2 of the system's roll-out is being conducted and group-wide implementation is scheduled to be completed by the end of calendar 2019. Phase 3 (currently in progress) involves embedding the monitoring of controls and responses to control failures, together with a process to continually improve control efficacy. Phase 4 will entail further embedding of our risk management systems and critical control management across the organisation, as well as safety leadership and behaviour interventions.

## TOWARDS A PROACTIVE SAFETY CULTURE

In coming years (FY20 – FY22), we will have a stronger focus on safety leadership and behaviour interventions to ensure a proactive culture, as illustrated below. This component is explained in more detail in *Proactive culture and an engaged workforce*.





# SAFETY AND HEALTH CONTINUED

## Risk assessment becoming a way of life

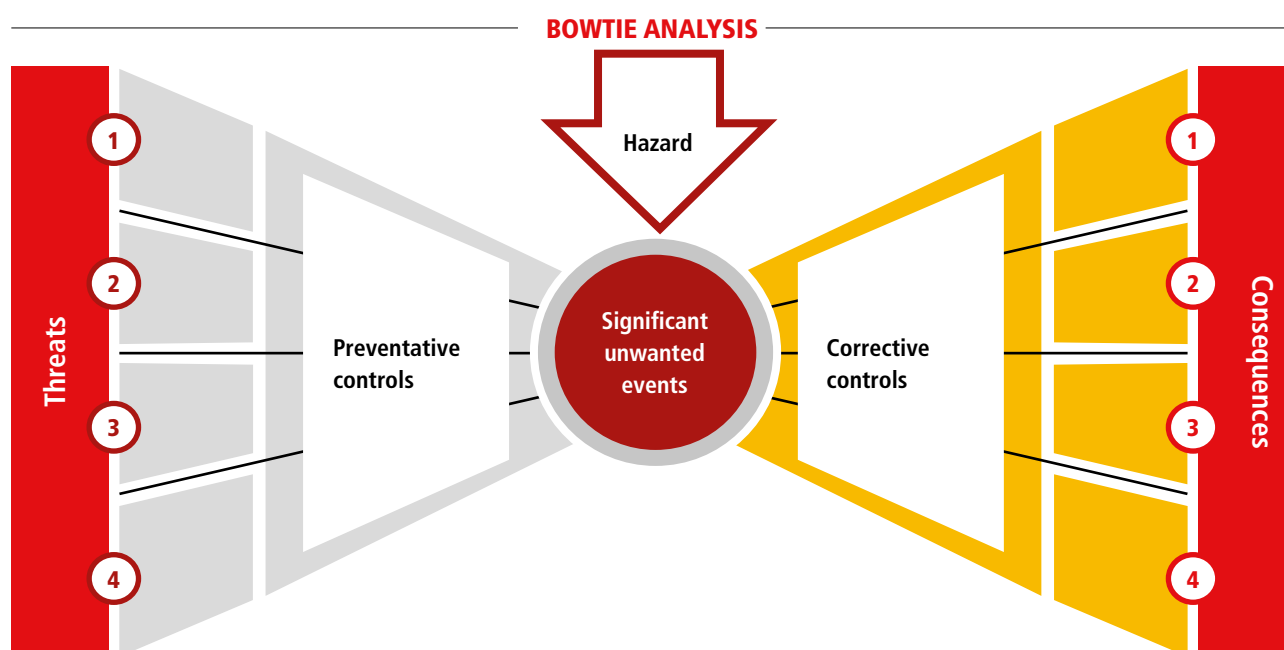
### Layer 1: Baseline risk assessment

As part of the Harmony risk-management embedding process, all underground and surface operations have performed and reviewed baseline risk assessments to identify the individual operation's top 20 significant unwanted events. In identifying hazards, focus is placed on recognising the uncontrolled or unwanted release of energy driving many hazards. The consequence of the unwanted event and probability of the unwanted event are rated and combined to produce a risk level or rating on the Harmony risk matrix.

At our underground operations in South Africa, significant unwanted events relating to seismicity, underground rail-bound equipment, electricity, gravity-induced falls of ground, working at heights, winches, mud rushes and inundation, fire and explosives, and stored energy have been identified and prioritised. In addition, on surface, tailings storage facilities are closely monitored to guard against unwanted safety events. For further information on the management of our tailings storage facilities, see *Tailings management* and *Management of tailings in Papua New Guinea*.

### Layer 2: Issue-based risk assessment

Detailed issue-based risk assessments (including detailed bowtie risk assessments) have been conducted on these significant unwanted events to identify critical controls and associated monitoring and response plans (layer 2 of risk assessment). These critical controls are actively monitored and responded to through our Harmony risk management system.



### Layer 3: Task-based risk assessment and Layer 4: Continuous risk assessment

As part of the process to embed risk management, all Harmony operations identify tasks linked to significant unwanted events they prioritised in Layer 1. Risk assessments are conducted for all these critical tasks. The intent of these risk assessments is to identify the hazards and controls (Go/NoGO rules) related to all task steps. Controls identified in Layer 2 are also checked to ensure they are included in the various task steps. Detailed procedures, checklists, inspections, task observations and training material are developed from this information to ensure all tasks are performed safely and according to legal requirements. These valuable tools, together with Work Notes highlighting key workplace information, are used on a day-to-day basis as the cornerstone of our continuous risk assessment process. Another key element of our continuous risk assessment process is the SLAM principle. Before we do any task in Harmony, we Stop, Look, Assess and Manage. Hazards and high-risk activities associated with working places are further highlighted by Visual Risk Indicator Boards that have been rolled-out across all Harmony operations.

## Modernisation of systems and processes

Modernisation of our risk-management journey began in April 2018. Modernisation enables our proactive risk management approach from a systems perspective. It entails upgrading of the existing system to Syncromine to improve the production planning and reporting process. This provides our mining teams with the required safety and hazard information before entering the workplace so that the mining crews are aware of hazards identified on previous shifts. All of this creates visibility of risks in our workplaces and, through control charts, highlights focus areas. Modernisation and the systemisation of our work routines is an ongoing process with the initial roll-out at all operations planned for completion by the end of calendar 2019.

## Learning from incidents

To ensure that we continue to learn and do not repeat the same incidents, the Harmony risk management and central safety audit teams also conduct formal “learning from incidents” reviews and group audits after all loss of life and high potential incidents.

## Proactive culture and an engaged workforce

The Harmony risk-management journey focuses not only on systems and processes but on establishing a proactive culture through active, visible leadership and consistent safe behaviours. Visible felt leadership training has been provided to all management teams. In July 2018, we started with a “psychology of safety” programme for our leaders. Facilitated “leadership safe behaviour” sessions with all management teams are also underway.


### Day-to-day reinforcement of safety culture

Safety is reinforced in our day-to-day activities. To make the Live Longer strategy tangible, the Harmony risk-management message is continuously reinforced and we introduced our safety mascot, Thibakotsi (meaning “stop accidents”).



At our national safety days, hosted in October 2018 and again in May and June 2019, the message was reinforced by providing all employees with SLAM cards (38 000 red, yellow and green cards were distributed), as well as visual risk indicator boards for the workplace.

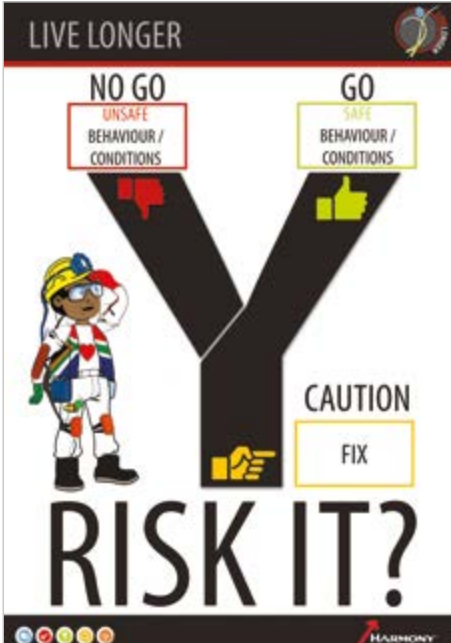
Various communication tools like “Live to tell” videos, *Live Longer* sign boards, “Y” risk it posters and risk-management newsletters are used to keep the message alive at our operations.



**MINE HEALTH & SAFETY ACT (MHS ACT)**

**Section 23**  
Every employee has the right to leave a dangerous working place.

**Section 83**  
No person may be discriminated against for exercising any right in terms of the MHS Act including the right to withdraw in terms of Section 23.




**BEFORE I DO ANY TASK, I**

- S STOP**  
& think about the people, area & tools
- L LOOK**  
for potential hazards and understand energies
- A ASSESS**  
if controls are in place and effective
- M MANAGE**  
deviations & correct (see green, orange, red card)

# SAFETY AND HEALTH CONTINUED

## WHAT WE DID IN FY19

Our group safety performance improved in FY19 when we recorded a group lost-time injury frequency rate of 6.16 per million hours worked (FY18: 6.26). Despite this improvement, there were, regrettably, 11 mining-related fatalities during the year (FY18:13), all at our South African operations. There were no fatalities at our Papua New Guinean operation for the third consecutive year.

Harmony continues to provide counselling and financial assistance to the families of deceased employees. An education fund established in FY14 supports the needs of school-going dependents of all employees and contractors who lose their lives in the workplace. By the end of June 2019, this fund had provided assistance totalling R3 million and ensured that 126 dependents continued their education.

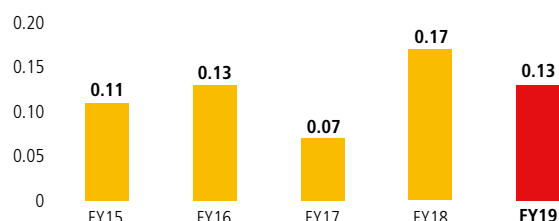
## South Africa

The fatal injury frequency rate for the South African operations improved from 0.17 to 0.13 per million hours worked and the lost-time injury frequency rate to 6.48 from 6.67 per million hours worked. We lost 25 428 shifts to occupational injury (FY18: 23 780).

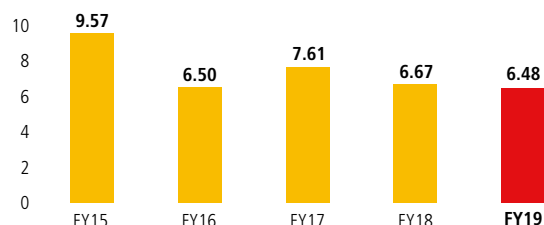
The reportable injury frequency rate improved to 4.05 per million hours worked (FY18: 4.18) with the fall-of-ground injury frequency rate improving by 23% to 1.09 (FY18: 1.41). There were three gravity-related fall-of-ground fatalities (FY18: 3) and two

seismic-related fall-of-ground fatalities (FY18: 7). The rail-bound equipment injury frequency rate improved by 7% to 0.55 (FY18: 0.59). One rail-bound equipment-related fatality was recorded during the year (FY18: 0).

### South African operations: Fatal injury frequency rate (per million hours worked)



### South African operations: Lost-time injury frequency rate (per million hours worked)



## In memoriam

Date	Operation	Name	Occupation	Cause
19 July 2018	Tshepong	Tshepo Libate	Winch operator	Gravity-related fall of ground
10 July 2018	Kusasaletu	Michael Plaatjies	Team leader	Gravity-related fall of ground
19 October 2018	Kusasaletu	Tsietso Manoto	Engineering artisan	Working at heights
3 November 2018	Moab Khotsoeng	Mvuyisi Mayekiso	Locomotive operator	Trucks, tramming and transport
22 January 2019	Phakisa	Mlamleli Mngumeni	Driller	Seismic-related fall of ground
8 April 2019	Doornkop	Mantlobo Phelane	Winch operator	Seismic-related fall of ground
30 April 2019	Doornkop	Bernado Benedito Moiane	Winch operator	Gravity-related fall of ground
7 May 2019	Bambanani	John Daniel Nell	Miner	Working at heights
29 May 2019	Phakisa	Juan Frank Little	Rock engineer	Electricity
5 June 2019	Tshepong	Andile Mqungquthu	Winch operator	Scraper winch
28 June 2019	Kusasaletu	Sennanyane Mashapha	Cage attendant	Shaft conveyance



Target 1 – health hub



Kusasaletu – health hub

The number of Section 54/55 instructions issued during FY19 increased slightly to 247 (FY18: 242). Production lost as a result of safety-related stoppages totalled 821kg or 28 735oz (FY18: 530kg or 18 550oz).

### Managing seismicity

Our mines monitor and manage seismicity continuously. Support systems and procedures focused on energy absorption are in place on our underground mines with higher levels of seismic activity.

A number of methods are used to prevent and control seismicity and its consequences:

- Routine seismic monitoring systems are in operation at all our mines in South Africa to monitor all mining-related seismicity, using data generated to quantify exposure to seismicity, to warn of potential instabilities and to aid mine planning and design
- Short-term seismic hazard assessments of each mining panel are conducted daily – mining crews are withdrawn depending on the seismic hazard rating of a workplace
- Monthly planning process limits the mining rates in high-risk areas and manages the design of mine stope faces
- Long-term planning addresses placement of development excavations in the footwall and in the vicinity of other excavations
- Long-term mining sequence is addressed in yearly life-of-mine planning and technical sessions
- On mines with the hazard of face strain bursts, pre-conditioning of the stope face is applied
- Rapid yielding hydraulic props are used on certain seismically active mines to mitigate the high velocity of closure expected during rockbursts
- On certain seismically-active mines, backfill is used as a regional and local support to assist in reducing volumetric convergence and high stresses on the face and in maintaining the integrity of fractured rock in the stope face and gully regions
- Support units are specially selected to cater for rockfall conditions and dynamic loading in seismically-active areas
- Secondary support is installed in selected areas to manage changes in stress and expected shakedown during seismicity
- Flooding of mines also influences seismicity – water levels in neighbouring mines and in the zone of influence are monitored and managed where possible
- As most seismicity occurs post blasting, centralised blasting is important in ensuring employee safety on seismically active mines. All employees are removed to areas of safety before the blast is set off centrally. This minimises employees' exposure to the blast itself as well as to the seismicity that could be triggered by the blast. Centralised blasting also helps to reduce the time period in which blasting-induced seismicity predominantly occurs after the blast, ensuring the safe return of employees for the next shift.

For a safer working environment in deep-level hard-rock mines, Harmony contributes to fundamental research programmes conducted by the University of Pretoria and the Institute of Mine Seismology into specific rock engineering and seismological issues.

### Papua New Guinea

Hidden Valley recorded no fatalities for the year, and achieved 1.75 million fatality-free shifts on 2 July 2019, shortly after financial year end. The Hidden Valley operation has delivered world-class safety performance by achieving more than two years lost-time injury-free in May 2019. The lost-time injury frequency rate regressed slightly – from 0 in FY18 to 0.35 in FY19.

The safety approach at Hidden Valley focuses on risk management and critical controls, visible felt leadership and promoting a proactive safety culture.

The updated safety and risk management system was successfully implemented in February 2019 and is aligned with the risk management safety approach rolled out at the South African operations, Australian standard 4801 and the ISO 45001 (once ratified).

Safety measures in place include implementation of critical controls and verification of all high-risk (potentially fatal) activities. Work menus and related training programmes, incorporating relevant critical controls, were developed for high-risk activities, rolled out and monitored.

Verification of the implementation of critical controls continues to be embedded across the Hidden Valley operation. This is important in monitoring the effectiveness and quality of controls to use leading indicators.

The mountainous terrain, high rainfall, quickly changing weather conditions and seismicity in Papua New Guinea present particular safety challenges such as landslides and/or slope failures. Natural landslides are relatively common and, together with potential man-made landslides (slope failures associated with open-pit mining), pose a significant safety risk.

Real-time slope stability radar systems, critical in monitoring and managing potential failures and failure incidents, operate at both open pits. Specific geotechnical risk assessments are undertaken for all work sites in Papua New Guinea with the associated mitigation plans being updated at least annually.

As vehicle-related incidents are also a significant risk, we have implemented the following mitigation measures:

- installation of on-board cameras to monitor driver behaviour for corrective training
- vehicle-specific emergency braking procedure training for drivers
- manned check points for trucks to verify permits and licences prior to entry into mine lease areas and prior to certain hazardous declines
- automated controls such as collision awareness, fatigue detection and personal protective systems to prevent accidents in FY19.



# SAFETY AND HEALTH CONTINUED

## HEALTH

At Harmony, we believe that every employee deserves a fulfilled life and that is why we care about their health and wellbeing. It is important that our employees are fit for life, fit for work and fit to retire.

Our approach to healthcare is proactive and risk-based and aims to ensure that healthcare is easily accessible. Healthcare and employee well-being fall into two distinct areas: employee health and wellness, which is occupational healthcare in the workplace, and non-occupational healthcare, which is lifestyle-related.

Harmony's health strategy is aligned with our strategic objectives. Reducing health-related safety risks, promoting employee wellbeing and reducing absenteeism contributes to improved productivity by providing a sustainable, cost-effective health service solution.

In South Africa, Harmony's healthcare programme provides primary, secondary and tertiary healthcare as well as occupational health services to all employees through company-managed healthcare facilities, medical aid membership and external healthcare providers. We continue to provide accessible, comprehensive healthcare services at our health hubs located close to the workplace.

Harmony's proactive healthcare aims to manage illness by identifying and treating disease early and thus helping to prevent permanent disability. Medical surveillance, active case finding, early detection and treatment of disease are integral aspects of our management healthcare system.

The four pillars of our health services are:

- health promotion and awareness
- disease prevention and risk management
- clinical intervention (treatment programmes)
- continuous health risk profiling

### WHAT WE DID FY19

#### South Africa

Key health focus areas in FY19 included optimisation of labour availability, the ongoing integration and alignment of Harmony's healthcare strategy at Moab Khotsong, and greater attention and awareness of mental health. Given the anticipated increase in mental illnesses, with one in six South Africans suffering from psycho-social issues and substance use, we have developed an employee psycho-social programme (EPP) to provide access 24/7/365 to all employees. The programme will ensure an employee's positive state of physical and emotional wellness, and enhance employee and workplace effectiveness by preventing, identifying and resolving personal and productivity issues. The programme's roll-out began post year-end.

#### Employee wellness and healthcare

##### Healthcare delivery

At our South African operations, membership of a medical scheme is compulsory for all category 9+ employees. For category 4-8 employees, membership is voluntary with 8 202 employees participating in medical schemes in FY19 (FY18: 6 879). Harmony subsidised the related costs on behalf of employees by R18.4 million (US\$1.3 million) a month (FY18: R14 million or US\$1.1 million).

In all, 24 471 category 4-8 employees have elected not to join a medical scheme. Instead they receive in-house comprehensive health services from mine medical health facilities and associated preferred providers at no cost to the employee. The cost of providing these services was R33.4 million (US\$2.4 million) a month in FY19 (FY18: R24 million; US\$1.9 million), which includes health hub management costs, specialists and hospitalisation – the increase is a result of the inclusion of Moab Khotsong.

The dedicated health hubs at our operations undertake active case-finding and screening as well as active disease management of chronic conditions for employees who are not members of a medical scheme. Medical surveillance is conducted at our health hubs for all employees, including contractors. In all, 53 279 medical examinations were conducted in the past financial year (FY18: 46 513).

#### MEDICAL SCHEME MEMBERSHIP IN FY19

Employee category	Medical aid membership	Number of employee members	Monthly cost to Harmony of employee medical aid membership	Total annual cost
9+	Compulsory	8 202	R18.4 million US\$1.3 million	R220.8 million US\$15.6 million
4-8	Voluntary			
4-8	Non-medical aid members receiving in-house comprehensive medical care	24 471	R33.4 million US\$2.4 million	R400.8 million US\$28.8 million



Total cost to Harmony of medical healthcare provision in South Africa is

**R621.6 million (US\$44.4 million)**

### Managing health-related absenteeism

Our *At work* health management programme continues to yield favourable results by contributing to more healthy people at work. The aim of this programme is the early identification of employees who may become chronically ill or medically incapacitated by the diseases, and to manage, review and monitor their medical conditions. Health-related absenteeism increased to 7.7% in FY19 (FY18: 7.4%). This increase was mainly as a result of more employees using private medical services. Abnormalities in absenteeism trends are closely monitored by management. In the past year, 10 663 (FY18: 8 463) individual medical cases were reviewed by a team of healthcare professionals.

### Preventative healthcare – promoting awareness and education

Harmony's health initiatives focus on the prevention of diseases to ensure total worker health. Employee education, which addresses these diseases, includes the employee induction programme, podcasts and television screens to educate employees about various health issues. Other initiatives include the distribution of pamphlets, health-worker training, screening at all medical centres, disease management interventions and quality assurance. In addition, an exclusive health desk has been set up to improve and strengthen communication about health-related matters.

Monthly health awareness campaigns, guided by the annual health calendar, focus on particular health-related topics such as HIV/Aids, tuberculosis (TB), sexually transmitted infections, as well as lifestyle and occupational diseases. Ongoing monitoring and education are conducted on various digital platforms and at the medical health hubs, which oversee major health campaigns at operational level.

To curb the rise in non-communicable diseases and their devastating impact, the healthy lifestyle programme was reviewed.

The review resulted in the deployment of dietitians, biokineticists and fitness trainers to the operations (decentralisation of these services) to improve accessibility to these required services.

In preparation for the winter season in South Africa, the influenza (flu) vaccine is offered to employees, for free, as a precautionary measure. In all, 8 007 employees (FY18: 8 883) received flu vaccinations in the past financial year.

### Managing diseases

#### Tuberculosis

TB is one of the most pressing public health concerns in South Africa, including the gold mining industry. The TB incidence rate at our South African operations remains high compared with World Health Organization and national benchmarks.

Harmony's TB control programme, which is aligned with the relevant guidelines and prescriptions of the World Health Organization, and with the National Strategic Plan to combat TB, focuses on contact tracing, comprehensive screening, testing, hospitalisation of infectious cases and a directly observed therapy short course. As an affiliate of the Minerals Council South Africa, and through the national Masoyise iTB campaign, Harmony is committed to ensuring that every employee is screened and tested for TB annually, and commits to further reduce TB infections in line with the national milestone that by December 2024, the TB incidence rate should be at or below the highest of either:

- the national TB incidence rate or
- reduce new TB infections in line with the National Strategic Plan

In FY19, 37 666 employees (including contractors), or 99% of the workforce, were screened for TB, exceeding the 90% target set by the Minister of Health. A total of 102 cases of TB were certified (FY18: 540).

The TB incidence rate per 100 000 employees has continued to decline since the introduction of our proactive healthcare strategy in FY10, improving by 21% year on year in FY19.



Target 1 – health hub

### Absenteeism

	FY19	FY18	FY17	FY16	FY15
Health-related absenteeism (%)	7.7	7.4	7.4	7.2	8.0

### Tuberculosis

	FY19	FY18	FY17	FY16	FY15
TB screening of employees and contractors	37 666	29 955	30 113	29 077	na
% of workforce	99	97	97	96	na
TB incidence rate (per 100 000 employees tested)	841	1 063	1 366	1 524	1 887

# SAFETY AND HEALTH CONTINUED

## HIV/Aids

The HIV/Aids epidemic in South Africa continues to have a significant impact on employees and their dependents despite significant progress in raising awareness and prevention, and the national roll-out of antiretroviral therapy. The untreated illness can result in higher levels of opportunistic co-infections, which lead to increased absenteeism and reduced performance levels, loss of skills, greater economic burden, and sometimes death. Motivating employees to confirm and/or disclose their HIV status, despite perceived stigma and confidentiality issues, remains one of the greatest challenges. Initiatives such as positive behaviour programmes are pivotal in this regard.

At our South African operations, 8 947 employees (FY18: 8 108) have been identified as HIV-positive and are on the HIV/Aids programme with 8 024 (FY18: 6 938) receiving antiretroviral therapy.

HIV/Aids is managed through our clinics and the services of 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 medical interventions and ongoing monitoring of compliance.

The Department of Health, in conjunction with the Joint United Nations Programme on HIV and Aids (UNAids), adopted the 90-90-90 targets, which are globally aligned. Harmony has in turn aligned its HIV/Aids programme with these targets to be achieved by 2020:

- 90% of all people living with HIV will know their HIV status – Harmony is currently at 82% (FY18: 82%) (including contractors)
- 90% of all people with diagnosed HIV infection will receive sustained antiretroviral therapy – Harmony is currently at 88% (FY18: 80%) medically uninsured people, excluding contractors
- 90% of all people receiving antiretroviral therapy will have viral suppression

## HIV/Aids

	2020 Target (%)	FY19	FY18	FY17	FY16	FY15
Employees identified as HIV-positive		8 947	8 108	7 816	7 063	7 050
Employees receiving antiretroviral therapy		8 024	6 938	6 430	5 333	4 016
<b>Performance against UNAids targets – 2020</b>						
Employees knowing their HIV status (including contractors) (%)	90	82	82	78	73	na
Employees receiving antiretroviral therapy (medically uninsured, excluding contractors) (%)	90	88	80	78	74	na
Employees receiving antiretroviral therapy will have viral suppression (medically uninsured) (%)	90	73	71	70	61	na

## Chronic diseases

	FY19	FY18	FY17	FY16	FY15
Employees with a chronic condition*	18 924	16 247	15 216	15 137	8 600
Proportion of South African workforce (%)	61	59	55	55	42
Diabetes (%)	9	6	6	6	6
Hypertension (%)	34	34	33	33	42
HIV/Aids** (%)	47	50	52	52	47

\* Employees with more than one chronic disease are counted in each condition

\*\* From 2016 onwards, all HIV positive people were included and not only those on treatment

## Voluntary counselling and testing for HIV/Aids

Pre-test counselling and voluntary testing are offered to all employees through ongoing interventions at all Harmony healthcare hubs. In all, 38 737 (FY18: 32 194) employees received voluntary counselling and testing during the year and, of these, 31 869 (FY18: 26 082) confirmed their status.

## Chronic diseases

Non-communicable chronic diseases, including hypertension, heart disease and diabetes continue to pose a significant challenge for our employees.

Specific initiatives have been implemented to manage chronic diseases with particular focus on HIV/Aids, TB, diabetes and hypertension. In FY19, 61% (FY18: 59%) of employees at the South African operations had a chronic condition. Of the 18 924 employees diagnosed with chronic conditions, 34% have hypertension, 9% diabetes and 47% HIV/Aids.



Kusasaletu

## Managing occupational health

Harmony is focused on creating an enabling environment for teams to succeed. Managing underground health hazards, including temperature, dust and noise control, is critical.

### **Managing underground temperatures – limiting heat stress**

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

In FY19, 22 157 heat-tolerance tests were conducted with 88 cases of heat-related illness reported (FY18: 20 797 tests and 47 cases). Most cases can be attributed to dehydration. Environmental working conditions are monitored continuously.

### **Noise management – eliminating noise-induced hearing loss**

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

During the year, 99.5% of occupationally-exposed employees (and contractor employees: 85.7%) were given personalised hearing protection devices (FY18: 99% and 84%).

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

#### **Industry milestones for noise-induced hearing loss:**

- *By January 2018, no employee's standard threshold shift will exceed 25dB(A) from the baseline when averaged at 2 000Hz, 3 000Hz and 4 000Hz in one or both ears:* Regrettably, five cases were reported where this threshold level was exceeded in FY19
- *By December 2024, the total operational or process noise emitted by any equipment must not exceed a milestone sound pressure level of 107dB(A):* Only three machines fall into this category to which there is restricted access and limited exposure time to ensure the safety of our employees

Annual audiometric testing is conducted at our occupational health hubs during medical examinations. The number of early noise-induced hearing loss cases (5-10% shift) decreased from 446 cases in FY18 to 272 in FY19.

An awareness drive was initiated at all operations to ensure that 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 conducted.

As part of the initiative to prevent noise-induced hearing loss, 22 150 (FY18: 25 607) employees participated in the "hearing coach promotion" initiative during the year. Evaluations were conducted and guidance was provided where necessary on the use of customised hearing-protection devices.

### **Dust control – eliminating related occupational health diseases**

Dust discharge occurs during activities where rock is broken at source, such as during stoping, development and trackless mining. Engineering controls to allay dust have been implemented or are being rolled out at our underground operations to minimise employees' exposure to silica dust, including leading practices as advocated by the Mining Industry Occupational Safety and Health (MOSH) such as employing fogger systems at strategic underground areas and implementing foot- and side-wall treatments to allay dust in identified intake airways.

Multi-stage dust filtration systems have also been installed and all winches have been covered. In addition, real-time dust monitors are installed at all our underground operations. These monitors provide immediate dust readings, which allow immediate action to be taken on unacceptable readings.

Training and awareness programmes address dust control in stopes and all development ends are equipped with water blasts to settle dust directly after a blast.

### **Managing silicosis**

Silicosis is caused by long-term exposure to high levels of quartz silica dust and can increase susceptibility to TB. Harmony's integrated HIV/Aids, TB and silicosis policy and programme is intended to responsibly manage the debilitating disease and proactively prevent deterioration, and thus minimise the risk.

During FY19, 204 cases of silicosis were submitted to the Medical Bureau for Occupational Diseases and 58 cases were certified (FY18: 211 cases reported and 179 certified).

