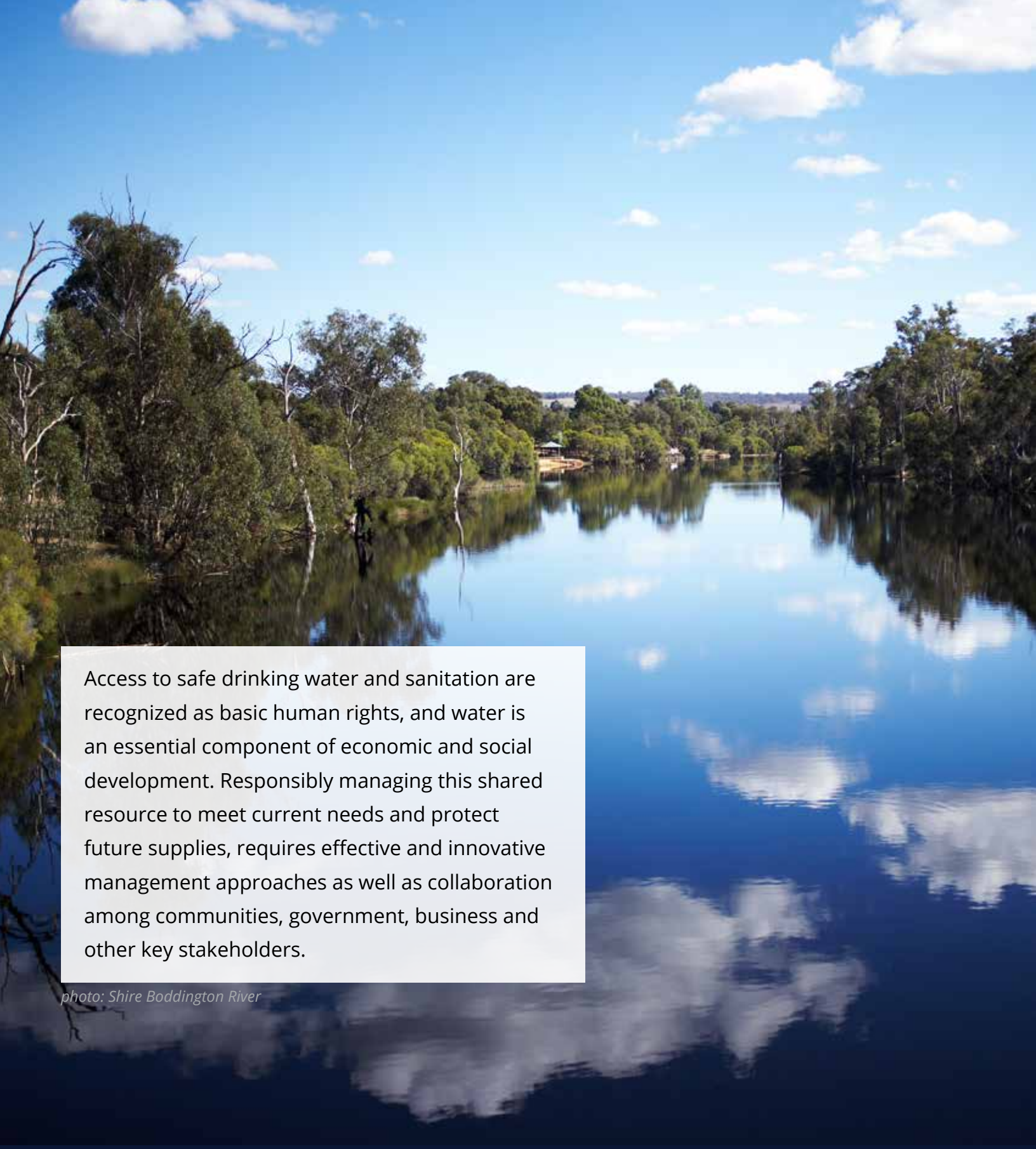


Access to safe drinking water and sanitation are recognized as basic human rights, and water is an essential component of economic and social development. Responsibly managing this shared resource to meet current needs and protect future supplies, requires effective and innovative management approaches as well as collaboration among communities, government, business and other key stakeholders.

photo: Shire Boddington River

GUIDE TO WATER

Newmont™

GLOBAL WATER STRATEGY

PURPOSE: Manage water as a precious resource and work collaboratively to create value and improve lives through sound water stewardship

OBJECTIVES				
WATERSHED APPROACH	IMPACT MITIGATION	OPERATIONAL PERFORMANCE	EXTERNAL ENGAGEMENT	INTERNAL COLLABORATION
Secure water supply for operations while protecting and enhancing other water uses	Mitigate environmental and social water related impacts in a cost effective manner	Manage water as an asset through improved performance and compliance with all commitments	Collaborate and engage externally on water policy and challenges	Collaborate and engage internally on water stewardship
PROGRAMS				
· Recognize the value of water in the watershed by understanding water utilization and availability for current and future operations, beneficial uses and enhancement opportunities · Understand the connection between our use, community use, and ecological needs when planning projects	· Identify and proactively mitigate impacts on sensitive receptors relating to consumption, storage, diversion and discharge · Include community and cultural values of water in business planning and avoid, minimize and mitigate impacts · Evaluate opportunities to enhance community and ecological water uses	· Ensure compliance with applicable regulatory requirements, corporate water standards and guidelines · Account transparently for the full cost of water in all operation and project decisions · Define and minimize financial exposure to water management at closure · Develop cost effective water conservation opportunities and assess new treatment technologies	· Execute a communications strategy to inform stakeholders about water management successes, opportunities and challenges · Collaborate with communities and other key stakeholders to form partnerships to address shared water management issues · Communicate corporate and regional water strategies for all operations and projects · Engage with government and stakeholders on water regulation and policy	· Continue to strengthen global, regional, and site water roles and responsibilities · Regularly review water performance with cross-functional water teams · Annually review the site water management charters and water strategy action priorities for update as required, to ensure applicability and relevance

OUTCOMES

- Access to water while protecting other uses
- Understand the full cost of water in all our business decisions
- Avoid, minimize and mitigate environmental and social water impacts
- Recognition as a trusted leader in water stewardship

WATER STRATEGY

Newmont's operations are located in watersheds characterized with limited water supply, increased population growth and pollution. Within the majority of the watersheds where we operate, our consumption is relatively low compared to total availability and other uses. However, challenges such as extreme climatic events, seasonal variability, drought, and changes to water quality and poor watershed management and governance can result in water conflicts, operational disruptions, financial loss, delays in regulatory approval, poor reputation and diminished investment value.

We developed a Global Water Strategy in 2014 to guide our efforts to understand shared challenges, reduce water related risks across the business