## Occupational health statistics

Heat	FY19	FY18	FY17	FY16	FY15
Heat tolerance tests conducted	22 157	20 797	15 354	15 549	6 736
Heat-related cases reported	88	47	53	20	23
Noise					
Number of early noise-induced hearing loss cases	272	446	518	370	526
Compensated noise-induced hearing loss	62	116	90	87	81
Employees with personalised hearing devices (%)	99.5	99	99	97.7	98.9
Contractor employees with personalised hearing devices (%)	85.7	84	76	70.6	59.6
Silicosis					
Number of cases submitted	204	211	220	284	313
Number of cases certified	58	179	108	64	197



## SAFETY AND HEALTH CONTINUED



*Project Ku-Riha*

### *Project Ku-Riha and ReConnect*

Project Ku-Riha, launched by the Department of Health in 2015, aims to improve the system of compensation for mineworkers who suffer from occupational lung disease, to address the related claims backlog and to ensure that claims are paid speedily and efficiently.

Due to the impact on mineworkers who contracted silicosis and/or TB at work on gold mines in South Africa, a class action lawsuit was filed against the gold mines, going back to 1965. Subsequently six mining companies (African Rainbow Minerals, Anglo American South Africa, AngloGold Ashanti, Gold Fields, Harmony and Sibanye-Stillwater) and attorneys Richard Spoor Inc, Abrahams Kiewitz Inc and the Legal Resources Centre reached a settlement in the litigation during May 2018. This settlement was approved by the Gauteng High Court on 26 July 2019. As part of the settlement, the Tshiamiso Trust will be established to facilitate the payment of claims to potential claimants or their beneficiaries on behalf of the six mining companies.

Towards the end of 2016, Harmony began a concerted effort to finalise all current and former employees' claims and established the Harmony ReConnect department. As a result, we have finalised more than 10 800 Harmony-related claims to the value of R206 million (US\$13.4 million) from the Compensation Commissioner's fund.

### **Industry milestones: eliminating silicosis**

- *By December 2024, 95% of all exposure measurement results will be below the milestone level for respirable crystalline silica of 0.05mg/m<sup>3</sup>. Annual incremental targets have been set to ensure we meet this milestone ahead of time and not to wait until the deadline is upon us.*
- *Occupational health and safety milestone – to eliminate silicosis. Using present diagnostic techniques, no new cases of silicosis will occur among previously unexposed individuals (that is people who were not exposed to mining dust before December 2008 and who began working in the industry in 2009): Since 2017, regrettably, one employee has been certified with first degree silicosis. Workshops are being conducted by occupational hygienists at all operations to establish a strategy to achieve this milestone. This will assure a special focus on areas where compliance is lacking.*

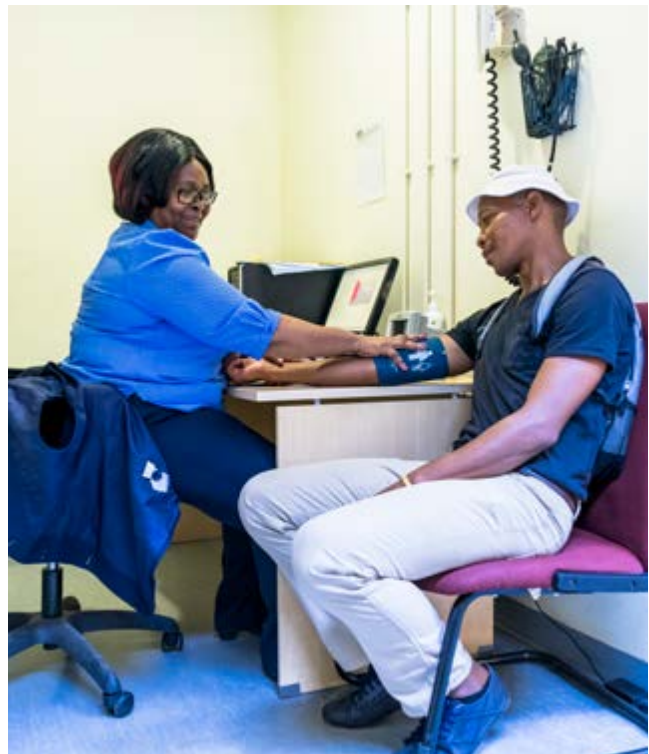
### **Radiation protection**

Radiation levels and radiation exposure are monitored at all of our operations in South Africa. The dose limits are 50 millisievert a year and 100 millisievert over five years. All our South African operations comply with these limits. Operational controls ensure that elevated monitoring results are investigated and corrected when necessary. Radiological clearances are conducted at decommissioned sites to ensure the future declassification of these areas.

### **Community health initiatives**

Harmony recognises that it can play an important role in the healthcare of surrounding communities. Activities in FY19 included:

- TB dialogue at Tshepisoeng, near our Doornkop mine, where leaders were mobilised at all levels in line with the goals and objectives for the National Strategic Plan to promote shared accountability for sustainable response to TB and HIV/Aids
- A TB-focused health campaign was conducted at Bronville and Extension 20 in conjunction with the Department of Health in the Lejweleputswa district (close to Bambanani) and a total of 109 community members were screened for TB – four were referred for further TB management
- Harmony was a co-sponsor of the Run for Diabetes event held in April 2019 to raise awareness of the impact of diabetes on communities and the vital role played by the family in the management, care, prevention and education of diabetes. Employees from our Randfontein head office and the Doornkop and Kusaalethu mines participated in the run. The community-driven event was a collaborative effort between the Kaya FM, Harmony and other sponsors. In addition, Harmony provided free health screenings for all race participants.



*Kusaalethu*

## Papua New Guinea

In Papua New Guinea, medical centres at Hidden Valley and Wafi-Golpu provide primary healthcare and occupational health surveillance to employees and contractors. Medical registers, in an online information system, are used to track and review each patient's progress from the first visit through to final treatment.

Upper respiratory tract infections remain one of Harmony's main medical concerns in Papua New Guinea.

Despite experiencing between 3m to 4m of rain a year, which naturally suppresses dust, testing for respirable silica is conducted with a focus on the higher-risk areas at Hidden Valley. Baseline data indicates that the risk of personnel contracting silicosis is negligible.

A total of 17 601 health examinations were conducted at the medical centres during FY19 (FY18: 15 198) of which 3 515 (FY18: 3 508) were random drug and alcohol tests.

### Upper respiratory tract infections

The Hidden Valley mine is located approximately 3km above sea level and most employees reside in the lower, warmer areas. The regular change in altitude between home and work contributes to various respiratory ailments. Other factors contributing to these infections include low levels of personal hygiene in home villages and airborne pollen during peak flowering times, which affects air quality. The high rainfall all year round maintains high levels of humidity (around 80% to 90%), which creates favourable conditions for fungus, bacteria and viruses to thrive.

In all, 2 191 employees were treated for respiratory ailments in FY19 (FY18: 2 581). An employee education programme on respiratory ailments and gastro-intestinal hygiene has been successfully implemented.

### Tuberculosis and HIV/Aids

Hidden Valley has installed a digital X-ray machine and medical laboratory to accurately diagnose tropical diseases, TB and HIV/Aids. In FY19, six new cases of TB were reported during the year (FY18: 22).

In all, 70 personnel underwent voluntary counselling and testing for HIV/Aids during the year at Hidden Valley compared to 472 during FY18.

### Malaria

Malaria is endemic in many parts of Papua New Guinea, including work sites such as Wafi-Golpu and Lae, excluding Hidden Valley.

Many employees and contractors working at Hidden Valley reside in areas where malaria is endemic. Our community health projects play a vital role in combatting the disease in these areas. Over the past two years, there has been a 50% increase in patients with malaria-like symptoms.

## Community health initiatives

The community health outreach programme was developed to improve the health and wellbeing of local communities. It is led by the Medical Department and a Health Extension Officer. During FY19, the following activities were conducted:

- **Community medical assistance** in eight mostly obstetric emergencies that were transferred to Bulolo Health Centre
- **Local health centre visits** to maintain working relationships with local health workers
- **Community donations** of beds by Rotary Australia distributed to local health facilities
- **Polio vaccination programme** to manage the polio outbreak declared by the Papua New Guinea government through a national vaccination plan developed by the World Health Organization for immunisation of children from birth to five years – the Hidden Valley health extension officer vaccinated 3 080 children during five campaigns. A further 474 vaccinations were administered within Wafi-Golpu project area communities
- **Cervical cancer vaccination programme**, begun on 16 January 2019 in partnership with the Rotary Club of Boroko, reached 474 girls, aged nine to 14 years, in the Hidden Valley landowner areas while over 6 000 vaccines were administered to communities within the Wafi-Golpu project area

## OUTLOOK

**Safety:** Roll-out and group-wide implementation of phase 2 of our risk management approach is scheduled to be completed by the end of calendar 2019. The focus will shift to phase 3 and phase 4, the full implementation of our risk management systems and critical control management across the organisation, together with safety leadership and behaviour interventions.

While modernising and systematising our work routines is ongoing, the initial roll-out at all operations is expected to be completed by December 2019.

**Health:** In South Africa, roll-out of the employee psycho-social programme to address the rising scourge of mental illness will be completed in the first half of the new financial year. In addition, given the increase in non-communicable diseases related to obesity, a *Weight Warrior* programme is also to be launched to curb these diseases.



Papua New Guinea

# EMPLOYEE RELATIONS

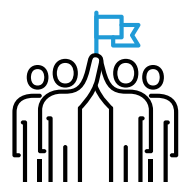


HUMAN AND  
INTELLECTUAL  
CAPITAL



We strive to maintain sound, lasting relationships with our employees. Motivated, productive employees are vital to ensuring successful delivery on our strategy and to the achievement of our business objectives.

## WHAT WE ACHIEVED IN FY19



Prepared in accordance with the GRI Standards:

102-41, 202-1, 202-2, 406-1, 401-1, 404-1, 404-2, 405-1 412-1, 412-2, 412-3 and MM4

- **Three-year South African wage agreement** concluded in October 2018 remains in place

- **Employee training and leadership development** remained an important focus area across the group

- **Sisonke employee share ownership scheme** for non-managerial employees in South Africa launched in February 2019

- **Stable employee relations** environment in South Africa and Papua New Guinea

- **Positive and constructive union stakeholder relationships** and roll out of employee relations policy framework in South Africa

- **Workforce localisation and gender diversification** processes progressed in Papua New Guinea

- Good progress made with **financial education and counselling programmes** that address employees' financial indebtedness

- **Promotion of employee home ownership scheme** proceeding well in South Africa

# APPROACH TO EMPLOYEE RELATIONS

Our employees are central to Harmony achieving its business objectives. We provide training and development, promote fair labour practices for employees and contractors, and encourage local employment opportunities to ensure employees are motivated and productive. Our aim is to provide the opportunity for each employee to develop to their full potential. Employee safety and wellbeing is a priority. For more details, see *Safety and health*.



Doornkop

Our human resource 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 productivity
- Maintaining effective employee performance and leadership development management systems

## GOVERNANCE

Our employment policies, procedures and practices take into account and comply with relevant labour legislation in South Africa and Papua New Guinea. They are aligned with the guidelines of the International Labour Organization (ILO). Recruitment initiatives focus on local communities in both countries. All human resource procedures and policies, including remuneration and incentive schemes, are reviewed regularly.

## WHAT WE DID IN FY19

### Employee complement

Region	Permanent employees			Contractors			% of employees drawn from local communities		
	FY19	FY18	FY17	FY19	FY18	FY17	FY19	FY18	FY17
South Africa <sup>1</sup>	31 201	32 520	26 478	6 159	5 951	4 512	79	75	76
Papua New Guinea <sup>2</sup>	1 675	1 397	1 300	738	818	911	96	96	95
<b>Harmony – total</b>	<b>32 876</b>	<b>33 917</b>	<b>27 778</b>	<b>6 897</b>	<b>6 769</b>	<b>5 423</b>			

<sup>1</sup> Increase in FY18 due to the acquisition of the Moab Khotsong operation and the integration of the related employee complement

<sup>2</sup> Excludes employees of the Wafi-Golpu Joint Venture

Our activities in relation to employee engagement support the following Sustainable Development Goals:





# EMPLOYEE RELATIONS CONTINUED

## Employment, diversity and gender equality

We are committed to building and maintaining a workforce that is representative of the communities within which they are located.

### South Africa

Our aim is for our workforce to represent the diversity of South Africa's population and, in so doing, comply with the requirements of the Mining Charter and the employment equity targets submitted to the Department of Labour.

In FY19, 62% (FY18: 60%) of Harmony's management were historically disadvantaged South Africans (defined by the Mineral and Petroleum Resources Development Act as any person, category of persons or community, association or juristic person disadvantaged by unfair discrimination before the Constitution took effect).

Mining Charter III, gazetted on 27 September 2018, introduced new targets and measurement criteria to accelerate transformation within the industry. The implementation guidelines related to the employment equity targets of Mining Charter III have been clarified by industry engagement conducted through the Minerals Council South Africa. Harmony's strategy aims to accelerate the representation of historically disadvantaged persons across a number of managerial levels, particularly women representation, formalising career progression plans and enhancing our employment equity plan to meet the requirements of Mining Charter III. The measuring of employment equity targets has now moved towards measuring employment equity in accordance with the country's national and/or provincial economically active population demographics. The transformation pillars of Mining Charter III include a transition period of five years for progressive implementation.

The new targets set out in Mining Charter III focus on representation by historically disadvantaged persons, including women, at every level. The table below compares Harmony's performance against the targets in each category.

We have one universal salary scale that does not discriminate by gender or on any other arbitrary grounds.

In FY19, a gender diversity strategy to improve women representation in management approved by the board in FY18 was fully rolled out. The strategy sets specific annual targets for the proportional representation of women in management (see [page 96](#)).

Harmony reports quarterly on its employment equity plan and on progress made to the social and ethics committee. Employment equity reports are submitted to the Department of Labour and the Department of Mineral Resources and Energy annually.

### Papua New Guinea

The emphasis here is on attracting and retaining locally-recruited employees, particularly landowners and local citizens. Operations are governed by a three-year training plan lodged with the local Department of Labour in terms of which we ensure that local employees receive ongoing training and succession is managed. In all, 96% of employees (FY18: 96%) at Hidden Valley are local and 14% are women (FY18: 12%).

## Talent management

All employee training and development programmes are aligned with the company's strategic and operational needs, and to enable employees to acquire the skills necessary to enable them to enhance employee performance, motivation and productivity.

### South Africa

Workforce training and skills development is a key focus area. In FY19, 93% (FY18: 92%) of our South African workforce attended training and skills development amounting to R484 million or US\$34.2 million (FY18: R418 million or US\$32.5 million). This included South African-based research and development initiatives in exploration, mining, processing, technology efficiency, beneficiation and environmental conservation.

Training in critical skills, such as mentoring, hazard identification and risk assessment, mineral resource management and other initiatives is provided through study assistance and various in-house programmes. In FY19, 109 people (FY18:106) attended critical skills training.



*Tshepong Operations*

The various training and skills development programmes conducted are summarised below:

<b>Leadership development</b>	Initiated in FY18 in South Africa, the leadership development competency framework is part of the initiative to improve organisational efficiency and innovation, and includes training and development programmes aimed at improving leadership effectiveness across all levels, from supervisory to executive level. Since its inception, 395 employees have embarked on this leadership journey and 76% had completed the programme by the end of FY19 (FY18: 116 employees enrolled and 63% completed).
<b>Adult education and training</b>	<p>Adult education and training centres at our South African operations run full-time and part-time classes to ensure that employees are functionally literate and numerate to enable personal growth and promote transformation.</p> <p>In FY19, 337 (FY18: 493) employees and nine (FY18: five) community members attended adult education and training at a cost of R30 million or US\$2.1 million (FY18: R36 million or US\$2.8 million). The average pass rate has increased to 65%, compared to 57% reported in FY18.</p> <p>The part-time e-learning programme caters for 30% of all adult education and training learners. The centre has achieved a 67% pass rate for the two exams written during FY19.</p>
<b>Bursary programme</b>	On completion of their studies, student bursars can apply for Harmony's graduate development bursary programme. In all, 81 bursaries (FY18: 101) were awarded to students studying at tertiary institutions. Of the bursaries awarded in 2019, 75 (or 93%) of the students were from local communities and the remainder from the provinces in which we operate. The pass rate in the 2018 academic year was 90% (FY18: 89%). A highlight of FY19 was that four of our bursary students received awards as top-performing students at their respective tertiary institutions within the fields of medicine, engineering and social sciences.
<b>Bridging school</b>	<p>Harmony's bridging school supports mathematics and science at grade 12 level to assist school leavers improve their final results and gain admission to tertiary institutions. On successful completion of grade 12, some are awarded bursaries, while others apply for learnerships within the company.</p> <p>Since the school's inception in 1996, we have registered 470 students in all – 33 (or 7%) were awarded bursaries and 369 attended our learnership programme. The remaining students were appointed to permanent positions within Harmony.</p>
<b>Mathematics, science and language enhancement project</b>	Harmony recognises the need for learners to achieve excellent results in mathematics and physical science, and the important role teachers play. A dedicated project ensures that teachers with proven credentials and experience are appointed at schools in the communities near our Moab Khotsong operation, where most of the learners have disadvantaged backgrounds.
<b>Learnerships</b>	Harmony runs various formal learnership programmes in mining, engineering and ore reserve management. In FY19, 343 learners (FY18: 306) were enrolled at various stages in learnership programmes. Of the total number enrolled, 95 engineering learners and 34 mining learners completed their programmes in FY19 (FY18: 91 completed learnerships). Most of the learners will be appointed to positions available within the company.
<b>Internship and experiential programmes</b>	In support of our social and labour plans, we hosted 58 students (33 internships and 25 experiential trainees) during FY19 (FY18: 43 students – 18 interns and 25 experiential trainees).
<b>Social plan programme</b>	We continue to provide alternative skills training to employees, current and retrenched, through our social plan programme, which was facilitated by the framework agreement between Harmony and NUM in 2003. The training enables people to remain economically active beyond mining, cushioning the economic impact of unavoidable retrenchments or the loss of employment when mines reach the end of their lives.
<b>Portable skills development</b>	In FY19, 1 114 employees (FY18: 1 532) received portable skills training. Around 51% (FY18: 57%) were proxies (dependents of mine employees). The number of people being trained in portable skills has almost quadrupled in recent years. Over the past 10 years, Harmony has provided portable skills training to approximately 10 000 employees (and/or their proxies) in basic electrical work, end-user computing, basic welding, basic motor mechanics, clothing manufacture, furniture making, plumbing, bricklaying, animal production and mixed farming systems.

## Papua New Guinea

Workforce training at Hidden Valley in FY19 included:

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

# EMPLOYEE RELATIONS CONTINUED

## Our communities – training and development

Investing in our communities is a key aspect of our socio-economic approach. Considerable time and effort is dedicated to identifying community members who could benefit from bursaries, work experience, internships and the bridging school. Priority is given to local students. We are encouraged that we were able to provide permanent positions to five of the seven students who successfully completed their internship.

Our community skills development initiative, which began in FY17, is aimed at upskilling members of the community surrounding our operations. It creates a pool of trained community members who can be called on to fill appropriate vacancies at our operations.

The Welkom community training initiative launched in FY18. The first intake of 60 youths from local communities have all been transferred to various Free State operations for the competence portion of initial training.

## Mining Charter III: employment equity performance by category as at June 2019<sup>1</sup>

Occupation category	Historically disadvantaged persons		Historically disadvantaged females	
	Actual (%)	Target (%)	Actual (%)	Target (%)
Board	65	50	24	20
Top (executive) management	58	50	32	20
Senior management	52	60	28	25
Middle management	52	60	23	25
Junior management	63	70	17	30
Core and critical skills	68	60	N/A	N/A
Persons with disabilities	0.4	1.5	N/A	N/A

<sup>1</sup> Includes employees at Moab Khotsong operation

<sup>2</sup> Historically disadvantaged persons exclude white males and foreign nationals



Target 1 – training centre



## Employee engagement

In applying our “connectedness” value, we ensure that employees feel part of the Harmony family. For employees to be committed, productive and passionate about their jobs, they should feel valued, which in turn boosts morale, productivity and participation because they feel empowered to communicate openly. Regular employee engagement involves two-way communication with employees. Furthermore, suggestions made by employees are taken seriously and acted upon where applicable.

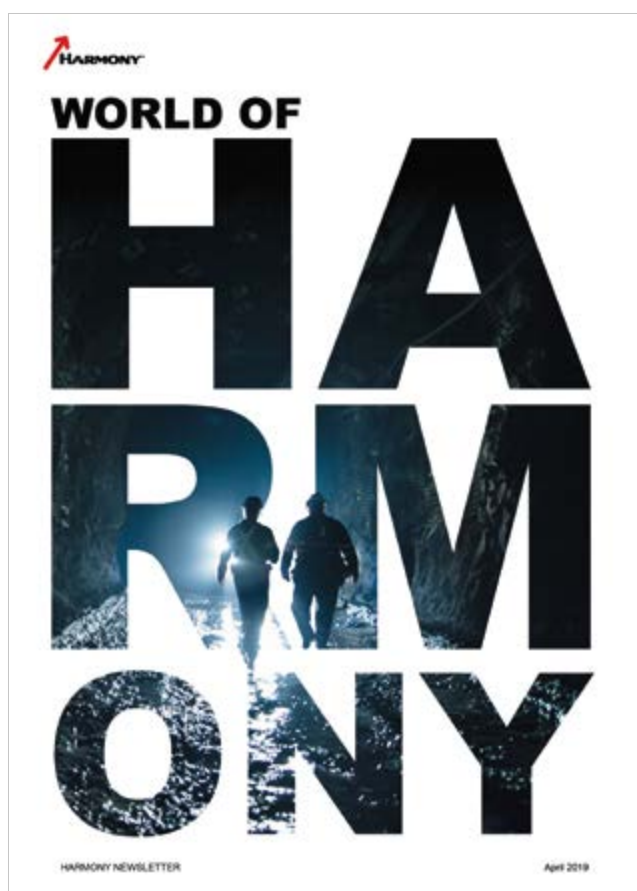
Our ongoing and interactive internal communications process is a platform for management and employee information sharing and engagement. This includes regular meetings with heads of departments, work groups and general manager engagement forums

(mass meetings and quarterly productivity meetings in South Africa, and monthly meetings at Hidden Valley in Papua New Guinea), as well as in-depth quarterly internal campaigns to drive important messages across the group, such as those relating to safety, ethics and wellness, among others. We also use printed material (posters, internal newsletters, memos and flyers) and digital media (email, mine television, intranet, website and text messaging).

A quarterly Harmony newsletter “World of Harmony” was launched in August 2018, highlighting among others, Harmony’s financial performance, events and community outreach.

Our chief executive officer communicates regularly with employees at meetings, during internal roadshows and by email.

## HARMONY CONNECT COMMUNICATION PLATFORM:





# EMPLOYEE RELATIONS CONTINUED

## EMPLOYEE BENEFITS IN SOUTH AFRICA

Below is a discussion of some of the benefits available to our workforce in South Africa. For more information on benefits offered to employees, see the [Remuneration report](#).

### Employee Share Ownership Scheme – South Africa



The Sisonke (isiXhosa for “we are together”) employee share ownership scheme (ESOP) was launched in February 2019. The scheme applies to approximately 30 700 non-managerial employees. Under the scheme, 6 700 000 ordinary shares were issued to the Sisonke ESOP Trust and 225 participation units to each eligible employee. The units will vest after three years (in 2022) and will convert into shares, which will then be sold and paid out to each beneficiary together with any dividends accumulated since allocation.

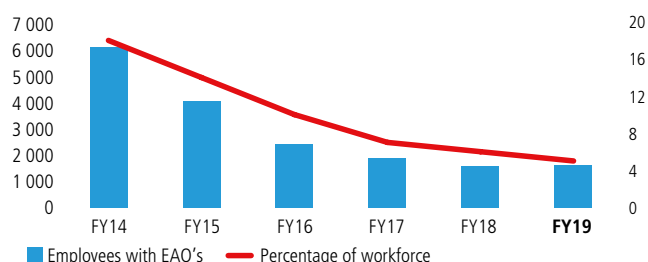
### Addressing employee financial indebtedness

Financial over-indebtedness is a scourge affecting a large section of our workforce, across most categories of employees. Six years ago, Harmony embarked on an extensive financial literacy training programme, focusing mainly on lower categories (semi-skilled and skilled employees) to enable employees to better manage their personal finances.

This programme, which has contributed to improved employee morale and engagement, included a review of the arrangements for employees placed under financial administration, as they were unable to service their debts. The review process found that the administration system was being abused with employees being made to pay exorbitant administration fees. Subsequently, a total of 113 employees’ accounts were removed from administration through legal court orders. Debt of more than R1.4 million, granted to employees, was written off by creditors.

A process to verify all new emolument attachment orders (garnishee orders) was also instituted before processing them through payroll. These initiatives have since yielded favourable results for employees and the company. The number of emolument attachment orders has reduced by 78% over the past five years and the level of employee indebtedness has also declined. A particular focus of this programme is the discontinuation of non-statutory payroll deductions and notifying employees about emolument attachment orders against their pay. The legal validity of these attachment orders is verified before they are actioned. A total of 113 administration orders were rescinded during the course of FY19.

### Decrease in emolument attachment orders



Harmony spent approximately R5 million on programmes to alleviate employee indebtedness during FY19. In all, 23 181 employees or 74% of the workforce (FY18: 20 851 or 78%) have attended the financial literacy and debt counselling programme since its launch in September 2013.

The average debt-to-income ratio of employees has also drastically declined, from 17% to 3% over the past five-year period, a result of the restructuring of accounts.

### Promoting home ownership

As part of our home ownership strategy, Harmony is selling company-owned properties to employees at prices below market value. During FY19, 53 company properties were purchased by employees.

In addition, a housing subsidy of R20 000 per person was granted to 20 individual employees purchasing houses from Eddie Modise Properties, a third party renting houses to our employees on special arrangements in Welkom.

In all, 112 employees benefited from a home renovation scheme set up in terms of our social and labour plan at Kalgold with each employee receiving R20 000 for home improvements. Around R3 million (US\$0.2 million) was spent on the scheme during FY19. Another 110 employees will benefit from the scheme in the next financial year.

To further facilitate home ownership, the company participates in and supports the pension-backed home loan scheme negotiated for the industry by the Minerals Council. The number of employees participating in the scheme in FY19 declined to 1 110 (FY18: 1 231) as some had paid off their home loans.

### Accommodation and living conditions

All employees residing in our hostels are accommodated in single rooms.

There were 7 946 employees and 61 contractors residing in Harmony hostels in FY19, and 2 544 employees were residing in company-owned houses with their families. A total of R556 million was paid to employees residing off company premises in the form of a living out allowance.

### Freedom of association, labour disputes and strikes

At Harmony, employees and contractors have the right to freedom of association. We participate in collective bargaining processes and adhere to the collective agreements in each country. We strive for honest, two-way discussions through collective bargaining.

The employee relations policy framework formalising labour union organisational recognition rights at each operation was implemented in FY19.

## South Africa

The employee relations environment was stable over the past financial year with no unprotected strike action.

At our South African operations, Harmony recognises five labour unions with representation in FY19 as follows: NUM 58% (FY18: 59%), AMCU 24% (FY18: 24%), UASA 6% (FY18: 6%), Solidarity 3% (FY18: 3%) and NUMSA 4% (FY18: 2%). Some 5% (FY18: 6%) of employees did not belong to a union.

In the fourth quarter of FY19, Harmony was advised that a co-operation agreement had been signed by NUM, Solidarity and UASA which would form a coalition at Harmony with joint representation, as provided by the Labour Relations Act. Combined, this coalition has representation of 67%.

Our multi-union environment promotes co-existence, inclusion and collaboration. In addition to quarterly regional meetings with unions, we also encourage proactive and robust engagement to address particular issues. As communication is ongoing at all levels, we are in daily contact with full-time stewards through our general managers and human resources leaders who interact regularly at union branch level and with shaft committees. Our regional managers hold regular meetings with regional union structures.

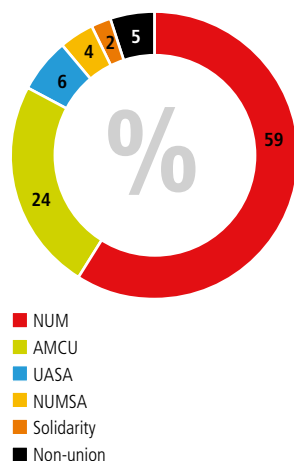
We endeavour to maintain peace and stability in our workforce at all times. We want our employees to feel and be safe at work.

To mitigate the risk of labour disputes, we engage frequently with organised labour at mine and company level in addition to direct engagement with employees. We are proactive in addressing employees' queries through established structures and processes.

### Gold wage negotiations

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 Minerals Council. The three-year wage settlement reached on 3 October 2018 with the unions representing the majority of employees at Harmony, and extended to all employees within the bargaining unit, remains in place.

## Union representation at the South African operations as at 30 June 2019



## Papua New Guinea

We engage continuously with all stakeholders, including employees, contractors, and national, provincial and local government, as well as landowners and regulators.

There are no active unions at Hidden Valley where industrial relations is currently overseen by an employee representative committee. Wage increases are agreed by way of consultation with workers through a joint forum of management and the employee representative committee.

## Human rights

Respect for human rights is entrenched in and underpins our values. Human rights are specifically catered for in our human resource policies, charters and contracts of engagement. The human resources function and community engagement managers closely monitor our human rights performance at operational level.

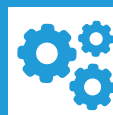
Harmony upholds the United Nations Global Compact's principles on human rights and labour. Following a survey of the company's policies, procedures, and labour practices in FY17, certain policy changes were undertaken, including internal communication campaigns on Harmony's disciplinary procedure and code of conduct.

With regard to unethical behaviour, Harmony has outsourced a 24-hour anonymous crime reporting line for employees, or any member of the public, to inform management of any suspicion of unethical behaviour, including crime, corruption and bribery. See [Corporate governance](#) for more information.

## OUTLOOK

Our focus in the coming year will be to address the new Mining Charter III targets, especially those relating to women in management and to their representation in junior management.

# OPERATIONAL PERFORMANCE

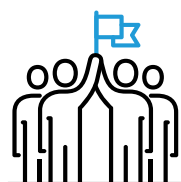


MANUFACTURED  
CAPITAL



The operational excellence strategic pillar is vital to delivery on our strategy – producing safe, profitable ounces and increasing margins.

## FY19 HIGHLIGHTS



Operational excellence aims to create a safe and enabling environment for delivery on our operational plans, reduced unit costs and improved productivity so as to maximise the generation of free cash flow.

### – Safety

- **Safety is an imperative**

- **Maintained our focus on safety risk management**, the monitoring of controls leadership and safe behaviour to embed a **proactive safety culture**

- Group lost-time injury frequency rate **improved** to 6.16 per million hours worked

### – Production

- **17% increase in production – Moab Khotson and Hidden Valley** boost production and cash flow

- **Production guidance achieved** in line with annual guidance – fourth consecutive year

- **2% increase** in underground recovered grade – seventh consecutive annual increase



Tshepong Operations

## Key aspects of operational excellence

### OPERATIONAL EXCELLENCE IS CORE TO GENERATING CASH FLOW

Our approach to improved operational performance is driven by our commitment to operational excellence and to ensuring safe, consistent, predictable and profitable production.

We aim to create an enabling environment for delivery on our operational plans, reduced unit costs and improved productivity so as to maximise the generation of free cash flow.

#### SAFETY AND HEALTH

- Live longer journey
- Risk management and focus on critical controls

#### INFRASTRUCTURE MANAGEMENT

- Improved insurance rating
- Fewer unplanned stoppages

#### MANAGEMENT OF GRADE AND MINING FLEXIBILITY

- No mining below cut-off grade
- Incorporating flexibility into our mining plans

#### ENVIRONMENTAL AND SOCIAL MANAGEMENT

- Sustainable and responsible environmental stewardship
- Community engagement and social upliftment

#### COST MANAGEMENT

- Focused cost management and project delivery
- Improved productivity

#### CAPITAL ALLOCATION

- Prioritised and focused capital allocation for growth and to sustain the business



# OPERATIONAL PERFORMANCE CONTINUED

## SAFETY AND OPERATIONAL RISK MANAGEMENT

**Safety** is an imperative. We are committed to ensuring safe production, to preventing fatalities and to embedding a proactive safety culture. Tragically, 11 of our colleagues lost their lives in separate mining-related incidents during FY19. Harmony embarked on a safety performance improvement journey in FY16 that has included the adoption of global best practice safety standards, including among others, a four-layered risk-based management approach, implementation of modernised safety systems, and an intensified focus on leadership development and training to address behaviour to achieve our goal of zero fatalities. We have seen improvements in FY19 with the group's lost-time injury frequency rate improving to 6.16 (6.26 in FY18) and the group fatal injury frequency rate improving to 0.13 (0.16 in FY18) (per 1 million hours worked). Refer to *Safety and health* for further details.

**Managing operational risks:** Operational risk management is integral to our business and entails managing risks effectively while working safely and being proactive. Risk management helps to ensure that all supporting systems are functioning efficiently. Safety hazards and operational business risks are identified and dealt with continuously at each of our operations.

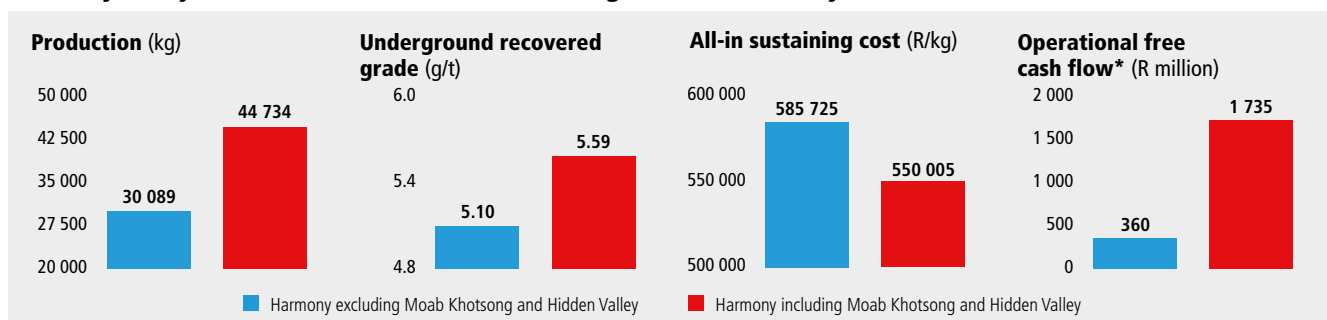
## WHAT WE DID IN FY19

In line with our strategy, both annual gold production and cash flows were boosted by the inclusion of a full year of production from Moab Khotson and Hidden Valley, as illustrated in the graphs below.

In FY19, Harmony increased production by 17% to 1.438Moz of gold (FY18: 1.228Moz) and achieved a 2% increase in underground grade mined to 5.59g/t (FY18: 5.48g/t).

Harmony achieved an all-in sustaining unit cost of R550 005/kg (US\$1 207/oz), an 8% increase year on year, due largely to increases in salary and wages and Eskom electricity tariffs, among others, and lower production from the Tshepong Operations in FY19.

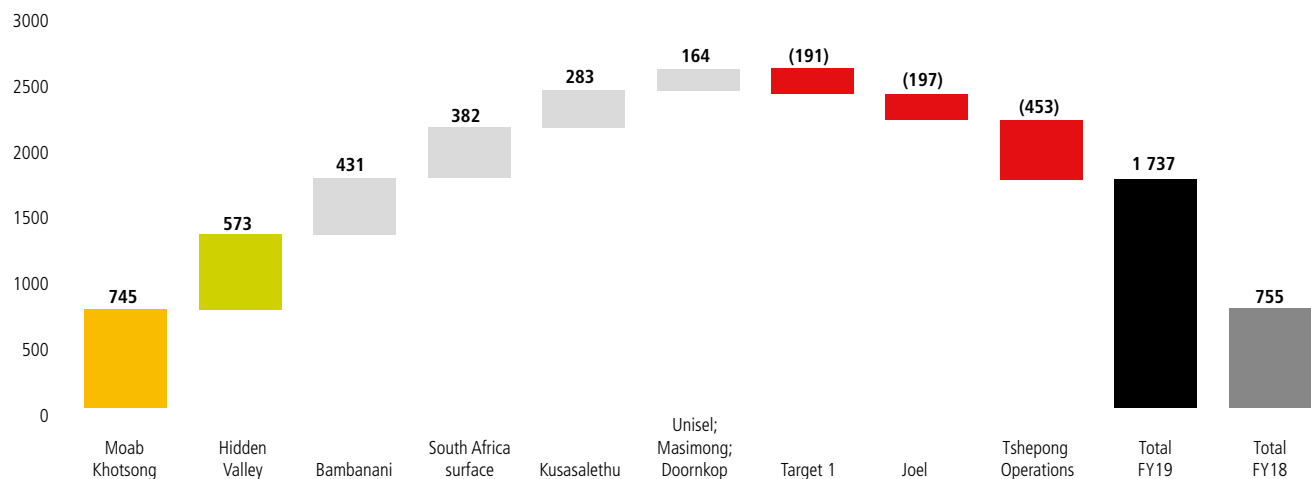
## Harmony today – with and without Moab Khotson and Hidden Valley



## Operating free cash flow

Harmony is focused on generating operating free cash flow\*. In FY19, Moab Khotson and Hidden Valley proved the merits of our investment strategy and were the largest contributors to operational free cash flow.

## FY19 operating free cash flow\* (R million)



\* Operating free cash flow = Revenue – cash operating cost – capital expenditure +/- impact of run of mine (ROM) costs as per operating results

## Performance at selected operations FY19:

**Moab Khotsong:** Recorded gold production of 7 928kg (254 891oz) at an average recovered grade of 8.17g/t for the first full year in which this operation was included in our portfolio.

**Hidden Valley:** Excellent safety performance, good operational momentum and disciplined cost management contributed to gold production of 6 222kg (200 042oz), generating operating free cash flow of R573 million (US\$40 million) at a margin of 16%. Stripping of the cutbacks will continue for the next two and a half years to enable delivery of an average all-in sustaining cost of less than US\$950/oz over the life of mine.

**Tshepong Operations:** Gold production decreased by 15% to 7 967kg (256 146oz), due to a 10% decrease in the recovered grade to 4.94g/t and a 6% decrease in tonnes milled. The performance was impacted mainly by a lack of flexibility, a result of the decline in the availability of stoping panels to mine. Post year end, we expect improvements in the mine's overall performance, following focused stoping development, and an improvement in overall mining and grade discipline.

**Joel:** Gold production decreased by 4% to 1 567kg (50 379oz), as a result of a 6% decrease in tonnes milled to 429 000t. Grade increased by 1% to 3.65g/t. The Joel decline project is nearing completion and an increase in both production and grade is expected in FY20.

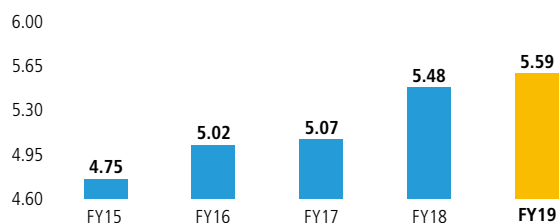
**Target 1:** Gold production decreased by 7% to 2 653kg (85 296oz) due to a 14% decrease in tonnes milled to 588 000t, partially offsetting the 7% increase in recovered grade to 4.51g/t. A capital efficiency project to move the ore and rock crusher, associated mining activities and services closer to the working areas is underway to improve the overall efficiency and productivity of the mining circuit at Target 1.

Details of performance by each operation are provided in the document, *Operations 2019* available online at [www.har.co.za](http://www.har.co.za).

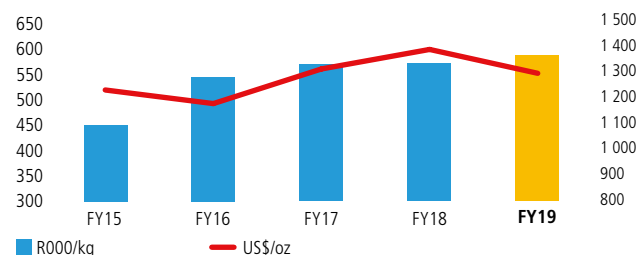


Unisel

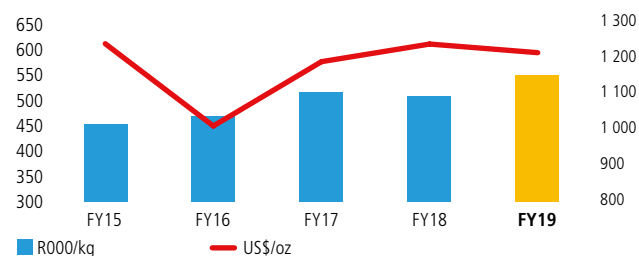
## Annual underground recovered grade (g/t)



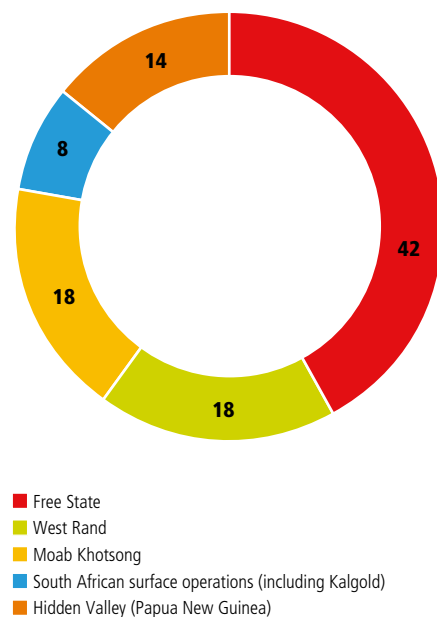
## Average annual gold price received



## Annual all-in sustaining costs



## Production by region



■ Free State  
■ West Rand  
■ Moab Khotsong  
■ South African surface operations (including Kalgold)  
■ Hidden Valley (Papua New Guinea)

# OPERATIONAL PERFORMANCE CONTINUED



Tshepong Operations

## FY20 OUTLOOK

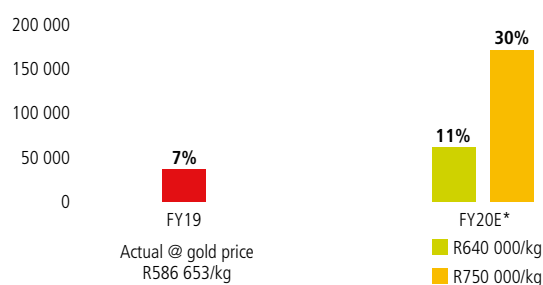
### Operations geared to take advantage of higher gold prices

In the next financial year (FY20), we plan to produce approximately 1.46Moz of gold at an all-in sustaining unit cost of R579 000/kg.

As price takers, we aim to control what we can – safety, costs and production. Harmony has a mixed portfolio of assets which are highly leveraged operationally to the gold price. Operational excellence – which includes safety – will remain a key focus area to ensure delivery on our strategy to increase margins and to position our operations to take full advantage of a rising gold price environment.

Harmony's operational gearing is illustrated in the graph below:

### All-in sustaining cost margin: scenarios at varying gold prices (R/kg)



\* FY20E based on guidance assumptions: production of 1.46Moz at an all-in sustaining cost of R579 000/kg (including impact of gold hedge)

### Key focus areas and actions FY20:

- Improve safety focus and performance at all operations
- Meet all operational targets and generate free cash flow
- Improve operating performance at Tshepong Operations
- Increase focus on cost management and reduce unit cost by improving safety performance, delivering on our production plans, and increasing the underground recovered grade and the productivity of our mining teams

## FY20 production and capital guidance

Operation	Production (oz)	Capital expenditure <sup>1,2</sup>		Life of mine (years)
		(Rm)	(US\$m)	
Tshepong operations	290 000	1 083	77	19
Moab Khotsoeng	246 000	730	52	9
Bambanani	77 000	63	4	4
Doornkop	113 000	372	26	17
Joel	61 000	164	12	10
Target 1	84 000	408	29	7
Kusasaletu	169 000	285	20	5
Masimong	69 000	25	2	1
Unisel	32 000	11	1	1
<b>Underground operations – total<sup>3</sup></b>	<b>1 141 000</b>	<b>3 141</b>	<b>223</b>	
South African surface operations (tailings and waste rock dumps)	87 000	34	2	14+
Kalgold	42 000	20	1	12
Hidden Valley <sup>4</sup>	190 000	1 521	108	4
<b>Total</b>	<b>~1.460 Moz</b>	<b>4 716</b>	<b>334</b>	

<sup>1</sup> Excludes Wafi-Golpu

<sup>2</sup> At an exchange rate of R14.11/US\$

<sup>3</sup> At an underground recovered grade of ~5.96g/t

<sup>4</sup> Includes deferred stripping





Moab Khotsong

NO SELF  
PROPELLED  
VEHICLE  
BEYOND  
THIS POINT



# MINERAL RESOURCES AND RESERVES – A SUMMARY



## Guaranteeing a long-term pipeline of resources and reserves will help to ensure Harmony's long-term sustainability.

Harmony's statement of mineral resources and mineral reserves as at 30 June 2019 is produced in accordance with the South African Code for the Reporting of Mineral Resources and Mineral Reserves (SAMREC), and section 12.11 of the JSE Listings Requirements (as updated from time to time). Harmony now declares all its mineral resources and mineral reserves in accordance with and in compliance with the SAMREC code. This is a change from 2018 when Papua New Guinea resources and reserves were declared compliant with the JORC code. This change is to align Harmony's corporate reporting.

Mineral resources are reported inclusive of mineral reserves. Detailed mineral resource and reserve statements are presented in the report entitled Mineral Resources and Mineral Reserves 2019, which is available at [www.har.co.za/19](http://www.har.co.za/19).

### INDEPENDENT REVIEW

Harmony's South African mineral resources and reserves at Doornkop as well as the group SAMREC statement were independently reviewed by The Mineral Corporation for compliance to SAMREC. Moab Khotso's and the Wafi-Golpu Joint Venture's mineral reserves and resources were reviewed by SRK and Hidden Valley's mineral reserves and resources were reviewed by consulting Derisk Geomining Consultants.

### LEGAL ENTITLEMENT TO MINERALS REPORTED

Harmony's South African operations operate under new order mining rights in terms of the Minerals and Petroleum Resources Development of Act (MPRDA) of 2002 (Act No. 28, of 2002).

In Papua New Guinea, Harmony operates under the Independent State of Papua New Guinea Mining Act 1992. All required operating permits have been obtained and are in good standing. The legal tenure of each operation and project has been verified to the satisfaction of the accountable competent person.

### ENVIRONMENTAL MANAGEMENT AND FUNDING

Harmony's environmental strategy aims to optimise our environmental performance by managing our environmental impacts, focusing on effective risk controls, reducing environmental liabilities, ensuring responsible stewardship of our products within our scope of influence, complying with environmental legislation and regulations.

Details relating to the provision for environmental rehabilitation and funding can be found in note 25 in Harmony's audited annual financial statements that are presented in a separate report, the Financial Report 2019. This is also available online at [www.har.co.za](http://www.har.co.za).

### ASSUMPTIONS

In converting mineral resources to mineral reserves, the following commodity prices and exchange rates were applied:

- A gold price of US\$1 290/oz
- An exchange rate of R/US\$14.11
- The above parameters resulted in a rand gold price of R585 000/kg for the South African assets
- The Hidden Valley mine and the Wafi-Golpu project used commodity prices of US\$1 290/oz Au, US\$17.00/oz Ag, US\$9.00/lb Mo and US\$3.00/lb Cu at an exchange rate of A\$1.36 per US\$
- Gold equivalent ounces are calculated assuming: US\$1 290/oz Au, US\$3.00/lb Cu and US\$17.00/oz Ag, and 100% recovery for all metals

Note:

**Au** = gold

**Cu** = copper

**Ag** = silver

**Mo** = molybdenum

### Permitting for the Wafi-Golpu project

Laws governing mineral rights affect our business and could impose significant costs and burdens. Mineral rights in the countries in which we operate could be altered, suspended or cancelled for a variety of reasons, including breaches in obligations in relation to these mining rights.

The delay in the permitting for the Wafi-Golpu joint venture project and changes to the mining legislation in Papua New Guinea may impact our resource and reserve estimates. For further details on this, see [page 116](#) in Exploration and projects.



Kalgold

## MINERAL RESOURCES AND MINERAL RESERVES – SUMMARY

Harmony's total attributable gold equivalent mineral resource of 117.3Moz was declared as at 30 June 2019, a 0.4% decrease year on year from the 117.8Moz declared on 30 June 2018. Gold contained in the mineral resources at the South African operations represented 61% of Harmony's total, with the Papua New Guinea assets representing 39% of total gold and gold equivalent mineral resources as at 30 June 2019.

Harmony's total attributable gold and gold equivalent mineral reserves amounted to 36.5Moz of gold, a 0.8% decrease on the 36.8Moz declared at 30 June 2018. Gold reserve ounces at our South African operations accounted for 47% while the Papua New Guinea gold and gold equivalent ounces represented 53% of Harmony's total mineral reserves as at 30 June 2019.

### South Africa



#### Underground operations

Harmony's mineral resources at the South African underground operations as at 30 June 2019 totalled 60.6Moz (210.4Mt at 8.96g/t), a decrease of 1.1% year on year from the 61.3Moz (216.7Mt at 8.79g/t) declared as at 30 June 2018.

Mineral reserves at the South African underground operations as at 30 June 2019 totalled 10.6Moz (56.7Mt at 5.83g/t), an increase of 4.9% year on year from the 10.1Moz (52.4Mt at 6.02g/t) declared as at 30 June 2018. The increase is due mainly to the mineral reserves added from Moab Khotso, Tshepong and Doornkop.



#### Surface operations (including Kalgold)

Mineral resources at Harmony's South African surface operations as at 30 June 2019 were 10.8Moz (1 109.5Mt at 0.30g/t). The 14.6% increase was mainly due to exploration drilling at Kalgold.

Mineral reserves at the South African surface operations as at 30 June 2019 were 6.6Moz (808.8Mt at 0.26g/t), a decrease of 2.0% due to depletion.

### Papua New Guinea



#### Operations

Attributable gold and gold equivalent mineral resources at our Papua New Guinea operations as at 30 June 2019 were 45.9Moz, a decrease of 2.5% year on year from the 47.1Moz declared as at 30 June 2018. This decrease is mainly due to the new resource model applied at Hidden Valley, changes in the metal price and depletion.

Attributable gold and gold equivalent mineral reserves as at 30 June 2019 are 19.3Moz, a decrease of 3.4% year on year from the 19.9Moz declared as at 30 June 2018.



Doornkop gold pour

# MINERAL RESOURCES AND RESERVES – A SUMMARY

CONTINUED

## MINERAL RESOURCES

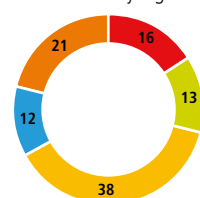
As at 30 June 2019, attributable gold equivalent mineral resources were estimated at 117.3Moz, down from 117.8Moz in June 2018. The following table shows the year-on-year reconciliation for the mineral resources.

### Mineral resource reconciliation – gold and gold equivalents

	Kg (000)	Moz
June 2018 – Gold and gold equivalents	3 664	117.8
<b>Changes during FY19</b>		
Mined	(62)	(2.0)
Additions at Kalgold, Tshepong Operations and Joel	65	2.1
Gold equivalents	(19)	(0.6)
<b>June 2019 – Gold and gold equivalents</b>	<b>3 649</b>	<b>117.3</b>

### Mineral resources – gold (excluding gold equivalents) (%)

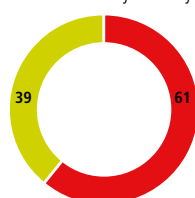
Contribution by region



- West Rand
- Klerksdorp goldfield
- Free State underground
- Surface sources
- Papua New Guinea

### Mineral resources – gold and gold equivalents (%)

Contribution by country



- South Africa
- Papua New Guinea

## MINERAL RESERVES

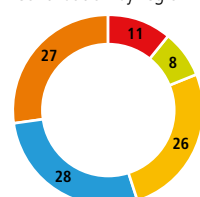
As at 30 June 2019, Harmony's attributable gold equivalent mineral reserves were estimated at 36.5Moz, down from 36.8Moz in June 2018. The year-on-year mineral reserve reconciliation is shown below.

### Mineral reserve reconciliation – gold and gold equivalents

	Kg (000)	Moz
June 2018 – Gold and gold equivalents	1 146	36.8
<b>Changes during FY19</b>		
Mined	(48)	(1.5)
Additions at Tshepong Operations, Moab Khotson and Doornkop	47	1.5
Gold equivalents	(9)	(0.3)
<b>June 2019 – Gold and gold equivalents</b>	<b>1 136</b>	<b>36.5</b>

### Mineral reserves – gold (excluding gold equivalents) (%)

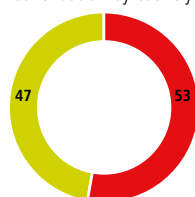
Contribution by region



- West Rand
- Klerksdorp goldfield
- Free State underground
- Surface sources
- Papua New Guinea

### Mineral reserves – gold and gold equivalents (%)

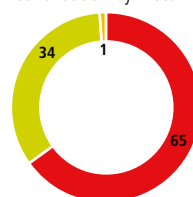
Contribution by country



- South Africa
- Papua New Guinea

### Mineral reserves – gold and gold equivalents (%)

Contribution by metal



- Gold
- Copper
- Silver

## COMPETENT PERSON'S DECLARATION

In South Africa, an ore reserve manager is appointed at each operation to take responsibility for the compilation and reporting of their operations' mineral resources and mineral reserves. In Papua New Guinea, competent persons are appointed for the mineral resources and mineral reserves for specific projects and operations.

The mineral resources and mineral reserves reported are based on information compiled by the following competent persons, as at 30 June 2019.

### Mineral resources and mineral reserves of South Africa:

#### Jaco Boshoff

BSc (Hons), MSc, MBA

Who has 24 years' relevant experience and is registered with the South African Council for Natural Scientific Professions (SACNASP), is a member of the South African Institute of Mining and Metallurgy (SAIMM) and of the Geological Society of South Africa (GSSA).

Mr Boshoff is Harmony's Lead Competent Person.

#### Physical address:

Randfontein Office Park  
Corner Main Reef Road and Ward Avenue  
Randfontein  
South Africa

#### Postal address:

PO Box 2  
Randfontein  
1760  
South Africa

### Mineral resources and mineral reserves of Papua New Guinea:

#### Gregory Job

BSc, MSc

Who has 31 years' relevant experience and is a member of the Australian Institute of Mining and Metallurgy (AusIMM).

#### Physical address:

Level 2  
189 Coronation Drive  
Milton, Queensland 4064  
Australia

#### Postal address:

PO Box 1562  
Milton, Queensland 4064  
Australia

Both these competent persons, who are full-time employees of Harmony, consent to the inclusion in this report of the information in the form and context in which it appears.

## Administrative information for professional organisations

### Australasian Institute of Mining and Metallurgy (AusIMM)

Postal address: PO Box 660, Carlton South,  
Vic 3053, Australia  
Telephone: +61 3 9658 6100  
Facsimile: +61 3 9662 3662  
Website: [www.ausimm.com.au](http://www.ausimm.com.au)

### South African Council for Natural Scientific Professions (SACNASP)

Postal address: Private Bag X540, Silverton, 0127, Gauteng,  
South Africa  
Telephone: +27 12 841 1075  
Facsimile: +27 86 206 0427  
Website: [www.sacnasp.org.za](http://www.sacnasp.org.za)

### Southern African Institute of Mining and Metallurgy (SAIMM)

Postal address: PO Box 61127, Marshalltown, 2107, Gauteng,  
South Africa  
Telephone: +27 11 834 1273/7  
Facsimile: +27 11 838 5923/8156  
Website: [www.saimm.co.za](http://www.saimm.co.za)

### Geological Society of South Africa (GSSA)

CSIR Miningtek  
Carlow and Rustenburg roads  
Melville, Johannesburg  
South Africa  
Website: [www.gssa.org.za](http://www.gssa.org.za)

Details of the professional registrations of our competent persons can be obtained from the company secretary at:  
[companysecretariat@harmony.co.za](mailto:companysecretariat@harmony.co.za)



# MINERAL RESOURCES AND RESERVES – A SUMMARY

CONTINUED

## MINERAL RESOURCE STATEMENT – ESTIMATES AT 30 JUNE 2019

Operations	Measured resources			Indicated resources			Inferred resources			Total mineral resources		
	Tonnes (Mt)	Grade (g/t)	Gold (000oz)	Tonnes (Mt)	Grade (g/t)	Gold (000oz)	Tonnes (Mt)	Grade (g/t)	Gold (000oz)	Tonnes (Mt)	Grade (g/t)	Gold (000oz)
<b>GOLD</b>												
<b>SOUTH AFRICA UNDERGROUND</b>												
<b>Free State</b>												
Tshepong Operations	24.2	11.19	8 716	12.7	10.39	4 236	36.2	10.13	11 797	73.1	10.53	24 749
Bambanani	0.6	15.96	318	–	–	–	–	–	–	0.6	15.96	318
Unisel	0.6	8.22	156	0.2	8.62	53	–	–	–	0.8	8.32	209
Joel	4.1	7.69	1 019	3.9	8.29	1 040	7.1	5.18	1 190	15.2	6.66	3 249
Masimong	2.4	8.55	659	0.3	7.86	84	–	–	–	2.7	8.47	743
Target 1	7.2	7.69	1 783	4.8	6.83	1 059	3.9	6.00	750	15.9	7.02	3 592
Target 3	0.6	9.19	178	2.9	10.17	965	1.2	8.66	340	4.8	9.66	1 483
<b>Total</b>	<b>39.8</b>	<b>10.03</b>	<b>12 829</b>	<b>24.9</b>	<b>9.30</b>	<b>7 436</b>	<b>48.5</b>	<b>9.03</b>	<b>14 077</b>	<b>113.1</b>	<b>9.44</b>	<b>34 342</b>
<b>West Rand</b>												
Doornkop South Reef	4.5	8.00	1 150	4.7	7.67	1 148	4.2	7.89	1 074	13.4	7.85	3 373
Doornkop Main Reef	0.1	5.38	14	0.05	5.51	8	0.02	5.32	3	0.1	5.41	25
Doornkop Kimberley Reef	18.1	3.36	1 957	12.1	3.15	1 226	10.1	3.28	1 066	40.3	3.28	4 249
Kusasaletu	2.8	11.40	1 037	15.6	8.73	4 379	3.8	8.70	1 051	22.2	9.07	6 467
<b>Total</b>	<b>25.5</b>	<b>5.07</b>	<b>4 158</b>	<b>32.4</b>	<b>6.49</b>	<b>6 762</b>	<b>18.1</b>	<b>5.48</b>	<b>3 194</b>	<b>76.0</b>	<b>5.77</b>	<b>14 133</b>
<b>Klerksdorp goldfield</b>												
Moab Khotsoong	3.5	18.29	2 037	11.9	16.40	6 257	5.9	20.15	3 840	21.3	17.75	12 134
<b>South Africa underground – total</b>	<b>68.7</b>	<b>8.61</b>	<b>19 024</b>	<b>69.2</b>	<b>9.20</b>	<b>20 454</b>	<b>72.5</b>	<b>9.05</b>	<b>21 111</b>	<b>210.4</b>	<b>8.96</b>	<b>60 590</b>
<b>SOUTH AFRICA SURFACE</b>												
<b>Kraaipan Greenstone Belt</b>												
Kalgold open pit	14.6	0.79	371	66.5	0.92	1 971	8.7	1.05	293	89.8	0.91	2 636
Kalgold tailings dam	–	–	–	–	–	–	23.8	0.26	201	23.8	0.26	201
<b>Total</b>	<b>14.6</b>		<b>371</b>	<b>66.5</b>		<b>1 971</b>	<b>32.5</b>		<b>494</b>	<b>113.6</b>		<b>2 837</b>
<b>Free State surface</b>												
Phoenix	55.8	0.27	490	–	–	–	–	–	–	55.8	0.27	490
St Helena	191.3	0.27	1 656	–	–	–	–	–	–	191.3	0.27	1 656
Central Plant	–	–	–	60.5	0.27	517	–	–	–	60.5	0.27	517
Other:												
– Waste rock dumps	–	–	–	3.9	0.51	64	17.2	0.43	235	21.1	0.44	299
– Tailings	–	–	–	561.6	0.22	4 032	15.5	0.19	94	577.1	0.22	4 126
<b>Total</b>	<b>247.2</b>	<b>0.27</b>	<b>2 147</b>	<b>626.0</b>	<b>0.23</b>	<b>4 613</b>	<b>32.6</b>	<b>0.31</b>	<b>329</b>	<b>905.8</b>	<b>0.24</b>	<b>7 089</b>
<b>Klerksdorp goldfield</b>												
Mispah	–	–	–	73.3	0.30	710	–	–	–	73.3	0.30	710
Kop Paydam	11.0	0.20	72	–	–	–	–	–	–	11.0	0.20	72
Moab MOD	–	–	–	5.9	0.41	77	–	–	–	5.9	0.41	77
<b>Total</b>	<b>11.0</b>	<b>0.20</b>	<b>72</b>	<b>79.1</b>	<b>0.31</b>	<b>787</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>90.1</b>	<b>0.30</b>	<b>859</b>
<b>South Africa surface – total</b>	<b>272.8</b>	<b>0.30</b>	<b>2 589</b>	<b>771.6</b>	<b>0.30</b>	<b>7 371</b>	<b>65.1</b>	<b>0.39</b>	<b>824</b>	<b>1 109.5</b>	<b>0.30</b>	<b>10 784</b>
<b>SOUTH AFRICA – TOTAL (underground and surface)</b>	<b>341.5</b>		<b>21 614</b>	<b>840.8</b>		<b>27 825</b>	<b>137.6</b>		<b>21 935</b>	<b>1 319.9</b>		<b>71 374</b>
<b>PAPUA NEW GUINEA</b>												
Hidden Valley	2.7	0.96	85	64.5	1.53	3 169	1.5	1.06	53	68.8	1.50	3 307
Hamata	0.01	2.25	1	2.0	1.90	122	0.2	1.52	10	2.2	1.86	133
Wafi <sup>1</sup>	–	–	–	54.0	1.65	2 800	20.0	1.28	800	74.0	1.55	3 600
Golpu <sup>1</sup>	–	–	–	345.0	0.71	8 000	70.0	0.63	1 400	410.0	0.71	9 400
Nambonga <sup>1</sup>	–	–	–	–	–	–	20.0	0.82	500	20.0	0.82	500
Kili Teke	–	–	–	–	–	–	237.0	0.24	1 810	237.0	0.24	1 810
<b>PAPUA NEW GUINEA – TOTAL</b>	<b>2.8</b>	<b>0.97</b>	<b>86</b>	<b>465.5</b>	<b>0.94</b>	<b>14 091</b>	<b>348.7</b>	<b>0.41</b>	<b>4 573</b>	<b>812.0</b>	<b>0.72</b>	<b>18 750</b>
<b>HARMONY – TOTAL</b>	<b>344.3</b>		<b>21 699</b>	<b>1 306.3</b>		<b>41 916</b>	<b>486.3</b>		<b>26 509</b>	<b>2 131.9</b>		<b>90 124</b>

**MINERAL RESOURCE STATEMENT – ESTIMATES AT 30 JUNE 2019** continued

Operations	Measured resources		Indicated resources		Inferred resources		Total mineral resources	
	Tonnes (Mt)	Gold (000oz)	Tonnes (Mt)	Gold (000oz)	Tonnes (Mt)	Gold (000oz)	Tonnes (Mt)	Gold (000oz)
<b>GOLD EQUIVALENTS <sup>2</sup></b>								
<b>Silver</b>								
Hidden Valley	2.7	24	64.5	713	1.5	16	68.8	753
<b>Copper</b>								
Golpu <sup>1</sup>	–	–	345.0	19 150	70.0	2 960	410.0	22 110
Nambonga <sup>1</sup>	–	–	–	–	20.0	240	20.0	240
Kili Teke	–	–	–	–	237.0	4 108	237.0	4 108
<b>Total</b>	<b>–</b>	<b>–</b>	<b>345.0</b>	<b>19 150</b>	<b>327.0</b>	<b>7 308</b>	<b>667.0</b>	<b>26 458</b>
<b>Silver and copper – total</b>	<b>2.7</b>	<b>24</b>	<b>409.5</b>	<b>19 863</b>	<b>328.5</b>	<b>7 334</b>	<b>735.7</b>	<b>27 211</b>
<b>PAPUA NEW GUINEA – TOTAL (including gold equivalents)</b>	<b>2.8</b>	<b>110</b>	<b>465.5</b>	<b>33 954</b>	<b>348.7</b>	<b>11 897</b>	<b>812.0</b>	<b>45 961</b>
<b>HARMONY – TOTAL (including gold equivalents)</b>	<b>344.3</b>	<b>21 724</b>	<b>1 306.3</b>	<b>61 779</b>	<b>486.3</b>	<b>33 833</b>	<b>2 131.9</b>	<b>117 335</b>

**OTHER METALS**
**PAPUA NEW GUINEA**

	Tonnes (Mt)	Grade (g/t)	Ag (000oz)	Tonnes (Mt)	Grade (g/t)	Ag (000oz)	Tonnes (Mt)	Grade (g/t)	Ag (000oz)	Tonnes (Mt)	Grade (g/t)	Ag (000oz)
<b>Silver</b>												
Hidden Valley	2.7	21.13	1 863	64.5	26.12	54 151	1.5	25.21	1 256	68.8	25.90	57 270
Golpu <sup>1</sup>	–	–	–	345.0	1.29	14 000	70.0	1.06	2 300	410.0	1.28	16 500
<b>Total</b>	<b>2.7</b>	<b>21.13</b>	<b>1 863</b>	<b>409.5</b>	<b>5.21</b>	<b>68 151</b>	<b>71.5</b>	<b>1.62</b>	<b>3 556</b>	<b>478.8</b>	<b>4.82</b>	<b>73 770</b>
	Tonnes (Mt)	Grade (%)	Cu (Mlb)	Tonnes (Mt)	Grade (%)	Cu (Mlb)	Tonnes (Mt)	Grade (%)	Cu (Mlb)	Tonnes (Mt)	Grade (%)	Cu (Mlb)
<b>Copper</b>												
Golpu <sup>1</sup>	–	–	–	345.0	1.00	8 250	70.0	0.85	1 250	410.0	1.00	9 500
Nambonga <sup>1</sup>	–	–	–	–	–	–	20.0	0.20	88	20.0	0.20	88
Kili Teke	–	–	–	–	–	–	237.0	0.34	1 767	237.0	0.34	1 767
<b>Total</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>345.0</b>	<b>1.00</b>	<b>8 250</b>	<b>327.0</b>	<b>0.44</b>	<b>3 015</b>	<b>667.0</b>	<b>0.77</b>	<b>11 355</b>
	Tonnes (Mt)	Grade (lb/t)	Mo (Mlb)	Tonnes (Mt)	Grade (lb/t)	Mo (Mlb)	Tonnes (Mt)	Grade (lb/t)	Mo (Mlb)	Tonnes (Mt)	Grade (lb/t)	Mo (Mlb)
<b>Molybdenum</b>												
Golpu <sup>1</sup>	–	–	–	345.0	94	72	70.0	72	11	410.0	90	83
Kili Teke	–	–	–	–	–	–	237.0	168	88	237.0	168	88
<b>Total</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>345.0</b>	<b>94</b>	<b>72</b>	<b>307.0</b>	<b>146</b>	<b>99</b>	<b>647.0</b>	<b>119</b>	<b>171</b>

**SOUTH AFRICA**

	Tonnes (Mt)	Grade (kg/t)	U <sub>3</sub> O <sub>8</sub> (Mlb)	Tonnes (Mt)	Grade (kg/t)	U <sub>3</sub> O <sub>8</sub> (Mlb)	Tonnes (Mt)	Grade (kg/t)	U <sub>3</sub> O <sub>8</sub> (Mlb)	Tonnes (Mt)	Grade (kg/t)	U <sub>3</sub> O <sub>8</sub> (Mlb)
<b>Uranium</b>												
Free State surface	–	–	–	184.7	0.10	41	–	–	–	184.7	0.10	20
Klerksdorp goldfield surface	–	–	–	84.3	0.12	23	–	–	–	84.3	0.12	23
Moab Khotsong underground	–	–	–	15.3	0.83	28	5.9	0.72	9	21.3	0.80	38
<b>Total</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>284.2</b>	<b>0.15</b>	<b>92</b>	<b>5.9</b>	<b>0.72</b>	<b>9</b>	<b>290.2</b>	<b>0.16</b>	<b>101</b>

<sup>1</sup> Harmony's 50% attributable portion

<sup>2</sup> Gold equivalent ounces are calculated assuming prices of US\$1 290/oz for gold, US\$3.00/lb for copper and US\$17.00/oz for silver with 100% recovery for all metals

Rounding of numbers may result in slight computational discrepancies

Note: 1 tonne = 1 000kg = 2 204lb

1 troy ounce = 31.10348 grams

# MINERAL RESOURCES AND RESERVES – A SUMMARY

CONTINUED

## MINERAL RESERVE STATEMENT – ESTIMATES AT 30 JUNE 2019

Operations	Proved reserves			Probable reserves			Total mineral reserves		
	Tonnes (Mt)	Grade (g/t)	Gold (000oz)	Tonnes (Mt)	Grade (g/t)	Gold (000oz)	Tonnes (Mt)	Grade (g/t)	Gold (000oz)
<b>GOLD</b>									
<b>SOUTH AFRICA UNDERGROUND</b>									
<b>Free State</b>									
Tshepong Operations	20.0	5.87	3 774	3.8	4.70	576	23.8	5.68	4 350
Bambanani	0.7	11.69	278	–	–	–	0.7	11.69	278
Unisel	0.2	4.81	29	0.1	4.13	7	0.2	4.65	36
Joel	2.9	4.95	468	1.4	4.87	225	4.4	4.93	693
Masimong	0.6	4.37	88	0.04	3.53	4	0.7	4.33	93
Target 1	3.2	4.38	444	1.5	4.66	221	4.6	4.47	665
<b>Total</b>	<b>27.6</b>	<b>5.72</b>	<b>5 080</b>	<b>6.8</b>	<b>4.72</b>	<b>1 034</b>	<b>34.5</b>	<b>5.52</b>	<b>6 114</b>
<b>West Rand</b>									
Doornkop South Reef	5.3	4.92	845	5.6	4.86	872	10.9	4.89	1 718
Kusasaletu	3.6	6.79	779	0.9	6.67	194	4.5	6.76	972
<b>Total</b>	<b>8.9</b>	<b>5.67</b>	<b>1 624</b>	<b>6.5</b>	<b>5.11</b>	<b>1 066</b>	<b>15.4</b>	<b>5.43</b>	<b>2 690</b>
<b>Klerksdorp goldfield</b>									
Moab Khotsonq	4.0	7.29	945	2.8	9.70	887	6.9	8.28	1 832
<b>South Africa underground – total</b>	<b>40.6</b>	<b>5.86</b>	<b>7 649</b>	<b>16.2</b>	<b>5.75</b>	<b>2 987</b>	<b>56.7</b>	<b>5.83</b>	<b>10 636</b>
<b>SOUTH AFRICA SURFACE</b>									
<b>Kraaipan Greenstone Belt</b>									
Kalgold	9.4	0.87	265	8.9	1.18	339	18.4	1.02	605
<b>Free State surface</b>									
Phoenix	55.8	0.27	490	–	–	–	55.8	0.27	490
St Helena	108.6	0.27	933	–	–	–	108.6	0.27	933
Central Plant	–	–	–	60.5	0.27	517	60.5	0.27	517
Other:									
– Waste rock dumps	–	–	–	3.9	0.51	64	3.9	0.51	64
– Tailings	–	–	–	561.6	0.22	4 032	561.6	0.22	4 032
<b>Free State surface</b>	<b>164.4</b>	<b>0.27</b>	<b>1 424</b>	<b>626.0</b>	<b>0.23</b>	<b>4 613</b>	<b>790.4</b>	<b>0.24</b>	<b>6 036</b>
<b>South Africa surface – total</b>	<b>173.8</b>	<b>0.30</b>	<b>1 689</b>	<b>634.9</b>	<b>0.24</b>	<b>4 952</b>	<b>808.8</b>	<b>0.26</b>	<b>6 641</b>
<b>SOUTH AFRICA – TOTAL (underground and surface)</b>	<b>214.4</b>		<b>9 338</b>	<b>651.1</b>		<b>7 939</b>	<b>865.5</b>		<b>17 277</b>
<b>PAPUA NEW GUINEA</b>									
Hidden Valley	2.7	0.96	85	13.6	1.91	833	16.3	1.75	918
Hamata	0.01	2.25	1	0.4	1.74	20	0.4	1.75	21
Golpu <sup>1</sup>	–	–	–	200.0	0.86	5 500	200.0	0.86	5 500
<b>PAPUA NEW GUINEA – TOTAL</b>	<b>2.8</b>	<b>0.97</b>	<b>86</b>	<b>213.9</b>	<b>0.93</b>	<b>6 354</b>	<b>216.7</b>	<b>0.93</b>	<b>6 439</b>
<b>HARMONY – TOTAL</b>	<b>217.1</b>		<b>9 424</b>	<b>865.0</b>		<b>14 293</b>	<b>1 082.2</b>		<b>23 716</b>

**MINERAL RESERVE STATEMENT – ESTIMATES AT 30 JUNE 2019** continued

Operations	Proved reserves		Probable reserves		Total mineral reserves	
	Tonnes (Mt)	Gold eq (000oz)	Tonnes (Mt)	Gold eq (000oz)	Tonnes (Mt)	Gold eq (000oz)
<b>GOLD EQUIVALENTS <sup>2</sup></b>						
<b>Silver</b>						
Hidden Valley	2.7	25	13.6	175	16.3	199
<b>Copper <sup>1</sup></b>						
Golpu	–	–	200.0	12 538	200.0	12 538
<b>Silver and copper – total as gold equivalents</b>	<b>2.7</b>	<b>25</b>	<b>213.6</b>	<b>12 713</b>	<b>216.3</b>	<b>12 738</b>
<b>PAPUA NEW GUINEA – TOTAL (including gold equivalents)</b>	<b>2.8</b>	<b>110</b>	<b>213.9</b>	<b>19 067</b>	<b>216.7</b>	<b>19 177</b>
<b>HARMONY – TOTAL (including gold equivalents)</b>	<b>217.1</b>	<b>9 448</b>	<b>865.0</b>	<b>27 006</b>	<b>1 082.2</b>	<b>36 454</b>

**OTHER METALS**
**PAPUA NEW GUINEA**

	Tonnes (Mt)	Grade (g/t)	Ag (000oz)	Tonnes (Mt)	Grade (g/t)	Ag (000oz)	Tonnes (Mt)	Grade (g/t)	Ag (000oz)
<b>Silver</b>									
Hidden Valley	2.7	21.13	1 863	13.6	30.41	13 271	16.3	28.85	15 134
<b>Copper</b>									
Golpu <sup>1</sup>	–	–	–	200.0	1.20	5 400	200.0	1.20	5 400
<b>Uranium</b>									
Moab Khotson	–	–	–	6.9	0.22	3	6.9	0.22	3

<sup>1</sup> Harmony's 50% attributable portion

<sup>2</sup> Gold equivalent ounces are calculated assuming prices of US\$1 290/oz for gold, US\$3.00/lb for copper and US\$17.00/oz for silver with 100% recovery for all metals Metal figures are fully inclusive of all mining dilutions and gold losses, and are reported as mill delivered tonnes and head grades Metallurgical recovery factors have not been applied to the reserve figures

Rounding of numbers may result in slight computational discrepancies

Note: 1 tonne = 1 000kg = 2 204lb

1 troy ounce = 31.10348 grams



# EXPLORATION AND PROJECTS



NATURAL  
CAPITAL

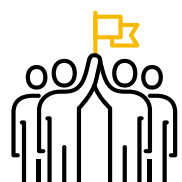


MANUFACTURED  
CAPITAL



Exploration is vital to ensuring the long-term economic sustainability of Harmony as a mining company.

## FY19 HIGHLIGHTS



### WHY EXPLORATION MATTERS

Exploration and the discovery of significant, economically viable orebodies suitable for development are central to the long-term sustainability of Harmony's business. By ensuring a future pipeline of reserves and resources, Harmony will be able to operate sustainably and profitably and to create value in the long term.

#### Papua New Guinea

- **Wafi-Golpu, a greenfield exploration project, an excellent long-term opportunity**
  - However, permitting and legislative changes may impact the availability of the project – see [page 116](#)

- Geotechnical drilling confirms **viability of early access of the Nambonga decline**

- Near-mine exploration in the vicinity of Hidden Valley targets **potential high-grade satellite epithermal gold deposits**

#### South Africa

- **Exploratory greenfield drilling** currently underway at Target North

- Focus on **organic brownfield exploration at Kalgold – mineral resource estimate updated in January 2019:**
  - 89.8Mt @ 0.91g/t for **2.636Moz** of gold
  - **prefeasibility study continues**

- **Tailings retreatment expansions** are planned or underway:
  - tailings reclamation at Joel Plant – prefeasibility underway
  - Mispah tailings retreatment project – prefeasibility study indicates an 11-year project life
  - expansion of Central Plant tailings retreatment to 500 000 tonnes a month is awaiting capital approval



Target North

## OUR APPROACH

Our exploration strategy aims mainly to pursue brownfields exploration targets close to existing mining infrastructure. This will drive short- to medium-term organic ore reserve replacement and growth to support our current strategy to increase production of quality ounces and to mitigate the risk of a depleting ore reserve base.

Key work streams underpinning the FY19 exploration programme were:

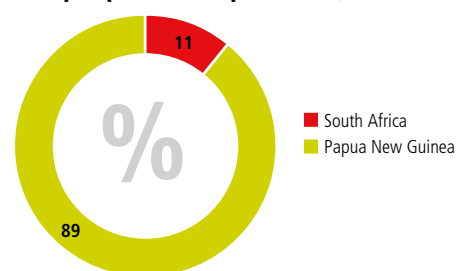
- Brownfield exploration at Hidden Valley and Kalgold to optimise existing open pit operations and extend mine life
- Brownfield exploration at underground operations in South Africa
- Greenfield exploration currently underway at Target North, South Africa

## WHAT WE DID IN FY19

In FY19, we spent R526 million (US\$37 million) (FY18: R457 million; US\$36 million) on exploration in total, broken down by country as follows:

- **Papua New Guinea:** R468 million (US\$33 million) (FY18: R407 million; US\$37 million) was spent on exploration, driven largely by Wafi-Golpu related activities. Expenditure of R278 million (US\$20 million) is planned for FY20
- **South Africa:** R58 million (US\$4 million) (FY18: R50 million; US\$4 million) was spent on exploration with expenditure of R96 million (US\$7 million) planned for FY20.

**Group exploration expenditure** (R526 million; US\$37 million)



## Exploration – Papua New Guinea

Our exploration programme in Papua New Guinea focused on near-mine brownfield exploration aimed at extending Hidden Valley's operating life and greenfield exploration and rationalisation of our tenement holdings. A summary of the work done in the past year is as follows:

### Brownfield focus around Hidden Valley:

- Exploration programmes focused on near-mine brownfield targets on the contiguous tenement package surrounding the Hidden Valley mining lease which comprises 502km<sup>2</sup> of tenure
- Prefeasibility studies on the down-dip extensions of the Hidden Valley and Kaverio orebodies to extend mine life continued
- Generative work for high-grade satellite gold deposits has developed new drill targets at the Webiak Prospect:
  - Located approximately 7km north of the Hidden Valley mine
  - Low sulphidation epithermal gold-silver vein mineralisation
  - Drill testing planned for the first quarter of FY20

### Greenfield exploration and tenement rationalisation:

- Reduction in regional greenfield exploration programmes and tenement holding in favour of near-mine brownfield exploration continued
- Harmony (100%) tenement holding reduced to 711.8km<sup>2</sup> (FY18: 963.75km<sup>2</sup>)
- Joint venture (Harmony 50%) tenement holding reduced to 182.3km<sup>2</sup> (FY18: 325.3km<sup>2</sup>):
  - Harmony continues to manage exploration on the portfolio tenement package on behalf of the exploration portfolio joint venture participants (ultimate parent companies: Newcrest 50%; Harmony 50%)

# EXPLORATION AND PROJECTS CONTINUED

## Exploration – South Africa

Near-mine and on-mine brownfield exploration and tailings retreatment form the basis of much of our exploration and project work in South Africa.

### Underground exploration

In all, 73 118 metres (FY18: 62 961 metres) were drilled across our underground operations in South Africa. This underground drilling provides useful information. Mine geologists and planners use drilling information to determine a mine's development strategy, its mine plan and eventually its economic viability.

### Tshepong – B Reef

The focus of underground exploration drilling in FY19 was the B Reef at the Tshepong and Phakisa sections at Tshepong Operations. A new block of ground was identified at the Phakisa section where development towards the B Reef will begin in FY20.

### Target North

Drilling of the first borehole from surface began towards the end of FY19 and a total of 1 542 metres was drilled. Drilling of three initial exploration boreholes is planned to confirm the geological model and test the Ventersdorp Contact Reef, as well as the sub-cropping Dreyerskuil and Eldorado (EA) Reefs. Drilling will continue in FY20.

### Moab Khotsong – 101 level

Underground exploration drilling is underway in two specific blocks above infrastructure in the Zaaiplaats project area with the aim to identify opportunities for early access and mining of these blocks of ground. Drilling will continue in FY20.

### Joel

*145 level exploration:* Exploration is aimed at upgrading the current resource to the indicated level and to determine the economic mining limit to the north and northeast below current mining infrastructure to ensure the 145 level decline project remains economically viable. Exploration drilling began in August 2019 and is due to be completed in June 2020. Three long inclined boreholes will be drilled in all. The first hole is currently at 220m and we expect to intersect reef at 300m.

*High-grade Beatrix Reef extension (Klippan):* Exploration is planned to upgrade the resource to the indicated level and determine the economic mining limit in the north and north east areas originally classified as non-depositional zones. Opening up this area will greatly reduce the risks of the initial development-constrained mining areas in the 137 project area. Exploration is scheduled to start in November 2019 and it due to end in April 2020. Three boreholes will also be drilled in this area.

### Kalgold brownfield exploration programme






Kalgold's mine titles provide an ideal mix of near-mine and new mine opportunities that can leverage existing infrastructure and be fast-tracked into production with aggressive exploration.

A total of 26 790 metres of drilling was completed in FY19, bringing the total drilled to date to 48 610 metres (210 boreholes). Drill results have been very encouraging and a mineral resource update and prefeasibility study to optimise the Kalgold operation based on the results of the exploration drilling is underway. Further detailed interpretation and field work to put anomalies in context with geology is planned for the first quarter of FY20, with the Kalgold prefeasibility study scheduled for completion in FY20. Future options will be evaluated once certain technical and economic criteria have been met.

## Projects – Papua New Guinea

### Wafi-Golpu copper-gold deposit permitting process and progressing the special mining lease application

#### Wafi-Golpu project (100%) – Key statistics:

	<ul style="list-style-type: none"> <li>Mineral resource contains 18.6Moz gold and 8.6Mt copper</li> </ul>
	<ul style="list-style-type: none"> <li>Estimated life of mine of more than 28 years</li> </ul>
	<ul style="list-style-type: none"> <li>Steady-state production estimated at 161 000t of copper, 266 000oz of gold (more than 1.4Moz of gold equivalents ounces annually)</li> </ul>
	<ul style="list-style-type: none"> <li>Above average grades:                             <ul style="list-style-type: none"> <li>gold – 0.90g/t</li> <li>copper – 1.27%</li> </ul> </li> </ul>
	<ul style="list-style-type: none"> <li>In terms of gold production, an all-in sustaining cost of minus US\$2 128/oz is estimated</li> <li>For copper, production costs of US\$0.26 lb are in the lowest decile</li> </ul>

The Wafi-Golpu project, a 50:50 unincorporated joint venture between subsidiaries of Harmony and Newcrest, is a viable development of a high-quality resource.

The special mining lease application was submitted to the Papua New Guinea Mineral Resources Authority in August 2016 and amended in March 2018, when an updated facility study was tabled, including deep sea tailings placement as the preferred tailings solution. The Environment Impact Statement was submitted in June 2018.

Permitting of the Wafi-Golpu project has been delayed. The Wafi-Golpu joint venture entered into a Memorandum of Understanding (MOU) with the Government of Papua New Guinea in December 2018, targeting a special mining lease grant by June 2019. Since the signing of the MOU in December 2018, a legal matter between the provincial and national government has interrupted the permitting process, and continues to do so. The Wafi-Golpu joint venture remains ready to engage with the Government of Papua New Guinea and the regulators. At this stage, the permitting timeline and roadmap are still to be redefined.

The Papua New Guinea government has commissioned a review of the mining regime. Any change to the Papua New Guinea mining regime may result in the imposition of additional restrictions, obligations, operational costs, taxes or royalty payments and could have a material adverse effect on Harmony's business, operating results and financial condition.

The Chamber of Mines and Petroleum of Papua New Guinea, as the representative industry body, has been collating information from industry participants and engaging with the Papua New Guinea government as part of the industry's response to the review proposals.

The primary project deliverable is the commissioning of a mining operation to produce at nameplate capacity of 16.84Mtpa a high-quality copper and gold concentrate with ore sourced from three block caves.



The Wafi-Golpu project will progress to execution when:

- the special mining licence, the environmental impact statement and all other necessary tenements and permits required have been granted
- all required agreements with the State and landowners have been signed
- all necessary approvals have been received from the boards of directors of the ultimate holding companies of the joint venture partners

Once the special mining licence has been granted, initial activities will focus on development of site access roads and bridges, and construction of the Nambonga and Watut declines.

## Projects – South Africa

### Kalgold expansion project

Following on from the current exploration drilling programme at Kalgold, this expansion project is aimed at optimising/increasing production. Kalgold currently treats approximately 130 000tpm.

A prefeasibility study began in June 2018 to investigate various plant throughput options. The second phase of the exploration drilling programme was completed in December and the resource estimate from this work is used in the study. A prefeasibility study is currently underway and due to be completed in August 2019. Once technical and economic criteria have been met, future options will be evaluated.

### Underground projects

Underground projects are at Joel North, Target 3 and at Moab Khotsong, where two separate projects, the Great Noligwa shaft pillar extraction and the Zaaiplaats projects, are currently underway.

For the Zaaiplaats project, underground exploration drilling is underway in two specific blocks above infrastructure in the Zaaiplaats project area and is aimed at identifying opportunities for their early access and mining. Drilling will continue in FY20.

### Tailings retreatment expansions

Several tailings retreatment growth projects are currently underway to optimise available surface sources in the Free State. These include:

- **Central Plant tailings retreatment facility – reclamation “plus”:** The initial project operated at monthly nameplate capacity 500 000 tonnes for most of FY19. Further expansion to monthly capacity of 700 000 tonnes is planned. The feasibility study met our economic and technical criteria and the expansion project is currently in design phase. Capital allocation is awaited
- **Mispah tailings retreatment:** A prefeasibility study was conducted to investigate the economic viability of retreating the tailings material stored in the Mispah 1 tailings facility. The tailings are to be treated at the Noligwa plant and the residue deposited onto the Mispah 3 extension of the Mispah tailings storage complex. The prefeasibility study indicated an 11-year project life with estimated production of 7 922kg of gold from the reclamation of 66.3Mt of tailings at a monthly rate of 510 000 tonnes. Project capital is estimated at R624 million and the project will yield a net present value of R400 million at a gold price of R585 000/kg and a 7.5% discount rate. The results of a risk-based study conducted by SRK on the installation of lining under the Mispah 3 TSF extension are to be presented to the Department of Water and Sanitation. The outcome of this engagement with the department will guide the timing and scope of the feasibility study, which is currently on hold
- **Joel tailings reclamation:** A prefeasibility study is underway to investigate the potential benefits of recovering gold from reclaimed tailings at the Joel plant and depositing the retreated tailings onto the Joel tailings storage facility

For further detail on our exploration programme and more information on the projects currently underway, please see *Mineral Resources and Mineral Reserves 2019*, available at [www.har.co.za](http://www.har.co.za).



Target North



# SOCIO-ECONOMIC DEVELOPMENT

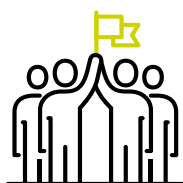


SOCIAL AND  
RELATIONSHIP  
CAPITAL



Harmony aims to be relevant to our host communities. We are committed to promoting sustainable socio-economic development so as to mitigate the impacts of our activities and to ensure a positive legacy.

## WHAT WE ACHIEVED IN FY19



Prepared in accordance with the GRI Standards:  
203-1, 203-2, 413-1, 413-2, 414-1, 414-2, 419-1 and MM5

- Included in the **FTSE4Good Index of responsible investment** in recognition of our performance

- Board approved new **preferential procurement and enterprise and supplier development strategy**

### South Africa

- Spent R6.3 billion on black economic empowerment companies \*\* – of this R1.9 billion\* was spent with small businesses operating in five mine host communities
- Focused drive to increase procurement opportunities for businesses in host communities, including the hosting of community supplier days
- Projects covered by second generation social and labour plans completed at a total cost of R476 million (includes R303 million investment by government) over five years 2013-2017
- Third generation infrastructure and agriculture projects implemented

### - Papua New Guinea

- Continued focus on community agri-business projects offering alternative sustainable income sources
- Successful cocoa and coffee pilot projects in Papua New Guinea receive many accolades attesting to their success with one farmer winning gold for his cocoa

Our socio-economic development activities support the following Sustainable Development Goals:



\* Spend with companies having black economic empowerment shareholdings of at least 50% + one vote

\*\* Spend with companies having ownership of 25% + 1 vote

## OUR APPROACH TO SOCIO-ECONOMIC DEVELOPMENT

Harmony's socio-economic development initiatives aim to uplift and empower local communities and to make a positive and lasting contribution in the regions in which we operate. Harmony's strategy has been expanded to include a fourth pillar, Responsible stewardship, which entails managing and mitigating the impacts, including social impacts, of our business activities. As the primary employer in the Free State, in South Africa, and at Hidden Valley, in Papua New Guinea, we make an economic contribution through the taxes, royalties and salaries and wages paid.

Total economic value distributed – to employees, to our host communities, to government and to suppliers including local enterprises – is derived from among others salaries and wages, investment in socio-economic initiatives, taxes and royalties, and procurement, which amounted to R28.6 billion in FY19 (FY18: R24.2bn). Furthermore, we aim to improve quality of life through socio-economic spend of not less than 1% of net profit after tax which will effectively be returned to communities for shared benefit.

In FY19, we continued to align our socio-economic strategy with the overall aims and targets of the United Nations Sustainable Development Goals. For more information on this, see

*Our sustainable development framework.*



Badirile High School – science laboratory

### Socio-economic development at Harmony FY19

**Our aim is to uplift and empower local communities to become self-sustaining, and to be a catalyst for economic growth while creating alternative economies to support communities once mining ceases**

	INVESTING SOCIAL LICENCE TO OPERATE	PREFERENTIAL/LOCAL PROCUREMENT	ENTERPRISE AND SUPPLIER DEVELOPMENT	CORPORATE CITIZENSHIP
	Focus on identified mine community development initiatives to stimulate socio-economic growth and development	New strategy in place promotes procurement spend to stimulate economic activity in local host communities	New approved strategy to promote and local enterprise	Supplements other socio-economic activities and initiatives to generate positive impacts and outcomes
South Africa →	Mine community development governed by the Mining Charter and social and labour plans  <b>Spend: R42 million</b>	Focused on black economic empowerment and driven by the Mining Charter  <b>Spend: R6.3 billion**</b>	Supporting and promoting small local black-owned businesses to become suppliers  <b>Spend: R1.9 billion*</b>	Focus on: <ul style="list-style-type: none"> <li>• education</li> <li>• socio-economic advancement projects</li> <li>• health</li> <li>• arts, culture, sports and recreation</li> </ul> <b>Spend: R32 million</b>
Papua New Guinea →	Related activities are governed by the memorandum of agreement with various levels of government Focus on: <ul style="list-style-type: none"> <li>• community infrastructure (roads, bridges, educational facilities, law and order facilities, and water supply and sanitation systems in landowner and local community villages)</li> <li>• health programmes</li> <li>• community agriculture programmes</li> </ul> <b>Spend: R14 million</b>	Aligned with terms of the memorandum of agreement for procurement in country  <b>Spend: R2.2 billion</b>	Aligned with terms of the memorandum of agreement – localised with Morobe Province  <b>Spend: R1.1 billion</b>	Included in social licence to operate

\* Spend with companies having black economic empowerment shareholdings of at least 50% + one vote

\*\* Spend with companies having ownership of 25% + 1 vote

# SOCIO-ECONOMIC DEVELOPMENT CONTINUED

## GOVERNANCE

The social and ethics committee of the board oversees the policy and strategies pertaining to corporate social responsibility, including socio-economic development, and to public safety. Responsibility for implementation of related policies vests with the management team and the executive: sustainable development. Discipline-specific policies are supported by guidelines and standards which inform the development of site-specific management systems, which are aligned overall with our sustainable development framework.

## WHAT WE DID IN FY19

### Delivering on our licence to operate

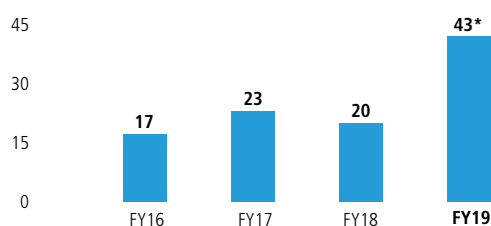
At Harmony, socio-economic development can be broadly defined as an outcome of local initiatives by stakeholders identifying and using local resources, ideas and skills to stimulate socio-economic growth and development. The outcome is the creation of employment opportunities, poverty alleviation and addressing inequality while attracting external investment, all of which are important in creating sustainable local economies.

### South Africa

Harmony's South African operations are governed by approved mining rights, which are each bound by an agreed and approved social and labour plan, incorporating 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.

In South Africa, between 2013 and 2017, our total direct investment in mine communities was R173 million. This was further augmented by the Department of Human Settlements' investment of R303 million. Commitments towards mine community development for the period 2018 to 2022 total R268 million, of which R43 million was spent in FY19.

### South Africa – annual investment in mine community development (R million)



\* Assured by Ngubane and Co

As mine community development projects in the social and labour plans are implemented, we continue to engage with the relevant municipalities and host communities to ensure that delivery expectations are met. These engagements are also intended to identify new projects, aligned with the integrated development plans of the municipalities, as further local economic development support projects provided for in the social and labour plans.

We measure the effectiveness of our investments by their impact. As a result of projects implemented in FY19, 206 job opportunities were created for host communities across Harmony's South African footprint. Seven local entrepreneurs assisted with delivery of these projects.

## Selected community development projects in South Africa

### Infrastructure development

In terms of the National Development Programme, development of a strong network of economic infrastructure – transport, energy, water resources – will promote economic investment and job creation. As road infrastructure in particular is essential to Welkom's integration within the national economy, Harmony has allocated R58 million over the next four years to road-building in Matjhabeng, the municipality within which Welkom falls, in the Free State. This funding will cover the resurfacing and resealing of roads in various towns in the local municipality. Local suppliers benefit from this project, which has created over 200 job opportunities. In the first year of the initiative, the contract was awarded to a local 100% black-owned joint venture, which subcontracted part of the work to six other local companies.



### Agriculture

Poultry farmers in Lesotho, a labour-sending area, received a mobile refrigeration truck and abattoir equipment to enable them to service restaurants, supermarkets and the general public. The project was undertaken as abattoir facilities were not available in the area. The abattoir will create employment opportunities for 25 people.





## Agriculture programmes

Improving agricultural productivity is central to addressing poverty in South Africa, particularly in our mining communities. The role of the sector as a food provider is particularly relevant, given increasing concern about food security.

Harmony believes that mining and agriculture can co-exist, and that both industries can contribute to economic growth. As mines close when they reach the end of their economic lives, agriculture projects can sustain an alternative industry that could continue to contribute to the local economy.

Harmony has initiated several agriculture projects with commercial and subsistence farmers. The vegetable tunnel project is a commercial agricultural initiative that was successfully implemented for our Doornkop (Soweto) and Moab Khotsoeng (Orkney) mines. It is being rolled out at Wedela in Carletonville (Kusasaletu). The project involves the production of crops by local women and youth. Produce is sold at markets in Tshwane and Johannesburg.



The Broad-Based Livelihoods Programme, a subsistence farming project with a step-wise approach to maximising participation (broad-based) and enabling easy entry for all interested parties (inclusive), encourages people or households to systematically improve as:

- producers: to attain food security and stability
- income generators: by selling, saving and adding value
- entrepreneurs: improving business management skills relating to production and sale of produce
- employers: employing family, neighbours and other community members

A horticulture programme to provide protective cultivation in the form of “greenhouse” tunnels or shade-cloth structures has been rolled out. Gardening projects for food security in the Orkney area support 60 families and involve the training 1 000 individuals in basic agriculture and the installation of tunnel infrastructure. Around 80% of the beneficiaries are women and youth



## Educating, upskilling and enabling youth

Two mobile youth development hubs were purchased for host communities in the North West and Free State provinces to deliver information and communication technology, including internet access, printing, copying, and typing services, business and job vacancy searches, and business training and development.

In nurturing tomorrow's leaders, Harmony recognises sport as a tool for emotional and psychological well-being as sport promotes positive social traits among those participating, including co-operation, sharing, respect, altruism, among others.

The Virginia Sports Academy, which has been operating for close on a decade now, is fully funded by Harmony, and employs over 20 people and supports 50 boys at an annual cost of approximately R7 million. The success of this initiative was underscored when

11 rugby players from the Academy participated in regional and national teams. Two rugby players represented South Africa in Under 19 invitational Sevens Rugby Dubai and in the 15-man tour of Italy.

The soccer team participated in the Engen provincial semi-finals and regional Kay Motsepe Cup with two soccer players selected for the South African Under 20 team at Olympic qualifiers in Morocco.

The Virginia Jewellery School, fully supported by Harmony and employing 12 people, funds 13 students and two shops at an annual cost of approximately R4 million. In November 2018, 12 students completed learnerships. Since 2011, 24 students have completed learnerships and qualified as goldsmiths, and 13 students have been employed by the Virginia Jewellery School and retail shops. Five went on to open their own jewellery enterprises.



# SOCIO-ECONOMIC DEVELOPMENT CONTINUED

## Papua New Guinea

Regulatory control here vests in a memorandum of agreement between Harmony, various regional and local governments, and the Hidden Valley landowner association with similar socio-economic commitments to those in South Africa. This is presently under development (in draft) as part of the permitting process for the Wafi-Golpu project.

In line with Hidden Valley's current memorandum of agreement, Harmony continues to offer business development opportunities to landowners. Similar opportunities are expected to be available with the proposed development of the Wafi-Golpu project.

Harmony's social programmes at the Hidden Valley mine and within the Wafi-Golpu project area focus on building, repairing and upgrading social infrastructure such as roads, bridges, educational facilities, healthcare services, law and order facilities, water supply and sanitation systems in the landowner and local community villages. Harmony has also established various schemes intended to provide alternative sustainable income sources for mine and project-area landowners. Collectively, these initiatives continue to generate a range of positive impacts for local communities in the Morobe Province and beyond.

A total of R14 million (US\$1 million) was spent on social responsibility projects within Papua New Guinea for FY19. These projects continue to foster positive relationships with mine and project area host communities.

### Community infrastructure programmes

Harmony has continued to contribute towards the maintenance of critical sections of the Lae-Bulolo highway and the Wau-Bulolo access road. Harmony has also assisted in repairing the Mabung and Kwembu bridges giving access to landowner villages in the Hidden Valley area and the Hekeng footbridge in the Wafi-Golpu Project area. An extensive upgrade to the Bulolo police station was completed during FY19, providing fencing, water supply and sanitation to previously condemned parts of the facility.

### Education

Education programmes in FY19 delivered across the Hidden Valley and Wafi-Golpu areas included:

- Maintenance and upgrades to elementary and primary schools in the mine and project areas
- Provision of stationery and materials for students and teachers at elementary and primary schools
- Landowner School Fee Assistance Programme
- Harmony's Tutudesk initiative (including 2 000 Tutudesks distributed among 39 elementary schools in the Wau, Bulolo and Wafi-Golpu project area)
- Assisting provincial government in appointing new teachers
- Adult literacy programmes and education initiatives focused on women and children

### Health programmes

Various community health outreach programmes are in place to improve the health and wellbeing of local communities. During FY19, health-related activities included:

- Maintenance and upgrades of mine and project area first aid posts and clinics as well as assistance with staffing
- Obstetrics training at the Bulolo health centre
- Assisting the Papua New Guinea Department of Health to administer polio and cervical cancer vaccinations (3 080 and 474 polio vaccinations administered respectively in Hidden Valley and Wafi-Golpu communities and another 6 000 for cervical cancer in Wafi-Golpu communities)
- Routine health centre visits and health patrols with focus on antenatal care and childhood immunisation
- Community medical assistance, including emergencies and transfers to Bulolo and Lae health centres
- Distributed 23 beds donated by Rotary Australia to four health facilities in the Hidden Valley area
- Contributions to power running costs at local hospitals

### Community agricultural programmes

During FY19, the agri-business projects established by the Hidden Valley mine and Wafi-Golpu project continued to grow considerably. These projects aim to offer alternative sustainable income sources for mine and project area communities.

The coffee pilot programme initiated in FY19 for Hidden Valley communities included the training of 129 farmers in coffee nursery development, husbandry and farm rehabilitation as well as the provision of tools and equipment and reticulated water supply to community nurseries. The pilot scheme planted 6 000 coffee seedlings for the forthcoming coffee season. A highlight of the year was the first commercial sale from the scheme when 400 bags of parchment generated PGK75 000 (R316 984; US\$22 346) for the Nauti, Kuemba and Winima producers.

At the Wafi-Golpu project, a similar coffee programme is under development and gaining momentum. Extensive efforts were made to rehabilitate neglected coffee plantations within three Yanta villages during FY19. Since the start of the programme in late 2018, an area equivalent to 17.3 hectares of coffee trees was established in the three villages.

A cocoa programme initiated by the Wafi-Golpu project also excelled during the year. The Wafi-Golpu project now works with more than 1 000 cocoa-growing families. According to data from the Papua New Guinea Cocoa Board, the current area under production is over 600 hectares and supplies an estimated 300 tonnes per year, earning the farmers an estimated PGK2.1 million (R9 million; US\$625 000) a year.

These cocoa and coffee projects have received many accolades, attesting to the success and long-term sustainability of these pilot initiatives. Farmer Chepan Yaling, from one of the Wafi-Golpu supported cooperative farmers groups of the Lower Watut, won gold for his cocoa at the latest provincial Cocoa Show of Excellence which showcases farmers' produce from across Papua New Guinea.

### Partnering for development in Papua New Guinea

At a business breakfast hosted by the Lae Chamber of Commerce on 28 August 2019, Harmony provided a wide-ranging overview of its activities in Papua New Guinea.

Harmony affirmed ongoing commitment to mining in Papua New Guinea, highlighting achievements since its entry into the country almost 16 years ago, including permitting, construction and operation of the Hidden Valley mine and advancement of the Wafi-Golpu project from exploration to current permitting phase.

Harmony emphasised the importance of safety at its operations and noted that the Hidden Valley mine currently operates at an industry-leading total recordable injury frequency rate of 0.69 per million hours worked.

As an established partner in the development of Papua New Guinea, Harmony estimates that it has contributed approximately PGK2.9 billion (R11 billion; US\$1.1 billion) to the Morobe Province through its investments in the Hidden Valley mine, Wafi-Golpu project and exploration within the province over the past 10 years.

Harmony is also a significant contributor to the Morobe Kundu Vision 2048, a vision and plan to make the Morobe province prosperous, healthy, educated and self-sufficient by 2048. We contribute financially and through our tangible contributions to the community. With an anticipated 28-year operational mine life, the Wafi-Golpu project will contribute towards the achievement of the goals of the Kundu Vision well into the future.

The Hidden Valley mine alone has directly and indirectly contributed over PGK5 billion (R19 billion; US\$1.9 billion) to the regional and national economy over the past 10 years, including PGK489 million (R1.9 billion; US\$185 million) in royalties and direct paid taxes. The mine has created around 2 000 jobs, with 72% of the workforce based in Morobe Province. To date, around PGK1.1 billion (R4.0 billion; US\$380 million) have been paid in salaries and wages over the mine's operating life. Hidden Valley's contribution includes various socio-economic development projects and programmes. Currently, over 100 local farmers are being trained in coffee husbandry and farm management, and three coffee nurseries have been established. The first harvest was taken to market in July 2019.

The development of the Wafi-Golpu project is a key future economic driver for the Morobe Province and Papua New Guinea. As an active explorer in the Morobe Province since 2004, Harmony has invested approximately PGK1 billion (R4.1 billion; US\$0.5 billion) in exploration and studies over time.



*Cocoa project – Wafi-Golpu*

# SOCIO-ECONOMIC DEVELOPMENT CONTINUED

## Preferential procurement

In pursuit of Harmony's commitment to increase its procurement spend in host communities, our board approved the preferential procurement and enterprise and supplier development strategy in FY19. This strategy is underpinned by three focal areas aimed at promoting spend with enterprises owned by previously disadvantaged individuals, particularly enterprises within Harmony's host communities.

The preferential procurement strategy focuses on these three focal areas:

- supporting existing non-compliant suppliers (those who do not comply with the minimum black economic empowerment ownership targets set out in Mining Charter III) to comply and transform, or moving procurement spend to compliant suppliers
- enhancing Harmony's current supply-chain model and ensuring that preferential procurement is embedded within the sourcing process
- creating a pipeline of small and medium enterprises to participate in the supply chain

## South Africa

During the course of FY19, the new Mining Charter (Mining Charter III), came into effect. The combined procurement and enterprise development section of the new charter accounts for 40 points out of 100 for the entire charter. The aim is to strengthen participation by designated groups in both procurement and business development opportunities.

For consistency with our FY18 reporting and to ensure alignment and understanding of compliance measured, in this report we have applied the Mining Charter II reporting guidelines, targets and principles. This will ensure comparability for the full reporting period. Harmony will start reporting on Mining Charter III in the next financial year (FY20).

Given the above, procurement expenditure with black economic empowered entities measured against Mining Charter II (that is entities with black ownership of more than 25%) for FY19 is R6.34 billion against total discretionary spend of R8.47 billion, or 75% of total discretionary spend.

### Expenditure with black economic empowerment (BEE) compliant companies measured against Mining Charter II definitions FY19

Category	Mining Charter II targets (%)	FY19		BEE spend as a proportion of total spend (%)		
		Discretionary spend (Rm)	BEE-compliant spend (Rm)			
				FY19	FY18	FY17
Capital goods	40	1 366	1 068	78	75	78
Services	70	3 658	2 683	73	79	80
Consumables	50	3 443	2 588	75	82	78
<b>Total</b>		<b>8 467</b>	<b>6 340</b>	<b>75</b>		



Moab Khotsoeng



Although Harmony was able to significantly increase year-on-year spend with black economic empowered entities, the decline in trends was mainly influenced by the Moab Khotsong acquisition which resulted in reduced black economic empowerment-compliance levels.

#### Papua New Guinea

As agreed with government authorities (local, regional and national), landowners and communities, we contract local companies wherever possible. Supply expenditure by Harmony in FY19 amounted to R3.59 billion or US\$268 million (FY18: R2.98 billion or US\$233 million) of which R2.20 billion or US\$164 million (FY18: R1.6 billion or US\$126 million) was spent within Papua New Guinea. Of this amount, R1.1 billion or US\$82 million (FY18: R1.1 billion or US\$85 million) was spent in Morobe Province. Harmony awarded contracts to local landowner companies for catering, fuel haulage, general freight, plant hire, security, labour hire, cleaning, and rehabilitation and bus services.

#### Enterprise and supplier development South Africa

Harmony's approach to enterprise and supplier development ensures that local black-owned small businesses benefit from the company's presence in their communities by facilitating various processes to support new local black-owned small business entrants. Harmony has developed a new enterprise and supplier development framework with a focus on creating sustainable businesses in host communities and shifting procurement spend to compliant suppliers who meet the minimum black economic empowerment ownership targets set out in the Mining Charter III.

Harmony spent R2.6 billion in FY19 on companies classified as small business, which is 30% of total procurement spend in South Africa. Of this amount, R1.9 billion was spent with black economic empowered companies as measured against Mining Charter II definitions. Small businesses include exempted micro enterprises with a maximum annual turnover of R10 million and qualified small enterprises with an annual turnover of over R10 million but less than R50 million.

#### Enterprise and supplier development centres

Harmony's enterprise and supplier development centres are strategically located in host communities, making it easier for small businesses and new entrants to access support without incurring exorbitant costs. In FY19, these centres managed contracts of over R42 million with 100% black-owned companies. Harmony aims to attract and sustain participation by more businesses based in our host communities.

Harmony has three centres, one each in Welkom, Soweto and Matlosana. The table below indicates the impact of these centres.

For further information on the work being done to promote enterprise development and local procurement, see the video, [Harmony: Advancing the community](#).

#### Supplier development centres

Centre	Value of procurement contracts*	Value of loans approved supporting small business*	Number of SMEs supported
Welkom	R22 million	R3 million	56
Soweto	R20 million	R3 million	79
Matlosana	R1 million	R3 million	35

\* Rounded to the nearest million

#### Leano funding initiative

Beyond the enterprise and supplier development centre, Harmony has introduced the Leano funding initiative which is an extension of these centres to identify and support entrepreneurs in host communities who require financial and technical start-up assistance. This is a focused initiative to develop SMMEs within our mining communities. Harmony provides financial and non-financial support to these enterprises, irrespective of whether they enter our supply chain or other supply chains

In FY19, the fund approved 96 loans (35 for women and 17 for youth) to the value of R17 million.



# SOCIO-ECONOMIC DEVELOPMENT CONTINUED

During FY19, Harmony hosted six supplier days, the first two at Merafong Local Municipality, followed by events in the Matlosana, Masilonyana, Ratlou and Matjhabeng local municipalities. Harmony has supported many businesses that emerged from the supplier days held – these are represented in the table below:

## Small business empowerment

Company	Impact
<b>Senatla Trading Enterprises</b>	<b>Employees: 46</b>
Ruben Thoso, owner for Senatla Trading Enterprises, a 100% black-owned business based in Welkom, Free State, is involved in the rehabilitation and filling of closed shafts as well as the installation of pump columns. The company participated in the Lejeleputswa Supplier Day when procurement opportunities and enterprise supplier development opportunities were shared.	<b>Support provided by Harmony:</b> <ul style="list-style-type: none"> <li>Quality management systems</li> <li>Coaching, mentoring and access to procurement opportunities</li> <li>Total spend with Senatla Trading Enterprise for FY19 was R10 million</li> </ul>
<b>Lekabe Engineering Service and Project</b>	<b>Employees: 15</b>
(100% black women-owned engineering company in North West Province)  The owner, a black woman, is a qualified mechanical foreman with more than 15 years' experience in the mining industry	<b>Support provided by Harmony:</b> <ul style="list-style-type: none"> <li>Vendor facilitation services Vendor facilitation process</li> <li>Quality management systems</li> <li>Total spend with Lekabe Engineering for FY19 was R320 000</li> <li>Company currently working on a R2 million engineering project at the Doornkop mine</li> </ul>
<b>Lesole Agencies</b>	<b>Employees: 60, from host communities</b>
Meshack Lesole, owner of Lesole Agencies, a 100% black-owned company based in Welkom, Free State, started by providing basic construction services to Harmony before his business expanded into land rehabilitation and plant hire.	<b>Support provided by Harmony:</b> <ul style="list-style-type: none"> <li>Vendor funding</li> <li>Preferential payment terms and technical compliance</li> <li>Total spend with Lesole Agencies in FY19 was R15 million</li> </ul>
<b>Divine Automation Solutions</b>	<b>Employees: 3</b>
Ramano Gerhard, owner of Divine Automation Solutions, a 100% black-owned company was discovered at a supplier day. The company, a new entrant in the technical services industry, provides technical services for valve and actuator maintenance as well as fault finding, support and training for shaft and plant operators on preventive maintenance.	<b>Support provided by Harmony:</b> <ul style="list-style-type: none"> <li>Vendor financing</li> <li>Preferential payment terms and technical compliance</li> <li>Quality management systems</li> <li>Spend of R1 million with company in FY19</li> </ul>

## Supporting compliant businesses within host communities

### Encouraging participation by host communities in procurement opportunities

In endeavouring to connect more with businesses in host communities, supplier engagement days are held. They are structured as engagement sessions aimed solely at registered businesses in Harmony's host communities and the sharing of procurement and development opportunities. Harmony shares our procurement calendar with these registered businesses, including information on upcoming procurement opportunities and on contracts that will be renewable within 12 months. These sessions also assist small, medium and micro enterprises in host communities to prepare their bid proposal packs for upcoming opportunities.

## Supplier days were held in these district municipalities during FY19

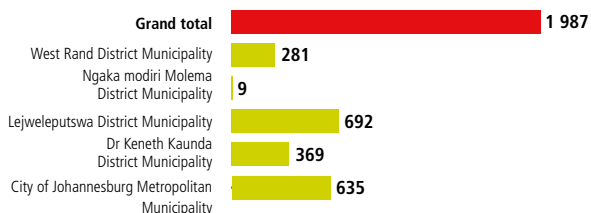
Supplier days	West Rand and City of Johannesburg	Ngaka Modiri Molema	Lejweleputswa	Dr Kenneth Kaunda
No. of participating SMMEs	110	16	51	98
No. of supplier day sessions held	2	1	2	1
No. of businesses awarded procurement opportunities	*171	7	*118	63

\* Higher uptake than participation at the event, due to referrals and post event on-boarding and engagements

### Harmony continues to pursue spend in host communities

Beyond these supplier days, Harmony continued to host one-on-one engagements with local businesses, at which they were coached and developed while preparing them for procurement opportunities. In all five of our host communities, Harmony spent about R1.99 billion with compliant black economic empowerment companies in FY19 – see graph.

#### Host community spend in South Africa (R millions)



### Corporate social investment

Our corporate social responsibility policy recognises the need for socio-economic investment in South Africa and Papua New Guinea, starting with our host communities and labour-sending areas. This is in addition to our spend on local economic development. Harmony's corporate social investment programme focuses on:

- education
- socio-economic advancement projects
- health
- arts, culture sports and recreation

In selecting projects and compiling our corporate social investment strategy, we conduct research, consult with communities to understand their needs and requirements, and engage with various municipal structures.

In FY19, Harmony spent:

- R7 million or US\$0.5 million (FY18: R15 million or US\$0.8 million) on corporate social responsibility projects in South Africa

Further, Harmony made contributions to worthy causes in support of social upliftment in our neighbouring countries. These included sponsorship of the Mandela 100 Global Citizen Festival, in support of the United Nations' sustainable development goals (R15 million), as well as Cyclone Idai relief donations to the governments of Mozambique and Zimbabwe (R5 million each).

### Public safety

There were no major incidents nor were any serious concerns raised during the year in relation to road transport and radiation exposure, which together with dust, are the primary public and community safety risks associated with our operations.

All Free State operations including Margaret Shaft have completed and submitted assessments in FY19. No significant incidents were reported.

### South Africa

Selected corporate social investment initiatives are:

- **Back-to-school programme (education)**
  - Beneficiaries: 100 learners in five primary schools located close to our Doornkop mine
  - Donation of school shoes and bag packs
- **Doornkop schools league (sports and recreation)**
  - Beneficiaries: 10 primary schools from Soweto, near the Doornkop mine
  - Number of teams: 30
  - Sporting codes: netball, boys and girls soccer



### OUTLOOK

To assist and engage with communities in and around our operations which are facing closure. We have put in place closure plans encompassing both the environmental and socio-economic impacts of closure that have detailed steps to mitigate the effects of closure and to ensure that, post-mining, communities will remain economically viable in the longer term.

In addition, we will continue to focus on the 2030 targets outlined in the SDGs and monitor our progress in contributing to them.

In Papua New Guinea, planned socio-economic projects will include health facility upgrades, infrastructure development (rural roads, electrification and water and sanitation), education, and security and safety.

# ENVIRONMENTAL MANAGEMENT AND STEWARDSHIP

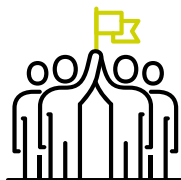


NATURAL  
CAPITAL



Mining involves the exploitation of a natural resource and its extraction from the earth, that by its very nature directly impacts the natural environment – land, water and air. At Harmony, we mine responsibly

## WHAT WE ACHIEVED IN FY19



Prepared in accordance with the GRI Standards: 301-1, 301-2, 301-3, 302-1, 302-2, 302-3, 302-4, 302-5, 303-1, 303-2, 303-3, 304-1, 304-2, 304-3, 304-4, 305-1, 305-2, 305-3, 305-4, 305-5, 305-7, 306-1, 306-2, 306-3, 306-4, 306-5, 307-1, 308-1, 308-2, MM1, MM2 and MM3

### Group

- **Continued investment in environmental management in FY19: R199 million (US\$13.9 million)**
- All long-life assets are ISO-14001 certified
- All plants, except Kalgold, Saaiplaas and Hidden Valley, are certified compliant with the Cyanide Code

### South Africa

- **Three water retreatment plants installed contributed to:**
  - Reduced dependency on potable water supply
  - Promoted water security
  - Contributed to annual savings of R5.6 million

- Estimated cost of phase 1 of the carbon tax is **R1.6 million and for phase 2 between R100 million and R500 million**
- **Energy efficiency programme delivered savings of 233 994MWh** with 53 304 MWh in savings from newly implemented projects
- Accelerated rehabilitation programme has resulted in the rehabilitation and backfilling of **45 shafts to date**
- Linkages effected with artisanal and small miners to support the mining of gold and aggregate

### Papua New Guinea

- **Hidden Valley's mine closure plan submitted** to the Papua New Guinea Conservation and Environment Protection Authority

- **25% reduction in diesel-generated power** supply at Hidden Valley due to improved supply from the national hydro-power grid

- **Project execution focused on performance and risk management of tailings storage facility to adhere to regulatory conditions** of approval and enhance existing emergency response strategies



Bio-energy and rehabilitation project – Free State

## OUR APPROACH TO ENVIRONMENTAL MANAGEMENT AND STEWARDSHIP

**We recognise that our activities have an inherent impact on surrounding communities and the natural environment, and that it is our responsibility to avoid, mitigate and manage such impacts. An additional benefit is reduced operating costs and exposure to risk while helping to leave a lasting, positive legacy post mining. Excellence in environmental performance is essential to our business success.**

In line with Harmony's systems approach to environmental management, our long-life assets, those with a remaining life of mine of more than five years, have been certified ISO 14001-compliant. The most recent were Moab Khotsong and Joel, which were certified in FY19. In terms of ISO 14001, operations are audited annually. No material non-compliances were identified in the past year.

Operations with ISO certification:

- Doornkop complex
- Kusasalethu complex
- Target complex
- Tshepong Operations
- Masimong
- Harmony One Plant
- Moab Khotsong complex
- Joel complex

**Our environmental management and stewardship activities support the Sustainable Development Goals:**



## GOVERNANCE

At board level, our social and ethics committee oversees implementation of Harmony's environmental strategy and performance. Our environmental strategy is aligned with a board-approved environmental policy\* that outlines our commitment to responsible environmental stewardship and sustainable mining as well as closure. This strategy is in turn supported by an energy efficiency and climate change policy, a biodiversity and rehabilitation position statement and a water management strategy. The executive: sustainable development motivates environmental improvement strategically at group level.

Each operation's environmental management programme includes closure commitments to expedite beneficial post-mining land use and promote sustainable community livelihoods. In accordance with its environmental permit for the operation, Hidden Valley submitted its mine closure plan to the regulator during FY19, to initiate State approval of the closure process.

Consistent with the South African operations, Hidden Valley's environmental management is aligned with the ISO 14001 standard and all new employees receive environmental awareness training, which is reinforced by leadership training courses and monthly initiatives.

### Our principal environmental issues are:

- Land stewardship – minimising our environmental footprint and conserving biodiversity
- Reducing energy consumption and greenhouse gas emissions, enhancing efficiencies and limiting impact on climate
- Water conservation and optimising water consumption at our South African operations
- Air quality and dust management
- Waste management, especially mineral waste (tailings and waste rock) and related management of tailings dams
- Regulatory compliance
- Regulatory uncertainty

\* See [www.harmony.co.za/sustainability/governance#policies](http://www.harmony.co.za/sustainability/governance#policies)



# ENVIRONMENTAL MANAGEMENT AND STEWARDSHIP

CONTINUED

## Changing legislative framework creating uncertainty

### South Africa:

In South Africa, mining is primarily regulated by the Mineral and Petroleum Resources Development Act, with other key legislation being the National Environmental Management Act and the National Water Act. Recent legislative changes in South Africa have included the introduction of a carbon tax, implementation of mandatory greenhouse reporting and more recently the climate change bill to promote a low-carbon economy. The environmental financial provision regulations and the various drafts since 2015, for which no conclusive draft was published, also created uncertainty. This has to some extent been mitigated by the Department of Environment, Forestry and Fisheries which has communicated its intention to delay their implementation from February 2020 to February 2021 to allow for more consultation. For further information, refer to the 20F which is available at [www.harmony.co.za](http://www.harmony.co.za).

### Papua New Guinea:

Water extraction and waste discharge by mining projects are regulated in accordance with the Environment Act 2000 administered by the Papua New Guinea Conservation and Environment Protection Authority.

Extensive legislative review continues and a number of policy changes are currently under consideration. Of particular relevance to Harmony in Papua New Guinea is the revised mine closure policy, which includes provision for financial assurance, as security for mine closure costs, and the introduction of a biodiversity offset policy. The proposed Papua New Guinea Biodiversity Offsets Framework was released for industry review during FY19. Harmony continues to engage with the government of Papua New Guinea through the offices of the Chamber of Mines and Petroleum, the Minister for Environment and senior members of the Conservation and Environment Protection Authority.



*Steep slope rehabilitation*

## WHAT WE DID IN FY19

We spent a total of R199 million (US\$14.0 million) (FY18: R181 million or US\$14.2 million) on our group environmental portfolio in FY19.

### Annual expenditure on our environmental portfolio

	FY19		FY18	
	Rand millions	US\$ millions	Rands millions	US\$ millions
<b>South Africa</b>				
Implementation of environmental control	90	6.3	71	5.6
Mine rehabilitation projects	79	5.6	86	6.7
<b>Papua New Guinea</b>				
Implementation of environmental control	30	2.1	24	1.9
<b>Harmony – Total</b>	<b>199</b>	<b>14.0</b>	<b>181</b>	<b>14.2</b>

## Environmental incidents

We monitor, report and remediate environmental incidents, including direct or indirect discharges of water beyond our mining area in terms of environmental management plans. Environmental incidents are classified on a scale from 1 to 5. We report significant incidents at level 3 and above (serious medium-term environmental effects to significant impacts on sensitive species, habitats or ecosystems).

In FY19, we reported two significant incidents in South Africa and two in Papua New Guinea.

Location	FY19	Description	Mitigating action
<b>Kalgold plant</b>	Q1	A dust fallout resulted in relevant dust thresholds being exceeded. There was an incidence of fallout dust readings exceeding the relevant threshold. This was fugitive dust from a tailings dam.	Dust allaying interventions and vegetation on the benches of the tailings facility
<b>Hidden Valley</b>	Q1	Non-compliance with the environmental permit was recorded at the Nauti Compliance point. The presence of Weak Acid Dissociable Cyanide arose from under-dosing of reagents at the water treatment plant. From the monitoring results, this did not significantly impact the environment. Non-compliance remained below the human health criteria of 0.07mg/l for drinking water.	Remedial measures implemented included a review of processing procedures to safeguard against a repeat incident
<b>Hidden Valley</b>	Q2	A further breach of the environmental permit criteria for Weak Acid Dissociable Cyanide was recorded at the Nauti compliance point. The cause was identified as the pipeline configuration not being returned to the tailings storage facility. No significant impact to the environment was recorded and the non-compliance remained below human health (drinking water) criteria.	Further remedial measures were implemented to improve operational control. These focused on reconfigurations to the pipeline network, improved in-line and real-time monitoring capability, revisions to administrative controls such as trigger, action and response plans, and improved analytical reporting and accuracy of sample data.
<b>Saaiplaas plant (Phoenix operation)</b>	Q4	Spillage from a slurry pipeline resulted in reclaimed tailings leaking onto the adjacent property. This was a very localised spillage onto impacted land.	The leakage was repaired immediately together with a clean-up of the tailings slurry spillage. This is supported by a pipeline replacement programme currently underway. The impact was minimal due to the rapid response and communication with the farmer affected

# ENVIRONMENTAL MANAGEMENT AND STEWARDSHIP

CONTINUED

## Setting environmental targets

In FY13, Harmony sought to measure relevant key performance indicators against environmental targets to monitor performance and inform decision making. An initial five-year target period was set, from FY13 to FY17. Revised targets were set for FY18 to FY22. In March 2018, Harmony acquired Moab Khotsong and its inclusion has resulted in noticeable increases in key performance indicators measured against many of our environmental targets. As a result, Harmony has revised the FY17 baseline data by including a full year's set of data from Moab Khotsong for FY19. Notwithstanding the change in baseline, Harmony is still aiming to deliver against its five-year targets.

### Group environmental targets

		Current targets				Previous targets		
		Group aggregate targets				Performance against previous group aggregate targets: FY13-FY17		
	5-year target: FY18 – FY22 (%)	FY19			10-year target: FY18 – FY27 (%)	Target (%)	Actual (%)	Achieved
		Target (%)	Actual (%)	Achieved				
Energy								
Reduce absolute electricity consumption (MW)	5	1	2	✓	7	3	17	✓
Electricity intensity (kWh/tonne milled)	5	1	16	✓	7	2	4	✓
Total carbon emission intensity reduction (tCO <sub>2</sub> /tonne milled)	5	1	16	✓	5	2	4	✓
Renewable energy (% of total electricity consumed)	10	2	4		30% of energy mix	No target		
Diesel intensity (kL/tonne milled)	2	0.4	1	✓		No target		
Petrol intensity (kL/tonne milled)	2	0.4	10	✓		No target		
Water								
Reduce water used for primary activities (kL)	7	1.4	7.5	✓		4.5	11	✓
Water intensity (kL/tonne milled)	7	1.4	21	✓		4.5	19	✓
Water recycling (%)	6	1.2	68	✓	80% recycled and zero discharge	5	89	✓
Waste								
Hydrocarbon* recycling (% reduction)	80	60	31	✗		No target		
Non-hazardous** recycling (% reduction)	80	60	100	✓	Zero to landfill	No target		
Land, biodiversity								
Reduce the land impacted footprint (available for rehabilitation)	3	0.6	<1	✗		2	2	✓
Environmental fines	0	0	0	✓		0	1	✗
Implement biodiversity action plans	100	60	50	✗	One offset project per region where there is a residual impact	80	50	✗

\* Hydraulic oil and lubricants

\*\* Timber, steel and plastic

### KEY

✓ Met or exceeded target

✗ Target not met

## REHABILITATION AND LAND MANAGEMENT

### South Africa

Rehabilitation ahead of closure is included in planning throughout the life of mine. In South Africa, the necessary rehabilitation funding mechanisms are in place and, where feasible, infrastructure is refurbished for alternative use. As only a small proportion of the land covered by our mining rights has been disturbed by mining, opportunities for progressive and concurrent rehabilitation are limited at this stage.

Our focus over the past two years has been on rehabilitating decommissioned shafts linked to ingress by illegal miners. Tailings dam rehabilitation, also a priority, is underway at Kalgold and planned for Welkom and Virginia for FY20. Reclamation of waste rock dumps is progressing well at Kalgold, Kusasaletu, Target, Tshepong Operations, ARM 7 and Saaiplaas 3.






Our rehabilitation strategy aims to reduce our environmental footprint through concurrent and final rehabilitation, thereby reducing our environmental liability, mitigating the risk of illegal mining and meeting the commitments made in our environmental management programme (EMP). This has helped to ensure the safety and security of our employees and communities, and has continued to ensure consistent employment and opportunity for approximately 150 persons from the local community.

Since formal rehabilitation began in 2011, we have demolished 45 shafts and rehabilitated some old plant footprints. In order to effect linkages in the host community, we ensure that the rehabilitation operations have been sourced from the local community and capacitated to be effective businesses in the rehabilitation space.

We have also demonstrated intent to support legitimate, licensed artisanal miners operating on surface by making available defunct footprints and spillage sites to a local entrepreneur for clean-up and gold reclamation. This initiative is in its first year of implementation and we remain supportive of artisanal small-scale miners – applying safe mining methods.

Our programme to rehabilitate decommissioned operations has continued to reduce our environmental liability and eliminate potential safety and health risks. In the past year, we continued to focus on rehabilitating shafts and plants. Apart from demolishing shafts and hostels, we are broadening our scope to include ancillary services infrastructure that was used to support historic mining operations like training centres, old offices and the like. In total, there are 14 active rehabilitation sites, all of which are scheduled to be completed in FY20.

At St Helena 10 shaft, a formal closure plan has been compiled and will be submitted to the regulator for approval, following which we will apply for a closure certificate to cede the mining right and any latent liabilities to the state. There is a similar process underway at Kusasaletu where a final closure plan is being compiled detailing our planned closure methodology to be submitted for approval by the regulator.

Demolition and rehabilitation FY19			
Demolition	Merriespruit 1 shaft Harmony 2 shaft training centre Harmony 4 Hostel Brand 5 shaft Eland Hostel Brand 3 waste rock profiling Freddie main offices ARM 4 and 6 headgear Freddie 9 shaft		
			
Rehabilitation	Kalgold tailings facility Free State re-established vegetation		
			
Reclamation and repurposing	Artisanal small-scale mining		
			



# ENVIRONMENTAL MANAGEMENT AND STEWARDSHIP

CONTINUED

## Land rehabilitation liabilities (Rm)

	FY19	FY18	FY17	FY16	FY15
South Africa	2 884	2 919	2 180	2 170	2 210
Papua New Guinea	1 039	1 336	1 391	826	675
<b>Total</b>	<b>3 923</b>	<b>4 255</b>	<b>3 571</b>	<b>2 933</b>	<b>2 796</b>
(US\$m)	278	308	166	150	230

(Refer to the 20-F for further detail on risks and liabilities)

## Papua New Guinea

Most disturbed areas within the Hidden Valley mining lease remain active, however, progressive rehabilitation is undertaken where possible with a view to stabilising exposed areas to prevent ground movement proximal to critical infrastructure and to limit off-site sediment transport. In FY19, rehabilitation activities included steep slope stabilisation, erosion remediation projects and the ongoing maintenance of previously rehabilitated areas.

Five hectares of new site rehabilitation and maintenance work was undertaken on the Western Sector waste rock dump and 4 hectares of slope stabilisation works were undertaken at the Hamata pit and the southern abutment of the tailing storage facility. A major erosion remediation project was completed at Puruang Valley and a further four projects are planned for FY20.

Building on work completed in previous reporting periods, Hidden Valley submitted its mine closure plan to the regulator during FY19. This plan presents Harmony's proposed closure philosophy which is aligned with the cessation of mining in 2023. The proposed closure end land uses will be a key focus of the future stakeholder engagement programme to achieve endorsement of the current closure intent, or modification thereof. A further focus in the forthcoming year will be to create a State of Papua New Guinea working group to secure approval of the mine closure plan and document the broader closure and relinquishment strategy to be followed in the absence of a formalised closure framework. Technical work programmes to inform closure designs and refine closure liability estimates are ongoing.

## BIODIVERSITY AND CONSERVATION

### South Africa

Most long-life South African sites have biodiversity management plans, which are implemented either through their respective mine closure plans, environmental management plans or specific biodiversity action plans. To ensure compliance, numerous environmental projects are being implemented throughout our operations, in line with the United Nations SDGs.

Apart from Kalgold which needs to conserve the protected Camel Thorn (*Acacia erioloba*) tree, our operations do not operate in sensitive or protected environments. Nonetheless, we acknowledge that we do have important fauna and flora in our areas of operation and aim to protect and preserve these species where possible. Conservation and protection are chief tenets of our land management strategy.

Over the next five years, Harmony plans to implement our biodiversity action plans and, within the next 10 years, we aspire to participate in at least one offset initiative in each of our operating regions.

**Alien and invasive plant management:** An alien invasive plant eradication project continues to minimise growth and infestation of alien species to ultimately eradicate these plants. Areas of infestation are first mapped and then divided into smaller management units to enable prioritisation and appropriate planning. To date, Harmony has cleared more than 1 300ha and has now added a further 1 088ha cleared during the past year.

**Flamingo conservation programme:** Studies to complete the proposed Lesser Flamingo Conservation Project in Welkom were delayed as a conservation site in Kimberley required involvement by relevant stakeholders, highlighting the increasing importance of contributing towards conservation of the bird. Project design and strategy for the construction of a Lesser Flamingo bird island will be done in collaboration with the local municipality and non-profit organisations.

**Final land use:** As part of its socio-economic development strategy, Harmony is targeting four applications, which have been integrated into our social and labour plan (SLP) commitments:

- Agriculture and agri-processing projects at Doornkop, Moab Khotso and Kusalethu
- Alternative energy projects including bio-energy and solar projects
- Conservation initiatives
- Industry applications



Bio-energy and rehabilitation project – Free State

## Papua New Guinea

Hidden Valley is not in a biodiversity-protected area but five species on the International Union for Conservation of Nature Red Data List are found in the vicinity of the mine. These include tree kangaroos, nectar bats, harpy eagles and long-beaked echidna, which are not endemic to the Hidden Valley area. There is no evidence to suggest that the mine's operations have affected these species.

For the Wafi-Golpu project, the Environmental Impact Statement submitted to the State of Papua New Guinea during the previous reporting period presents block cave mining as the optimal mining method to target the ore body. The selection of this underground method will reduce the surface footprint of the project, in comparison with open-pit mining and large-scale sub-level cave underground mining, and significantly reduce the amount of waste rock generated by the project.

A further key measure to manage the impacts of the proposed Wafi-Golpu project has been the selection of deep-sea tailings placement as the preferred tailings management method. This decision is based on numerous baseline oceanographic studies as well as trade-off studies assessing deep-sea tailings placement compared to terrestrial tailings disposal alternatives.

Extensive stakeholder engagement was undertaken in relation to the Wafi-Golpu project during FY19 in support of the assessment of the Environmental Impact Statement. This included roadshow consultations led by the regulator and meetings with mine area, infrastructure corridor and coastal area communities on the project, its predicted impacts and the results of ongoing investigations and technical assessments. A number of these engagements have included representatives from national and provincial government entities.

During FY19, the Papua New Guinea Conservation and Environment Protection Authority engaged three independent peer reviewers to assess the Wafi-Golpu project's Environmental Impact Statement. Permitting progress is presently on hold following an application for judicial review of the project's Memorandum of Understanding by the Morobe Governor. A stay order was issued by the National Court preventing advancement of permitting activities until the judicial review is completed.

## ENERGY MANAGEMENT – OPTIMISING USE AND REDUCING CARBON EMISSIONS

Our extractive processes are energy intensive with the cost of electricity contributing close to 15.8% of operating costs at our South Africa operations. Consequently, our energy and climate change policy is underpinned by economic and ecological imperatives.

Our focus is on managing energy efficiencies and reducing carbon intensities through the life cycle of our operations. We are also looking to diversify our energy mix, moving toward the increased use of renewable energy where appropriate. It is our aspiration to replace 30% of the carbon-based electricity consumed in South Africa with renewable energy within the next three years. Refer to our *CDP Climate Change* report submitted in July 2019 for further disclosure.

Harmony endeavours tirelessly to reduce energy consumption and greenhouse gas emissions, adapt to climate change and diversify our energy mix by:

- promoting energy efficiency at our deep-level mines in South Africa
- optimising and rebalancing our asset portfolio
- promoting an alternative energy mix
- aligning our rehabilitation programme with the green energy agenda

The decrease in energy use in FY19 is attributed to numerous energy-saving initiatives. See *Operational excellence programme* and *CDP Climate Change* for further information.

Our energy consumption has declined by 3.4% over the past five years (excluding Moab Khotsoong operations) and our intensity use by 13%, which is in line with the annual targeted reduction. These declines have in turn contributed to reduced greenhouse gas emissions and water consumption.

## South Africa

Generally, Harmony consumes energy in the form of electricity purchased from the national power utility, Eskom, which uses coal-fired power stations. There is some scope for procuring renewable energy and we are active in this space but, until the power purchase agreement is concluded, we are still dependent on Eskom's renewable sources. Eskom's electricity tariffs have risen by more than 400% since 2008 and, given the relatively significant contribution to operating costs, increases exceeding 8% have an impact on the sustainability of our operations. We are therefore intent on reducing electricity consumption.

Our energy efficiency-initiatives focus on efficient mine cooling, compressed air, water management and ventilation, as well as an improved energy mix with emphasis on sustainable renewable energy, particularly solar power and bio-energy in the short term. We have improved our capacity to generate solar power, which has helped decrease our power consumption and energy use intensity.

## Energy consumption

Energy consumption (MWh)	FY19	FY18	FY17	FY16	FY15
South Africa	3 209 411	2 458 423	2 537 944	2 542 463	2 608 157
Papua New Guinea	<sup>2</sup> 131 266	<sup>3</sup> 90 298	90 380	54 976	59 218
<b>Total</b>	<b><sup>1</sup> 3 340 677</b>	<b>2 548 721</b>	<b>2 628 324</b>	<b>2 597 439</b>	<b>2 667 375</b>
<b>Consumption intensity (MWh/tonne treated)</b>	<b>0.12</b>	0.11	0.14	0.13	0.15

<sup>1</sup> Increase in energy consumption driven by Harmony's acquisition of Moab Khotsoong

<sup>2</sup> Includes Papua New Guinea diesel consumption used to produce electricity (13 900MWh)

<sup>3</sup> Although full year production included, the plant did stand for planned shutdown

# ENVIRONMENTAL MANAGEMENT AND STEWARDSHIP

CONTINUED

## Operational excellence programme – technology and innovation

As part of Harmony's operational excellence programme, a specialist has been employed to improve overall efficiency at our operations, particularly environmental conditions underground, equipment and systems efficiency as well as service delivery. We have thus moved into the fourth industrial revolution with technologies that assist in identifying the root causes of inefficiencies and finding cost-effective solutions.

More than 200 initiatives have been implemented with cumulative cost savings, over the past five years, of R450 million. Projects implemented in FY19 enabled savings of R45 million (53 304MWh) as well as significant reductions in indirect greenhouse gas emissions and water consumption. Other positive impacts include improvements to the consumption of water and compressed air, as well as ventilation, underground.

### Implemented technologies:

- Intelligent real-time energy management systems automatically control compressed air, water reticulation, ventilation and ore transportation to reduce energy consumption and enhance safety.
- A data management system facilitates capturing, centralisation, validation, management and reporting of environmental and operational information. As a management toolbox, it improves access to environmental data and enables effective environmental management, including monitoring of water consumption and carbon dioxide emissions as well as performance against targets. Storage of environmental data in a central electronic repository, with supporting documentation, helps expedite data validation, reinforces accurate decision-making and improves environmental management. By automatically comparing data with the source documents, annual internal audits and travel to mine sites have become redundant as auditors can log in externally. Developed and implemented by independent environmental efficiency specialists, Harmony began using this system in June 2019.
- Condition monitoring of infrastructure and systems automatically analyses millions of data points daily to predict failures and identify inefficiencies. When problems are detected, a report is generated automatically and sent to relevant managers.
- Digital twinning and simulation technologies have been identified for strategic future mining. A digital twin is a computer-generated model of a mine that enables monitoring of the entire operation in real time. Integrating simulation capabilities into the digital twin assists with identifying the causes of inefficiencies. The simulations are also used for "what if" analyses and to predict constraints.

In addition, Harmony uses Pelton turbines that convert the energy generated by water sent underground into electricity. Tshepong Operations and Moab Khotsong are also two of a few mines in the world that use three-chamber pipe feeder systems (3CPFS) technology to extract water from mines more cost-effectively.

Real-time maintenance of all operational excellence systems is conducted daily by dedicated personnel.

## Key energy saving initiatives implemented in FY19

Over the past 10 years, although our mines have become deeper, energy efficiency initiatives have resulted in significant savings. In FY19, collaboration with operational excellence specialists reduced energy intensity by 5% compared to FY18 (without considering the Moab Khotsong acquisition and discontinued operations).



Doornkop

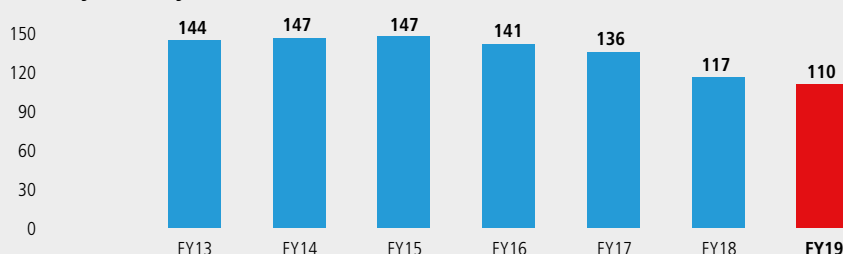
## Energy management

### Key energy saving initiatives implemented in FY19

Project description	Annual energy savings (MWh)	Annual greenhouse gas savings <sup>1</sup> (t CO <sub>2</sub> )	Annual water savings <sup>1</sup> (ML)
<b>Kusasaletu</b>			
Compressed air network optimisation	12 258	11 890	15 935
Water reticulation optimisation	7 051	6 839	9 166
<b>Unisel</b>			
Compressed air optimisation	9 763	9 470	12 692
Ventilation and refrigeration optimisation	10 088	9 785	13 114
<b>Moab Khotsong</b>			
Refrigeration optimisation	4 648	4 509	6 042
<b>Tshepong Operations</b>			
<i>Tshepong section</i>			
Refrigeration optimisation	6 720	6 518	8 736
Compressed air network optimisation	4 990	4 840	6 487
<i>Phakisa section and Nyala</i>			
Compressed air network reconfiguration	6 183	5 998	8 038
<b>Masimong</b>			
Water reticulation optimisation	4 773	4 630	6 205
<b>Doornkop</b>			
Compressed air supply optimisation	4 881	4 735	6 345

<sup>1</sup> Indirect CO<sub>2</sub>e and water savings (Eskom)

### Electricity intensity (kWh/tonnes)



## Papua New Guinea

Our operations are designed to be energy efficient. As Papua New Guinea's grid power is generated in part by renewable hydro-power emission intensities are much lower at Hidden Valley. Although Hidden Valley has historically experienced interruptions in its supply of grid power, but the reliability of supply has significantly improved over the past 12 months. This is reflected in the large decrease in diesel-generated electricity consumed during FY19.

The proportion of grid power used in FY19 was a record high of 89% (FY18: 66%). In FY19, 13 900MWh of diesel-generated electricity was consumed (FY18: 30 900MWh) representing a 55% reduction on the previous period's consumption. The increase in total energy consumption recorded for FY19 reflects the increased throughput and gold production at Hidden Valley during the year.

To ensure a stable, baseload power supply, the Wafi-Golpu project is planning to use self-generated power using intermediate fuel oil. Alternative options, including renewable energy, continue to be assessed.



# ENVIRONMENTAL MANAGEMENT AND STEWARDSHIP

CONTINUED

## Direct and indirect energy consumption (MWh)

	FY19	% of total energy used	FY18	% of total energy used	FY17	% of total energy used	FY16	% of total energy used	FY15	% of total energy used
<b>South Africa</b>										
Direct <sup>1</sup>	–	–	–	–	–	–	–	–	–	–
Indirect <sup>2</sup>	3 209 410	100	2 458 423	100	2 537 944	100	2 542 463	100	2 608 157	100
<b>Total</b>	<b>3 209 410</b>	<b>100</b>	<b>2 458 423</b>	<b>100</b>	<b>2 537 944</b>	<b>100</b>	<b>2 542 463</b>	<b>100</b>	<b>2 608 157</b>	<b>100</b>
<b>Papua New Guinea</b>										
Direct <sup>1</sup>	13 927	10.6	30 931	34	38 839	41.9	14 010	25.5	10 355	17
Indirect <sup>3</sup>	117 338	89.4	59 367	66	52 542	58.1	40 966	74.5	48 863	83
<b>Total</b>	<b>131 265</b>	<b>100.0</b>	<b>90 298</b>	<b>100</b>	<b>91 381</b>	<b>100</b>	<b>54 976</b>	<b>100</b>	<b>59 218</b>	<b>100</b>
<b>Harmony</b>										
Direct	13 927	0.4	30 931	0.1	38 839	0.1	14 010	0.5	10 355	0.4
Indirect	3 326 748	99.6	2 517 790	99.9	2 590 482	99.9	2 583 429	99.5	2 657 020	99.6
<b>Total</b>	<b>3 340 675</b>	<b>100.0</b>	<b>2 548 721</b>	<b>100</b>	<b>2 629 321</b>	<b>100</b>	<b>2 597 439</b>	<b>100</b>	<b>2 667 375</b>	<b>100</b>

<sup>1</sup> Diesel

<sup>2</sup> Non-renewable: coal-fired power stations (Eskom)

<sup>3</sup> Renewable energy: hydropower-generated electricity

## Addressing climate change by optimising our energy use

Harmony has disclosed its carbon-related impact through the CDP for several years, most recently for 2019. Internalising carbon pricing into our strategic and operational plans has been entrenched in the way we do business, especially with the advent of the carbon tax in South Africa. The carbon tax has been built into our financial models which are used for impairment testing, impacting the recoverable amount. This aligns with the principles of CDP and the Task Force for Climate-related Financial Disclosures (TCFD) requirements.

### CDP and the Task Force for Climate-related Financial Disclosures

Harmony has for several years, including 2019, been disclosing its carbon-related impact and performance through its CDP Climate Change submission. Going forward, Harmony will be aligning its annual carbon-related reporting with best practice for global climate reporting and we will be structuring our annual reporting in accordance with the requirements and guidelines of the Task Force for Climate-related Financial Disclosures. We will be focusing on four key areas – governance, strategy, risk management and metrics and targets – as defined by the Task Force for this year's report as we begin integrating the its requirements with our existing reporting structures.

Harmony monitors the opportunities and risks presented by climate change. These are included in our life of mine plans and mine closure plans and communicated to the board throughout the year. Our climate strategy is then reviewed annually with a view to substituting and/or augmenting conventional electricity use (fossil fuel and grid energy) with renewable energy.

In line with our strategy for the next five years to adapt, conserve and move towards an alternative energy supply mix, we are reducing our grid-electricity consumption and greenhouse gas emissions with

year-on-year and multi-year targets. To this end, we have implemented a suite of energy-efficiency initiatives and closed carbon-intensive (high-energy) shafts. We plan to increase the use of green energy derived from hydropower, solar power and biomass.

To mitigate the risk of climate change, we have:

- rebalanced our asset portfolio by closing several carbon-intensive operations as they have reached the end of their geological life
- decommissioned and sealed old mining shafts
- received environmental authorisations for three solar projects with final procurement processes currently being concluded

### Energy management

- Harmony is currently considering several renewable and alternative energy projects in South Africa:
- bio-energy project
- three 10MW photovoltaic power plants in the Free State on Harmony-owned land
- initiatives to reduce electricity consumption – these have reduced energy consumption across the group by 21% since 2010 (excluding Moab Khotsong).

The cost savings in actual electricity consumed were R29.7 million (excluding Moab Khotsong) year-on-year. Despite our electricity consumption increasing as a result of Moab Khotsong's acquisition, Harmony has measured total cost savings resulting from the energy savings initiatives implemented amounting to R44.2 million and R69.5 million valued added for maintaining the existing energy savings initiatives in FY19. Some of the savings were neutralised due to an increase in energy consumption for operational requirements.

Demand-side management is encouraged by Eskom with rewards for making more efficient use of tariffs. Initiatives to this end include scheduling of pumping, air compression, cooling, hoisting and ventilation at off-peak periods.

Projects funded by Harmony are sustainable in the long term, and include the use of energy-efficient underground fans, managing the compressed air at refuge chambers and workplaces, installation of standalone compressors, accurate measurement of compressed air and online electricity consumption monitoring.

### Group carbon emissions

	FY19	FY18	FY17	FY16	FY15
<b>Scope 1 emissions breakdown by source (CO<sub>2</sub>e tonnes)</b>					
Diesel	129 675	128 505	108 306	53 278	64 244
Explosives	2 294	2 135	1 953	1 838	1 748
Petrol	1 143	844	784	777	909
<b>Total</b>	<b>133 112</b>	<b>131 484</b>	<b>111 043</b>	<b>55 893</b>	<b>66 901</b>
<b>Scope 1 emissions breakdown by source (%)</b>					
Diesel	97.4	97.7	97.5	95.3	96
Explosives	1.7	1.6	1.8	3.3	3
Petrol	0.9	0.7	0.7	1.4	1
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>
<b>Total scope 1, 2 and 3 emissions (CO<sub>2</sub>e tonnes)</b>					
Scope 1	133 112	131 484	111 043	55 893	66 901
Scope 2	*3 192 750	2 442 256	2 512 565	2 580 600	2 686 401
Scope 3	532 704	439 551	445 033	615 456	686 233
<b>Total</b>	<b>3 858 566</b>	<b>3 013 291</b>	<b>3 068 641</b>	<b>3 251 949</b>	<b>3 439 535</b>
<b>Total scope 1, 2 and 3 emissions (%)</b>					
Scope 1	3	4	4	2	2
Scope 2	*83	81	82	79	78
Scope 3	14	15	14	19	20
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

### Carbon emissions intensity

	FY19	FY18	FY17	FY16	FY15
<b>Scope 1 emissions intensity by source (CO<sub>2</sub>e tonnes/tonne treated)</b>					
Diesel	0.0050	0.0057	0.0055	0.0029	0.0036
Explosives	0.0001	0.0001	0.0001	0.0001	0.0001
Petrol	0.00004	0.00004	0.0004	0.0001	0.0001
<b>Total scope 1, 2 and 3 emissions intensity (CO<sub>2</sub>e tonnes/tonne treated)</b>					
Scope 1	0.0051	0.0061	0.0057	0.0031	0.0040
Scope 2	*0.1229	0.1090	0.1295	0.1428	0.1490
Scope 3	0.0205	0.0196	0.0229	0.0340	0.0380
<b>Total</b>	<b>0.1485</b>	<b>0.1347</b>	<b>0.1581</b>	<b>0.1799</b>	<b>0.1910</b>

\* The inclusion of Moab Khotsong for the full year – presents opportunities for operating efficiencies

### Responsible stewardship: suppliers and market

Harmony engages regularly with key and relevant suppliers in our supply chain, who indirectly contribute to our Scope 3 greenhouse gas emissions, to ensure that they have processes in place to monitor and manage their carbon and water footprints.

Rand Refinery, which smelts, evaluates, refines and fabricates the gold we produce for investment and retail clients, is also committed to internationally accepted responsible sourcing practices in terms of the London Bullion Market Association Responsible Gold Guidance as well as the Organisation for Economic Co-operation and Development Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High Risk Areas. The certified gold chain of custody is also audited independently in line with the requirements of independent bodies and enacted legislation.

Rand Refinery is ISO accredited in terms of 45001:2018, which replaced the OHSAS 18001:2007, ISO 9001:2015 and ISO 14001:2015 certifications.

# ENVIRONMENTAL MANAGEMENT AND STEWARDSHIP

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## Emissions management

Ventilation exhausts servicing our underground operations in South Africa expel air into the atmosphere. Harmony conducted a study to determine the make-up of the air, especially in relation to methane and concluded that the methane emitted occurs in trace concentrations, which is negligible.

Many of our gold plants have kilns, smelters and burners which require annual monitoring and assessment for submission to the relevant regulators. During our annual assessments, elements such sulphur dioxide and nitrous oxides are measured against an approved Air Emissions Licence. All relevant gold plants meet the regulatory requirement.

The main air quality concern remains dust fallout that impacts surrounding communities. A dust monitoring programme has been comprehensively updated for relevant operations. All historic monitoring points together with the methodology were re-evaluated and additional monitoring points have been added to the existing network for improved data collection and mitigation.

## OPTIMISING WATER USE, LIMITING OUR IMPACTS

Our water management policy sets the principles for water management at each of our operations in various climatic conditions. Papua New Guinea is characterised by its high rainfall tropical climate but, in contrast, Kalgold operates in a water-scarce environment. These conditions largely influence the water management strategies at each operation.

In high rainfall territories, we ensure that we hold as little water as possible so water discharge at Hidden Valley is a necessity. Surplus water is treated in the water-treatment plant to the prescribed standards before it is discharged into the Watut River system.

### South Africa

At many of our underground operations in South Africa, Harmony intercepts the aquifer to generate fissure water, which we then treat and use, thus liberating other fresh water supplies for other users in our society. At these operations, we maximise the use of underground water and have begun treating this water to meet quality standards for use in our operations as we pursue our goal of zero discharge.

At Kalgold, water availability is critical to business continuity and operational growth. Given the scarcity of water, Harmony ensures that what we use does not impact upstream and downstream users. We undertake stakeholder engagement with upstream and downstream users as well as the relevant regulators as this is critical to preserving and protecting this scarce resource.

Water in South Africa is generally deemed a scarce resource and, as a country, we have adopted an inter- and a multi-disciplinary approach to the management of our water resources by means of catchment management agencies. Harmony participates in the following catchment agencies:

- Far West Rand Technical Working Group
- KOSH Mine Water Forum
- Free State Government Task Team

### Doornkop agricultural project

A vegetable project, using excess potable water from the Doornkop water-treatment plant, is being established. For more information, see [Socio-economic development](#).

Additionally, as a result of the interconnectivity and contiguous nature of our orebodies, there are many mines operating within the same catchment area. This warrants a co-ordinated effort to manage the resource effectively. Harmony thus participates in the Far West Rand Technical Workings Group to collaborate on regional opportunities for water management and is also represented on the board of the Margaret Water Company in Orkney in partnership with Village Main Reef to manage the KOSH water basin.

In the western basin, Harmony and Sibanye-Stillwater are working collaboratively on the latter's closure programme for the Cooke shafts to ensure that the sealing programme inhibits any ingress to Doornkop operation. This ensures that we manage the impacts of our activities during the operating lives of our mines and that we are also focused on closure planning.

All our operations have site-specific water balances and water management plans in terms of which we operate, monitor and measure compliance.

For further information on water management, refer to the [CDP Water](#) report submitted in July 2019.



Doornkop

## Water use – measured

		FY19	FY18	FY17	FY16	FY15
Water used for primary activities	000m <sup>3</sup>	<b>123 158</b>	15 473	18 125	15 083	15 752
Potable water from external sources	000m <sup>3</sup>	<b>15 933</b>	12 646	12 486	13 854	13 132
Non-potable water from external sources	000m <sup>3</sup>	<b>7 225</b>	2 827	<sup>2</sup> 5 638	1 229	2 620
Surface water used	000m <sup>3</sup>	<b>4 042</b>	2 034	4 863	716	776
Groundwater used	000m <sup>3</sup>	<b>3 183</b>	793	775	513	1 844
Water recycled in process	000m <sup>3</sup>	<b>48 512</b>	40 435	41 112	38 821	38 338
Intensity consumption	000m <sup>3</sup> /tonne treated	<b>0.89</b>	0.69	0.93	0.80	0.87

<sup>1</sup> Increase is due to the inclusion of Moab Khotsong

<sup>2</sup> Increase in non-potable water consumption due to impact of drought on the Free State operations

In line with legislative requirements, integrated water-use licence applications were submitted to the authorities for each operation. Where water use licences have been received, Harmony has applied for amendments to take into account omissions, additional water uses required and to clarify certain aspects. Where possible, Harmony continues to apply best practice in water management.

Our strategy to reduce dependency on potable water, and to maximise our use of fissure and process water, began in 2013.

### Water conservation strategy

Our geohydrological assessments together with water balances are used to model the likely effects of a protracted drought on our operations. Success in reducing our water-use intensity is partly attributed to less wastage and reduced potable water use due to recycling and treatment.

Harmony installed two water-treatment plants at our Gauteng mines to treat fissure water to potable standards. A third treatment plant has been constructed in Free State at the Nyala shaft at Tshepong Operations at a cost of R16.8 million. This has had the added advantage of liberating potable water supply for other users, especially necessary during times of El Niño.

It is imperative that we continue to improve the efficiency of our water use in order to operate effectively under regulations that aim to reduce demand and consider community access to potable water from the same source.

- **Water conservation in the Free State:** In line with our strategy, we have built a third water-treatment plant in the Free State. This will ensure security of water, reduce water consumption and assist with water conservation. The plant will treat 2.8ML of water a day and will save R3.2 million in water bills annually. The three treatment projects will bring about a total saving of R5.6 million annually
- **Kalgold:** Situated in a water scarce area, Kalgold's D-Zone pit deposition ensures water is available for production with the surrounding borehole network augmenting water needs when necessary. Modified plant and tailings storage facilities have maximised the recovery of water for reuse; process water dams have been reinforced to increase storage capacity and minimise overflows; and efficient flow meters and valves have been installed

## CDP Climate Change and Water reporting

CDP, the non-profit global environmental disclosure platform, has again acknowledged Harmony as a global leader in corporate sustainability.

Harmony's scores for CDP Climate Change 2018 and CDP Water 2018 were A- and B respectively. In South Africa, no company scored an A for water.

According to the CDP, their 2018 reports, comprising reviews of more than 7 000 global companies, were produced at the request of more than 650 investor signatories managing assets worth US\$87 trillion.

CDP South Africa Water 2018 states: "South Africa is facing a water crisis caused by insufficient water infrastructure maintenance and investment, recurrent droughts driven by climatic variation, inequities in access to water and sanitation, deteriorating water quality, and a lack of skilled water engineers."

CDP South Africa Climate Change 2018 notes: "Exceeding [temperature increases of] 1.5 degrees globally, could have catastrophic impacts for South Africa which is physically and economically vulnerable to climate change."



# ENVIRONMENTAL MANAGEMENT AND STEWARDSHIP

CONTINUED

## Water conservation strategies

Water is a critical resource in South Africa and for mining. Harmony's main goal is therefore to reduce its dependence on water. It has also collaborated with operational efficiency specialists to simulate water reticulation networks at the different operations using Industry 4.0 technologies. These water studies have enabled Harmony to identify operational improvements in the water network resulting in monthly process water savings of 75ML and an annual potable water cost saving of R6 million.

The collaboration has also placed significant focus on ensuring continual awareness of water usage. Internal water reporting has become a key performance metric at the operations. Daily underground water reticulation analyses are done which immediately alert relevant personnel if intervention is required. Furthermore, water management systems have also been installed to manage and reduce inefficiencies. For example, these systems have contributed to a monthly improvement in chilled water usage at the Target mine of 35ML.

Results of the various efforts to reduce Harmony's water usage can be seen in the water used for primary activity key performance indicator. For the group as a whole, our operations have reduced water used in primary activities by 7.5% over the past two years while the water intensity has improved by 21% (see table below). The intensity improvement can be attributed to the increase in tonnes treated over the entire group.

## Water discharge

At Doornkop, we are licensed to discharge water but the treatment plant has mitigated the need for this. Only in the event of excess water will Harmony discharge treated potable water into the Klipspruit. In this reporting cycle there was no discharges from the operation.

The Kusasaletu operation has a water use licence permitting the discharge of water. We remain committed to optimising our water balance to achieve zero discharge. Notwithstanding this, there is discharge from Kusasaletu via the mine's golf course into the Varkenslaagtespruit. We estimate this to have been around 1ML per day on average. Water quality is in line with instream water quality objectives for the Wonderfonteinpruit and upstream and downstream monitoring underscores that there is no impact to the receiving environment. However, in order to achieve our objective of zero discharge at this operation, we plan to install a treatment plant in FY20.

Margaret Water Shaft, a shaft specifically being used to pump water from underground, was transferred to Harmony (66%) and Village Main Reef (33%) upon acquiring Moab Khotsoong operation. Most of the water is used by Harmony or surrounding users, however in some cases discharges are realised into the Vaal River. During 2019, the shaft had to discharge 562.4ML, averaging 1.5ML daily. The water quality is of a very high standard and meets in-stream Vaal River water quality standards.

## Group key performance indicators for water

Key performance indicator	Baseline FY17 <sup>1</sup>	FY19	Target reduction by 2022	FY19 reduction on baseline
Water used for primary activities (m <sup>3</sup> )	25 023 208	23 158 152	7%	7.5%
Water intensity (m <sup>3</sup> /tonne treated)	1.13	0.89	7%	21%

<sup>1</sup> Adjusted for Moab Khotsoong acquisition.

## Papua New Guinea

At Hidden Valley, steep topography, high rainfall and low levels of evaporation pose significant water-management challenges with the positive water balance resulting in a near-continuous discharge of water from the mine site to the environment. The main water-management techniques implemented are:

- controlled run-off of rainfall to prevent erosion and sediment entering the river system
- recycling of site water to limit the volumes of water stored on the tailings storage facility and requiring release to the environment
- treatment of wastewater prior to discharge

Point-source discharge to the receiving environment occurs to either Pihema Creek or the Upper Watut River from a cyanide detoxification plant adjacent the tailings storage facility. Compliance monitoring is undertaken at a point approximately 18km downstream of the discharge in accordance with the operation's Environment Permit.

Water quality monitoring during the year showed that all dissolved metals and physicochemical parameters complied with regulatory criteria at the Nauti compliance point. Two exceedances of Weak Acid Dissociable Cyanide were recorded, as described in the earlier *Environmental incidents* section.

Extensive monitoring programmes are in effect to understand the performance of the site's waste rock dumps and tailings storage facility, including assessment of sediment and run-off control measures.

Discharge of mine-related sediment into the Watut River drainage system has continually reduced over the last five-years with an ongoing focus on erosion control and sediment management.

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. Process water recycling is prioritised to limit as far as practicable the volumes extracted from the surface environment.

## Acid mine (metalliferous) drainage

Major sources of acid mine drainage include drainage from underground mine shafts as well as 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.

In our Free State operating area, Welkom, is a water-stressed environment and our environmental modelling confirms that there is no risk of a surface decant of acid mine drainage currently or beyond end of life. There is therefore no material risk to surface and groundwater sources in Welkom.

Geohydrological studies confirm the same outcome for Kalgold, Doornkop and Kusasaletu. That said, both Doornkop and Kusasaletu are situated in complex catchments compounded by the inter-connected nature of mining operations in the area. These operations participate in regional geohydrological and closure studies.

In Papua New Guinea, acid and metalliferous drainage may occur from landforms that contain potentially acid-forming material such as the waste rock dumps and ore stockpiles. Potential environmental impacts are mitigated by the construction of engineered waste rock dumps and the selective placement of potentially acid-forming waste rock within the dump.

A current focus of the closure work programmes is to understand the performance of the waste rock dumps at and beyond mine closure, with a view to formulating closure designs that preclude the occurrence of acid and metalliferous drainage.

# ENVIRONMENTAL MANAGEMENT AND STEWARDSHIP

CONTINUED

## OPTIMISING OUR USE OF MATERIALS

The primary materials consumed in conducting 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.

### Materials used

	FY19	FY18	FY17	FY16	FY15
Rock mined: ore and waste (000t)	47 095	43 578	33 150	27 606	29 948
Ore mined (000t)	25 980	22 441	19 402	19 739	13 041
Waste rock recycled (000t)	6 575	3 690	4 668	3 964	6 647
Slimes recycled (000t)	9 992	9 772	6 559	6 131	5 987
Liquefied petroleum gas (t)	1.3	1	0.47	0.54	1.14
Grease (t)	506	426	121	384	54
Cyanide (000t)	23.2	23.3	21.0	18.0	14.3
Petrol and diesel (000L)	48 742	48 461	40 811	20 298	24 464
Lubricating and hydraulic oil (000L)	3 163	2 744	2 768	2 291	2 772

## Cyanide management

Harmony is a signatory to the International Cyanide Management Code for the Manufacture, Transport and Use of Cyanide in the Production of Gold (Cyanide Code). All our major gold mining operations and most of our metallurgical plants have been certified compliant with the Cyanide Code. This excludes the Kalgold, Saaiplaas and Hidden Valley plants, which account for 21% of production, and the Joel plant, for which certification is being reassessed as the plant is being decommissioned.

Hidden Valley had an audit in FY19, the findings of which are being addressed before re-certification, which is targetted for FY20.

## MANAGING OUR WASTE

Effective waste management is a priority as it 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.

## Mineral waste

### Waste rock

Our mining and extractive processes generate mineral and non-mineral waste as well as emissions. Our mineral waste is characterised as tailings and overburden, often viewed as a resource in waiting. Harmony's year-on-year increase in mineral waste is due to waste stripping of the cutbacks at Hidden Valley. Waste rock is also generated from our underground operations in South Africa. 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.

Waste rock in general has no value as gold mineral resource, but generally has characteristics that make it useful as

- plant grinding media
- feed into the backfill plants
- physical characteristics present an opportunity for the aggregate industry

As part of our commitment to inclusive mining and in accordance with our social purpose, Harmony has ring-fenced some of its waste rock for local businesses and local entrepreneurs. This has enabled us to forge a supporting an enabling relationship as large-scale miner with legitimate licence artisanal operators in our host communities. Aggregate at Kalgold is currently being reclaimed and repurposed for market by a consortium comprising a seasoned aggregate producer Platistone Ltd, the local community and employees.

In Welkom, surplus waste rock is also being processed by local aggregate producers – OMV Crushers and Stone and Allied – and has been commercially sustainable for over five years. In Welkom, Harmony is working with the local community representatives of Allanridge and NCamiso – a 100% BEE entrepreneur – to establish an additional aggregate producer.

Harmony has established a five-year target to reclaim at least 10% of our total available mineral waste footprint, provided Harmony is able to access funds set aside in the environmental rehabilitation trust funds.

The situation differs in Papua New Guinea where there is limited opportunity to re-purpose waste material given the potentially acid forming nature of much of the waste. As far as practicable, suitable waste rock is reused on site in the ongoing construction of the tailings storage facility embankments.

Waste rock is often regarded as a resource to the aggregate industry. To this end, Harmony's rehabilitation efforts and downstream beneficiation efforts repurpose waste rock into aggregate at Kalgold, Welkom and Kusalethu. Many of these initiatives are developed to support local participation to beneficiate our waste into profit streams.

### **Management of tailings in Papua New Guinea**

Hidden Valley's advanced waste management systems have generated positive feedback from stakeholders, particularly the tailings storage facility, which is the first large facility of this type to be operated successfully in Papua New Guinea.

A magnitude 7.2 event earthquake was experienced some 55km north-north west of Hidden Valley on 7 May 2019. No significant ground movement, evidence of cracking or instabilities of concern were observed at the tailings storage facility following this earthquake event.

Approval to raise the tailings storage facility dam embankment to RL2015 was granted by the Papua New Guinea Chief Inspector of Mines on 31 January 2019, contingent on a series of conditions focused on:

- the management of safety critical risk controls
- appropriate governance and supervision
- compliance with ANCOLD 2012a
- safe and effective maintenance, construction and operation of the facility

There was thus considerable focus during FY19 on the performance and risk management of the tailings storage facility and the review, refining and upgrade of emergency response strategies. As an additional layer of corporate governance, an Independent Technical Review Board was appointed in 2018 to conduct annual reviews of the facility.

Actions during FY19 relating to tailings dam management and compliance with the conditions of approval for the facility included:

- provisions for emergency pumping capability from the facility and a revision to the trigger, action and response plan pertaining to the release of untreated water in the event of an emergency to safeguard the dam structure
- the design, installation and commissioning of an early warning siren system and two-way communications in villages downstream of the facility
- completion of tailings storage facility flood modelling under extreme scenarios to determine inundation extents in downstream communities and associated requirements for emergency preparedness and response
- extensive engagement and education programmes with downstream communities and provincial and national government representatives in relation to the early warning system and flood modelling findings. Further work continues to install flood markers and provide educational material to the three relevant communities
- increased resourcing within the organisation to improve dam governance and oversight
- continued independent third-party annual reviews and further visit by the appointed Independent Technical Review Board

At the Wafi-Golpu project, deep sea tailings placement has been selected as the preferred tailings management option based on consideration of long-term safety, engineering, environmental, social, cultural heritage and economic factors. Deep sea tailings placement is presently adopted in four countries and is in effect at three operations within Papua New Guinea.



Hidden Valley



# ENVIRONMENTAL MANAGEMENT AND STEWARDSHIP

CONTINUED

## Tailings management

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 Tswelopele reclamation initiative (Phoenix operation). Residual economic value can be generated from projects such as our Tswelopele reclamation initiative (Phoenix operation) and more recently the Central Plant reclamation operation.

In the past three years, 60.2Mt have been processed and deposited onto existing tailings dams.

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

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 orebody may be associated with metals or salts if these are characteristic of the orebody.

As tailings contain impurities or pollutants, they are placed on tailings dams engineered to contain the slime in line with our water management programme.

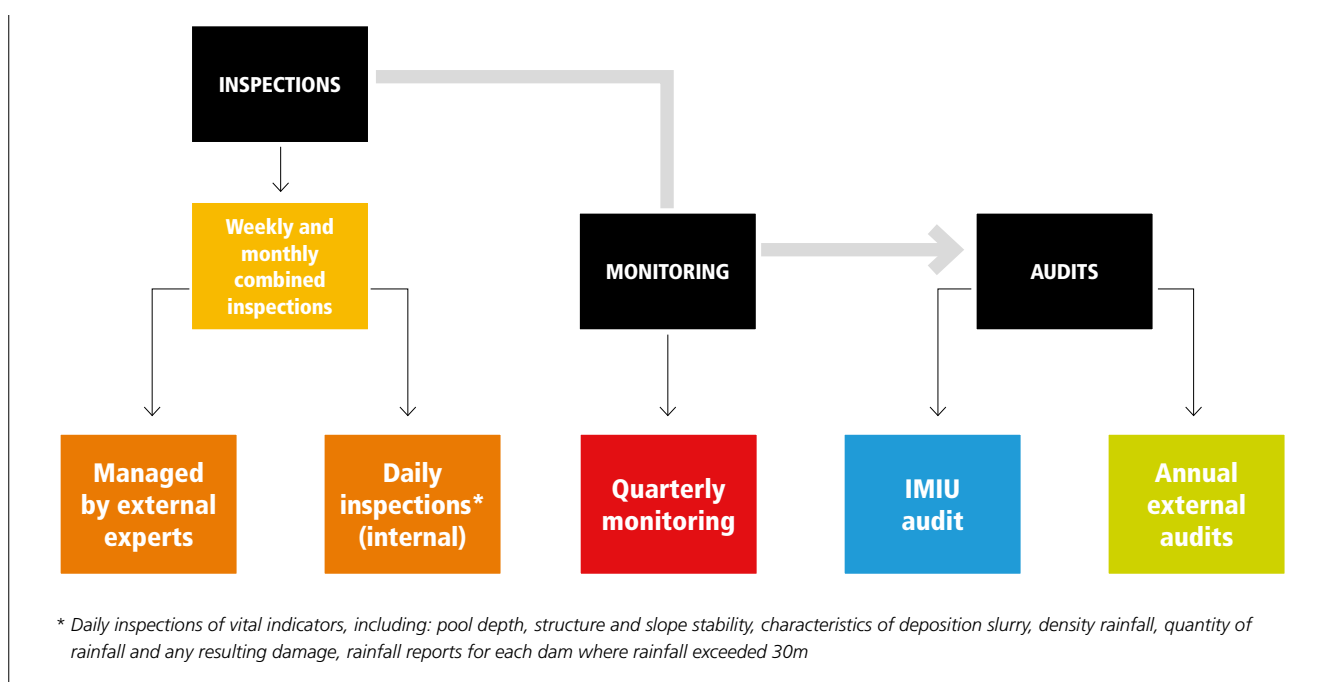
The fines are also collected and deposited on the tailings. Water is collected from toe drains and penstocks, and channelled to return water dams where it is available for reuse by the plant.

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 (contaminant plumes) could be contained in the tailings storage or water-management facilities.

Tailings dams have received significant coverage following the two recent international tailings dams' failures. Harmony has always operated and engineered its tailings dams in line with good practice and our operating and environmental codes. In response to these high-profile tailings dam failures, Harmony has undertaken annual audits with more vigour.

Harmony has received letters of comfort from its independent professional engineering consultants who provide oversight and surveillance services related to Harmony's tailings storage facilities.

## MANAGEMENT OF TAILING STORAGE FACILITIES



## Non-mineral waste

In FY19, 10 621t of waste (plastic, steel, wood and paper) was recycled (FY18: 16 939t). Significantly less non-mineral waste is generated than mineral waste (less than 0.2% of total waste).

Plastics, steel, paper and timber generated by processing operations are produced in lesser volume than mineral waste. This non-mineral waste is managed by recycling or reuse, off-site treatment, 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.

Non-mineral waste is classified into hazardous and non-hazardous waste.

Hydrocarbons and cyanide are the chief hazardous waste streams at our operations. We aim to minimise much of the waste streams going to landfill by sending them to accredited institutions such as the Rose Foundation for repurposing while the remaining hydrocarbon waste is sent to appropriate landfill sites.

### Type of waste

	FY19	FY18	FY17	FY16
<b>Oils and grease waste generated</b>				
Grease used (tonnes)	426	121	384	504
Lubricating and hydraulic oil used (million litres)	3.163	2.744	2.768	2.291
Oils to repurpose hydrocarbons to landfill – Oil recycled (000 litres)	978	N/A	N/A	N/A
<b>Hazardous waste generated</b>				
Tailings (million tonnes)	24.2	21.4	19.8	18.3
Hazardous waste to landfill (tonnes)	399.24	343.7	275.4	N/A

As we actively promote the recycling of our waste streams, we have initiated a reclamation programme that harvests underground equipment and infrastructure that is sent to the salvage yard where it is repurposed for potential consumption by other operations. In keeping with our transformation objectives, this initiative has seen the development, emergence and promotion of local entrepreneurs in the core mining sector.

### Waste generated

	*FY19	FY18	FY17	FY16
Timber	2 377	1 085	1 504	N/A
Steel	7 765	5 699	6 944	6 229
Plastic	479	314	459	N/A

\* Consumption of materials and waste generated increased with the inclusion of Moab Khotsong

## OUTLOOK/ FUTURE PRIORITIES

In addition to the five- and ten-year targets set, we will focus on:

- Continued investment in sources of renewable energy and efforts to reduce energy consumption and enhance efficiencies
- Explore initiatives to enhance water efficiency and increase proportion of water recycled, especially at our South African operations
- Implement initiatives to reduce non-hazardous waste with ultimate aim of zero waste to landfill
- Continue land rehabilitation programme, in South Africa and Papua New Guinea, so as to reduce our mining footprint and make available land for alternative economic uses such as agriculture

Our environmental planning includes planning for mine closure. Certain operations are facing closure and their closure plans, which encompass both the environmental and socio-economic impacts of closure, have detailed steps to mitigate the effects of closure and to ensure that, post-mining, the land will support alternative, sustainable and economically viable activities in the longer term.

We will remain mindful of the 2030 targets as set in the environment-related SDGs and monitor our progress towards achieving them. In addition, we will implement steps to comply with the World Gold Council's principles for responsible gold mining within three years.

# MINING CHARTER II – COMPLIANCE SCORECARD

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 Mining Charter targets set in 2014.

A declaratory order issued by a majority judgement of the High Court of South Africa in April 2018 recognised the continuing consequences of previous black economic empowerment transactions.

The latest version of the Mining Charter (referred to as Mining Charter III) was gazetted by the Minister of Mineral Resources in September 2018.

Harmony, through the Minerals Council South Africa, is engaging with the Department of Mineral Resources and Energy on certain issues of concern and we are optimistic that we may reach an amicable solution.

For further information and progress related to the revised Mining Charter, see the Minerals Council's website, [www.mineralscouncil.org.za](http://www.mineralscouncil.org.za).

## PROGRESS AGAINST MINING CHARTER TARGETS

Although negotiations on the implementation of Mining Charter III continue, our work in South Africa has continued towards fulfilling our commitments, in line with the underlying spirit of the 2014 Mining Charter (Mining Charter II) and our overall commitment to transformation. Our focus in the coming year will be on aligning with Mining Charter III.

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

The table below summarises our performance against the targets for each pillar of Mining Charter II for the calendar year ended 31 December 2018.

### Mining Charter II scorecard for calendar year 2018 (January – December)

	Compliance target	Target	Weighting	Progress	Score
<b>1. Reporting</b>					
Has the company reported its level of compliance with the Mining Charter for the calendar year?	Report annually	Yes	Yes/No	Yes	Yes
<b>2. Ownership</b>					
Minimum target for effective ownership by historically disadvantaged South Africans	Meaningful economic participation Full shareholder rights	26%	Yes / No	>26%	Yes
<b>3. Housing and living conditions</b>					
Conversion and upgrading of hostels to attain an occupancy rate of one person per room	Occupancy rate of one person per room	100%	Yes / No	100%	Yes
Conversion and upgrading of hostels into family units	Family units established (as part of mine community development)	Yes	Yes / No	*No	No
<b>4. Procurement and enterprise development</b>					
Procurement spend with black economic empowerment entities	Capital goods	40%	5%	73%	5%
	Services	70%	5%	72%	5%
	Consumable goods	50%	2%	77%	2%
Multinational suppliers' contribution to a social fund	Multinational supplier contributions	0.5%	3%	**0%	0%
<b>5. Employment equity</b>					
Diversification of workplace to reflect the country's demographics and attain competitiveness	Top management (board and executive management)	40%	3%	61%	3%
	Senior management	40%	4%	50%	4%
	Middle management	40%	3%	51%	3%
	Junior management	40%	1%	62%	1%
	Core skills	40%	5%	67%	5%

**Mining Charter scorecard for calendar year 2018 (January – December)** continued

	Compliance target	Target	Weighting	Progress	Score
<b>6. Human resource development</b>					
Development of the requisite skills, including support for South African-based research and development initiatives intended to develop solutions in exploration, mining, processing, technology efficiency (energy and water use in mining), beneficiation as well as environmental conservation	Expenditure on human resource development as a percentage of payroll	5%	25%	5%	25%
<b>7. Mine community development</b>					
Conduct ethnographic community consultative and collaborative processes to delineate community needs analysis	Up to date project implementation	100%	15%	***72%	11%
<b>8. Sustainable development and growth</b>					
Improvement of the industry's environmental management	Implementation of approved environmental management plans	100%	12%	100%	12%
Improvement of the industry's mine health and safety performance	Implementation of tripartite action plans on safety and health	100%	12%	100%	12%
Use of South African-based research facilities for the analysis of samples across the mining value chain	Percentage of samples analysed in South African laboratories	100%	5%	100%	5%
			100%		93%

\* There were no hostels available for sustainable conversion at the time of reporting

\*\* The multinational trust, the vehicle to progress this investment, has not yet been established by Government. Nonetheless, Harmony has requested that its multinationals demonstrate investment in social upliftment and many of our multinationals have supplied such evidence. However, to be conservative, Harmony has claimed 0% compliance

\*\*\* With the acquisition of Moab Khotsong in March 2018, we entered into a transition phase to June 2018, when the projects were being finalised with stakeholders. As a result, project implementation was delayed



# DIRECTORS' REPORT

## Our business

The Harmony group of companies has underground and surface operations and conducts gold mining and exploration in South Africa and Papua New Guinea. A general review of the group's business and operations is provided in *Operational performance*.

The company does not have a controlling shareholder and is managed by its directors on behalf of all of its shareholders. The company's primary listing is in South Africa on the JSE. Harmony's ordinary shares are also listed in the form of American Depositary Receipts on the New York Stock Exchange.

## Integrated annual report 2019

As required by the King IV Report on Governance for South Africa, 2016 (King IV report) and the JSE Listings Requirements, the board has reviewed and approved the Integrated Annual Report 2019 on the recommendation of the audit and risk committee, supported by the social and ethics committee.

## Statement by the board

The board of directors is of the opinion that the Integrated Annual Report 2019 and the accompanying consolidated financial statements fairly reflect the true financial position of the group at 30 June 2019 and its performance for the year.

## Company secretary

The company secretary is Riana Bisschoff. Her business and postal addresses appear on the inside back cover of this report. The company secretary's certificate is found on page 151.

## Board of directors

On 13 May 2019, the board appointed Ms Given Sibiyi and Ms Grathel Motau as independent non-executive directors.

The board subsequently appointed Ms Given Sibiyi as a member of the audit and risk committee and Ms Grathel Motau as a member of the investment committee, effective 15 August 2019.

## Directors' shareholdings

At 30 June 2019, the chief executive officer, Peter Steenkamp, held 512 000 shares, the financial director, Frank Abbott, held 1 142 010 shares and executive director, Mashego Mashego, held 593 shares in Harmony while non-executive directors André Wilkens and Ken Dicks, held 101 301 and 35 000 shares in Harmony respectively. None of the directors' immediate families and associates held any direct shareholding in the company's issued share capital. No other director held or acquired any shares in the company, other than through share incentive schemes (executive directors only) during FY19. Refer to the Remuneration report for details of share incentives awarded to executive directors.

## Going concern

In accordance with the solvency and liquidity test in terms of section 4 of the Companies Act, the board is of the opinion that the company has adequate resources and that the:

- company's assets, fairly valued, exceed the fair value of its liabilities
- company will be able to pay its debts as they become due in the ordinary course of business for the 12 months following 30 June 2019

## Financial results

Details of the group's financial performance are discussed in the *Financial director's report*. The audited consolidated and company annual financial statements are included in the Financial Report 2019 which is available online at [www.har.co.za](http://www.har.co.za).

## Share capital

On 12 July 2018, shareholders approved the special resolution to issue 11 032 623 new ordinary shares to African Rainbow Minerals Limited at the placing price of R19.12 (ARM Placing). The proceeds of R211 million (US\$16 million) raised from the ARM Placing were used to repay part of the outstanding bridge loan raised for the acquisition of the Moab Khotsoeng operations.

Costs directly attributable to the issue of the shares amounted to R49 million (US\$3.7 million).

Full details of the authorised, issued and unissued share capital of the company as at 30 June 2019 are set out in the consolidated statements of changes in shareholders' equity in the Financial Report 2019 ([www.har.co.za](http://www.har.co.za)).

## Shareholders

Information on shareholder spread, the range of shareholdings and public shareholders, as well as major shareholders, is presented in the *Shareholders' information* section in this Integrated Annual Report 2019.

## Dividend policy

Harmony is pursuing a growth strategy which has resulted in our production having increased by approximately 30% over the past two financial years. This increase in production was predominantly financed through debt. Our priority is to reduce debt before we consider paying a dividend.

## Dividends declared

No dividend declared for FY18 and FY19.

## Investments

A schedule of investments in subsidiaries, associates and joint arrangements appears in the Financial Report 2019 ([www.har.co.za](http://www.har.co.za)).

### Contingencies

None of Harmony's properties is the subject of pending material legal proceedings. We are involved in legal and arbitration proceedings that are incidental to the normal conduct of our business. Refer to note 35 of the consolidated financial statements for further discussion.

### Borrowings

- (i) Movement in borrowings: see note 29 to the consolidated financial statements
- (ii) Borrowing powers are detailed in the company's memorandum of incorporation

### Disposals

There were no material disposals during FY19.

### Acquisitions

There were no material acquisitions during FY19.

### Related party transactions

None of the directors or major shareholders of Harmony or, to Harmony's knowledge, their families, had an interest, directly or indirectly, in any transaction during the period under review or in any proposed transaction that has affected or will materially affect Harmony or its subsidiaries, other than as discussed below.

Modise Motloba, Harmony's deputy chairman, is a director of Tsys Limited. Tsys Limited entered into a contract with the group in February 2017 to provide services relating to the group's small and medium enterprise development projects. Approximately R4 million was paid to Tsys Limited during FY19. The contract has a 30-day notice period.

### Material transactions with associates, joint arrangements and structured entities

Refer to note 34 of the consolidated financial statements for details on transactions conducted during the period under review.

### Recent developments

On 26 July 2019, the Johannesburg High Court approved the R5.2bn settlement of the silicosis and tuberculosis class action suit between the Occupational Lung Disease Working Group – representing Gold Fields, African Rainbow Minerals, Anglo American SA, AngloGold Ashanti, Harmony and Sibanye-Stillwater – and lawyers representing affected mineworkers. After a mandatory three-month period, during which potential beneficiaries can opt out of the settlement agreement, the settlement funds will be used to establish the Tshiamiso Trust. The trust will track and trace class members, process all submitted claims, including the undertaking of benefit medical examinations, and pay benefits to eligible claimants.

On 19 August 2019, Harmony and a syndicate of local and international lenders entered into a loan facility agreement which was jointly arranged by Nedbank Limited and ABSA Bank Limited, comprising a revolving credit facility (RCF) of up to US\$200 million and a term portion of up to US\$200 million. The tenor of the facility is three years with an option to extend by another one year. The interest rate for the term loan is LIBOR plus 3.05% and LIBOR plus 2.90% for the RCF. Conditions precedent were fulfilled on 26 September 2019 and financial close was on 2 October 2019, with US\$5 million (R75 million) being drawn on, resulting in an outstanding balance of US\$300 million (R4.5 billion).

## COMPANY SECRETARY'S CERTIFICATE

In accordance with the Companies Act No 71 of 2008 (the Act), I certify that for the year ended 30 June 2019, Harmony Gold Mining Company Limited, to the best of my knowledge and belief, has lodged with the Companies and Intellectual Property Commission all such returns and notices as are required of a public company in terms of the Act, and that all such returns and notices appear to be true, correct and up to date.

**Riana Bisschoff**

**Company secretary**

24 October 2019

# SHAREHOLDER INFORMATION

## STOCK EXCHANGE LISTINGS AND TICKER CODES

Harmony's primary listing is on the Johannesburg Stock Exchange. It is also quoted in the form of American depositary receipts on the New York Stock Exchange.

Harmony's ticker codes on these exchanges are as follows:

Johannesburg Stock Exchange	HAR
New York Stock Exchange	HMY

## SHARE INFORMATION

<b>Sector</b>	Resources
<b>Sub-sector</b>	Gold
<b>Issued share capital as at 30 June 2019</b>	539 841 195
<b>Market capitalisation</b>	
at 30 June 2019	R17.1 billion or US\$1.2 billion
at 30 June 2018	R10.6 billion or US\$769 million
<b>Share price statistics – FY19</b>	
Johannesburg Stock Exchange:	
12-month high	R31.74
12-month low	R21.14
Closing price as at 30 June 2019	R31.74
New York Stock Exchange:	
12-month high	US\$2.27
12-month low	US\$1.62
Closing price as at 30 June 2019	US\$2.27
Free float	100%
ADR ratio	1:1

## Shareholder spread as at 30 June 2019

Shareholder spread	Number of shareholders	% of shareholders	Number of shares	% of issued share capital
1—1,000 shares	8 924	84.50	1 308 082	0.24
1,001—10,000 shares	1 165	11.03	3 790 264	0.70
10,001—100,000 shares	315	2.98	10 089 440	1.87
100,001—1,000,000 shares	119	1.13	38 593 946	7.15
1,000,001 shares and above	38	0.36	486 059 463	90.04
<b>Total</b>	<b>10 561</b>	<b>100.00</b>	<b>539 841 195</b>	<b>100.00</b>

## Analysis of ordinary shares

Shareholder type	Number of shareholders	% of shareholders	Number of shares	% of issued share capital
Public shareholders	10 551	99.91	390 924 112	72.41
Non-public shareholders	10	0.09	148 917 083	27.59
Share option scheme	2	0.02	6 639 946	1.23
Holdings of more than 10%	2	0.02	140 485 898	26.03
Directors*	5	0.05	1 790 904	0.33
Subsidiaries	1	0.00	335	0.00
<b>Total</b>	<b>10 561</b>	<b>100.00</b>	<b>539 841 195</b>	<b>100.00</b>

\* Held by Peter Steenkamp, Frank Abbott, Ken Dicks, Mashego Mashego and André Wilkens

### Ownership summary as at 30 June 2019 – top 10 shareholders (by group)

Rank	Institution	% of total shares outstanding 30 June 2019
1	African Rainbow Minerals Ltd	13.83
2	VanEck Associates Corporation	12.21
3	Fairtree Capital	4.01
4	Public Investment Corporation of South Africa	3.93
5	Exor Investments (UK) LLP	3.48
6	Dimensional Fund Advisors, Inc.	3.19
7	The Vanguard Group, Inc.	2.91
8	Blackrock Inc	2.84
9	Old Mutual Ltd	2.01
10	Baker Steel Capital LLP	1.43

### SHAREHOLDERS' DIARY

Financial year-end	30 June
Integrated Annual Report issued	24 October 2019
Form 20-F issued	24 October 2019
Annual general meeting	22 November 2019
<b>Results presentations FY20:*</b>	
Interim results	February 2020
Full-year results	August 2020

*See website for diary updates*

### CONTACT

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Mobile: +27 (0)82 759 1775

Telephone: +27 11 411 2314

Website: [www.harmony.co.za](http://www.harmony.co.za)



# GRI ASSURANCE REPORT

## INDEPENDENT AUDITOR'S ASSURANCE REPORT ON SELECTED KEY PERFORMANCE INDICATORS

### To the Directors of Harmony Gold Mining Company Limited

#### Report on Selected Key Performance Indicators

We have undertaken an assurance engagement on the selected key performance indicators (KPIs), as described below, and presented in the Integrated Annual Report of Harmony Gold Mining Company Limited ("Harmony") for the year ended 30 June 2019 (the Report). This engagement was conducted by a multidisciplinary team with relevant experience in sustainability reporting.

#### Subject matter

We have been engaged to provide a reasonable assurance opinion on the KPIs listed in (a) and a limited assurance conclusion on the KPIs listed in (b) below. The selected KPIs described below have been prepared in accordance with Harmony's reporting criteria that accompanies the sustainability information on the relevant pages of the Report.

#### (a) Reasonable assurance

The following KPIs in the Report were selected for an expression of reasonable assurance:

Selected sustainability KPIs	Unit of measure	Scope of Coverage
<b>Environmental</b>		
Electricity purchased	MWh	Corporate
Total Scope 2 Carbon Emissions	Tonnes	
<b>Social</b>		
Preferential Procurement	R million	Corporate
Local economic development	R million	
<b>Human Capital</b>		
Employment Equity	Percentage (%)	Corporate (South Africa only)
<b>Health and Safety</b>		
Lost-time injury frequency rate	Rate	South Africa and Papua New Guinea

#### (b) Limited assurance

The following KPIs in the Report were selected for an expression of limited assurance:

Selected sustainability KPIs	Unit of measure	Scope of Coverage
<b>Environmental</b>		
Total Scope 1 Carbon Emissions	Tonnes	Corporate
Total Scope 3 Carbon Emissions	Tonnes	
Water used for primary activities	m <sup>3</sup>	
Volumes of waste disposed	Tonnes	
<b>Social</b>		
Percentage of host community procurement spend	Percentage (%)	Corporate
Number of community grievances that are resolved	Number	
Corporate Social Investment (CSI) spend	R million	
<b>Human Capital</b>		
Critical skills training	Number	Corporate (South Africa only)
<b>Health and Safety</b>		
Number of silicosis cases confirmed	Rate	Corporate (South Africa only)
% people on voluntary testing and treatment	Percentage (%)	South Africa and Papua New Guinea
Percentage close out of A hazard fatal risk controls findings	Percentage (%)	

## Directors' responsibilities

The Directors are responsible for the selection, preparation and presentation of the selected KPIs in accordance with the accompanying Harmony reporting criteria. This responsibility includes the identification of stakeholders and stakeholder requirements, material issues, commitments with respect to sustainability performance and design, implementation and maintenance of internal control relevant to the preparation of the Report that is free from material misstatement, whether due to fraud or error.

The Directors are also responsible for determining the appropriateness of the measurement and reporting criteria in view of the intended users of the selected KPIs and for ensuring that those criteria are publicly available to the Report users.

## Inherent limitations

Non-financial performance information is subject to more inherent limitations than financial information, given the characteristics of the subject matter and the methods used for determining, calculating, sampling and estimating such information. The absence of a significant body of established practice on which to draw allows for the selection of certain different but acceptable measurement techniques which can result in materially different measurements and can impact comparability. Qualitative interpretations of relevance, materiality and the accuracy of data are subject to individual assumptions and judgments. The precision thereof may change over time.

Where the information relies on the factors derived by independent third parties, our assurance work will not include examination of the derivation of those factors and other third-party information. It is important to understand our assurance conclusions in this context.

## Our independence and quality control

We have complied with the independence and all other ethical requirements in accordance with sections 290 and 291 of the Independent Regulatory Board for Auditors' Code of Professional Conduct for Registered Auditors (Revised January 2018), parts 1 and 3 of the Independent Regulatory Board for Auditors' Code of Professional Conduct for Registered Auditors (Revised November 2018) (together IRBA Codes) issued by the Independent Regulatory Board for Auditors (IRBA). The IRBA Codes are consistent with the corresponding sections of the International Ethics Standards Board for Accountants' Code of Ethics for Professional Accountants and the International Ethics Standards Board for Accountants' International Code of Ethics for Professional Accountants (including International Independence Standards) respectively, which is founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behaviour.

Ngubane & Co. (JHB) Inc. applies the International Standard on Quality Control 1, and accordingly maintains a comprehensive system of quality control including documented policies and procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.

## Our responsibility

Our responsibility is to express either a reasonable assurance opinion or limited assurance conclusion on the selected KPIs as set out in section (a) and (b) of the Subject Matter paragraph, based on the procedures we have performed and the evidence we have obtained. We conducted our assurance engagement in accordance with the International Standard on Assurance Engagements (ISAE) 3000 (Revised), Assurance Engagements other than Audits or Reviews of Historical Financial Information, issued by the International Auditing and Assurance Standards Board.

That Standard requires that we plan and perform our engagement to obtain the appropriate level of assurance about whether the selected KPIs are free from material misstatement.

The procedures performed in a limited assurance engagement vary in nature and timing, and are less in extent than for a reasonable assurance engagement. As a result, the level of assurance obtained in a limited assurance engagement is substantially lower than the assurance that would have been obtained had we performed a reasonable assurance engagement.

A reasonable assurance engagement in accordance with ISAE 3000 (Revised) involves performing procedures to obtain evidence about the measurement of the selected KPIs and related disclosures in the Report. The nature, timing and extent of procedures selected depend on the auditor's professional judgement, including the assessment of the risks of material misstatement of the selected KPIs, whether due to fraud or error.

In making those risk assessments we have considered internal control relevant to Harmony's preparation of the selected KPIs. A reasonable assurance engagement also includes:

- Evaluating the appropriateness of quantification methods, reporting policies and internal guidelines used and the reasonableness of estimates made by Harmony;
- Assessing the suitability in the circumstances of Harmony's use of the applicable reporting criteria as a basis for preparing the selected information; and
- Evaluating the overall presentation of the selected sustainability performance information

We believe that the evidence we have obtained is sufficient and appropriate to provide a basis for our reasonable assurance opinion.

A limited assurance engagement undertaken in accordance with ISAE 3000 (Revised) involves assessing the suitability in the circumstances of Harmony's use of its reporting criteria as the basis of preparation for the selected KPIs, assessing the risks of material misstatement of the selected KPIs whether due to fraud or error, responding to the assessed risks as necessary in the circumstances, and evaluating the overall presentation of the selected KPIs.

A limited assurance engagement is substantially less in scope than a reasonable assurance engagement in relation to both risk assessment procedures, including an understanding of internal control, and the procedures performed in response to the assessed risks. Accordingly, for the KPIs where limited assurance was obtained, we do not express a reasonable assurance opinion about whether Harmony's selected KPIs have been prepared, in all material respects, in accordance with the accompanying Harmony reporting criteria.

# GRI ASSURANCE REPORT CONTINUED

## Summary of work performed

The procedures we performed were based on our professional judgement and included inquiries, observation of processes followed, inspection of documents, analytical procedures, evaluating the appropriateness of quantification methods and reporting policies, and agreeing or reconciling with underlying records.

Given the circumstances of the engagement, in performing the procedures listed above we:

- Interviewed management, KPI owners and senior executives to obtain an understanding of the internal control environment, risk assessment process and information systems relevant to the sustainability reporting process;
- Inspected documentation to corroborate the statements of management, KPI owners and senior executives in our interviews;
- Tested the processes and systems to generate, collate, aggregate, monitor and report the selected KPIs;
- Performed a controls walkthrough of identified key controls;
- Inspected supporting documentation on a sample basis and performed analytical procedures to evaluate the data generation and reporting processes against the reporting criteria;
- Evaluated the reasonableness and appropriateness of significant estimates and judgments made by the KPI owners in the preparation of the selected KPIs; and
- Evaluated whether the selected KPIs presented in the Report are consistent with our overall knowledge and experience of sustainability management and performance at Harmony.

## Conclusions

### Reasonable assurance opinion

In our opinion and subject to the inherent limitations outlined elsewhere in this report, the selected KPIs set out in section (a) of the Subject Matter paragraph above for the year ended 30 June 2019 are prepared, in all material respects, in accordance with the accompanying Harmony reporting criteria.

## Limited assurance conclusion

Based on the procedures we have performed and the evidence we have obtained and subject to the inherent limitations outlined elsewhere in this report, nothing has come to our attention that causes us to believe that the selected KPIs as set out in section (b) of the Subject Matter paragraph above for the year ended 30 June 2019 are not prepared, in all material respects, in accordance with the accompanying Harmony reporting criteria.

## Other matters

The scope of our work has been limited to the aforementioned KPIs. Our conclusions above cover only these indicators and not all indicators presented or any other information included in the Report.

The maintenance and integrity of the Harmony's website is the responsibility of Harmony's management. Our procedures did not involve consideration of these matters and, accordingly, we accept no responsibility for any changes to either the information in the Report or our independent assurance report that may have occurred since the initial date of its presentation on Harmony website.

## Restriction of liability

Our work has been undertaken to enable us to express either a reasonable assurance opinion or a limited assurance conclusion on the selected KPIs to the Directors of Harmony in accordance with the terms of our engagement, and for no other purpose. We do not accept or assume liability to any party other than Harmony, for our work, for this report, or for the conclusion we have reached.

**Ngubane & Co. (JHB) Inc.**

**Per: Nomathamsanqa Ashom Chartered Accountant (SA)**

**Registered Auditor**

24 October 2019

# FORWARD-LOOKING STATEMENTS

## CAUTIONARY STATEMENT ABOUT FORWARD-LOOKING STATEMENTS

This annual report contains forward-looking statements within the meaning of the safe harbour provided by Section 21E of the Exchange Act and Section 27A of the Securities Act of 1933, as amended (the “Securities Act”), with respect to our financial condition, results of operations, business strategies, operating efficiencies, competitive positions, growth opportunities for existing services, plans and objectives of management, markets for stock and other matters.

These forward-looking statements, including, among others, those relating to our future business prospects, revenues, and the potential benefit of acquisitions (including statements regarding growth and cost savings) wherever they may occur in this annual report and the exhibits to this annual report, are necessarily estimates reflecting the best judgment of our senior management and involve a number of risks and uncertainties that could cause actual results to differ materially from those suggested by the forward-looking statements. As a consequence, these forward-looking statements should be considered in light of various important factors, including those set forth in this annual report. Important factors that could cause actual results to differ materially from estimates or projections contained in the forward-looking statements include, without limitation:

- overall economic and business conditions in South Africa, Papua New Guinea, Australia and elsewhere
- estimates of future earnings, and the sensitivity of earnings to the prices of gold and other metals
- estimates of future production and sales for gold and other metals
- estimates of future cash costs
- estimates of future cash flows, and the sensitivity of cash flows to the prices of gold and other metals
- estimates of provision for silicosis settlement
- estimates of future tax liabilities under the Carbon Tax Act
- statements regarding future debt repayments
- estimates of future capital expenditures
- the success of our business strategy, exploration and development activities and other initiatives
- future financial position, plans, strategies, objectives, capital expenditures, projected costs and anticipated cost savings and financing plans
- estimates of reserves statements regarding future exploration results and the replacement of reserves
- the ability to achieve anticipated efficiencies and other cost savings in connection with past and future acquisitions, as well as at existing operations
- fluctuations in the market price of gold
- the occurrence of hazards associated with underground and surface gold mining
- the occurrence of labour disruptions related to industrial action or health and safety incidents
- power cost increases as well as power stoppages, fluctuations and usage constraints
- supply chain shortages and increases in the prices of production imports and the availability, terms and deployment of capital
- our ability to hire and retain senior management, sufficiently technically-skilled employees, as well as our ability to achieve sufficient representation of historically disadvantaged persons in management positions
- our ability to comply with requirements that we operate in a sustainable manner and provide benefits to affected communities
- potential liabilities related to occupational health diseases
- changes in government regulation and the political environment, particularly tax and royalties, mining rights, health, safety, environmental regulation and business ownership including any interpretation thereof; court decisions affecting the mining industry, including, without limitation, regarding the interpretation of mining rights
- our ability to protect our information technology and communication systems and the personal data we retain
- risks related to the failure of internal controls
- the outcome of pending or future litigation or regulatory proceedings
- fluctuations in exchange rates and currency devaluations and other macroeconomic monetary policies
- the adequacy of the Group's insurance coverage
- any further downgrade of South Africa's credit rating
- socio-economic or political instability in South Africa, Papua New Guinea and other countries in which we operate

The foregoing factors and others described under “Risk Factors” should not be construed as exhaustive.

We undertake no obligation to update publicly or release any revisions to these forward-looking statements to reflect events or circumstances after the date of this annual report or to reflect the occurrence of unanticipated events, except as required by law. All subsequent written or oral forward-looking statements attributable to Harmony or any person acting on its behalf are qualified by the cautionary statements herein.



# 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

Dr PT Motsepe\* (chairman)  
JM Motloba\* (deputy chairman)  
M Msimang\*^ (lead independent director)  
PW Steenkamp\*\* (chief executive officer)  
F Abbott\*\* (financial director)  
HE Mashego\*\* (executive director)  
JA Chissano\*<sup>1</sup><sup>^</sup>  
FFT De Buck\*<sup>^</sup>  
KV Dicks\*<sup>^</sup>  
Dr DSS Lushaba\*<sup>^</sup>  
HG Motau\*<sup>^</sup>  
KT Nondumo\*<sup>^</sup>  
VP Pillay\*<sup>^</sup>  
GR Sibiya\*<sup>^</sup>  
MV Sisulu\*<sup>^</sup>  
JL Wetton\*<sup>^</sup>

AJ Wilkens\*

\* Non-executive

\*\* Executive

^ Independent

<sup>1</sup> Mozambican

## INVESTOR RELATIONS

E-mail: [HarmonyIR@harmony.co.za](mailto:HarmonyIR@harmony.co.za)  
Telephone: +27 11 411 2314  
Website: [www.harmony.co.za](http://www.harmony.co.za)

## COMPANY SECRETARY

Telephone: +27 11 411 2094  
E-mail: [companysecretariat@harmony.co.za](mailto:companysecretariat@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: 0861 546 572  
E-mail: [info@linkmarketservices.co.za](mailto:info@linkmarketservices.co.za)  
Fax: +27 86 674 4381

## ADR\* DEPOSITARY

### Deutsche Bank Trust Company Americas c/o American Stock Transfer and Trust Company

Deutsche Bank Trust Company Americas  
c/o AST  
Operations Centre  
6201 15th Avenue  
Brooklyn  
NY11219

E-mail queries: [db@astfinancial.com](mailto:db@astfinancial.com)  
Website: [www.astfinancial.com](http://www.astfinancial.com)

Toll free (within US): +1-886-249-2593  
Int: +1-718-921-8124  
Fax: +1-718-921-8334

\*ADR: American Depositary Receipts

## SPONSOR

### JP Morgan Equities South Africa (Pty) Ltd

1 Fricker Road, corner Hurlingham Road,  
Illovo, Johannesburg, 2196  
Private Bag X9936 Sandton, 2146

Telephone: +27 11 507 0300  
Fax: +27 11 507 0503

## TRADING SYMBOLS

JSE: HAR  
New York Stock Exchange: HMY  
ISIN: ZAE 000015228

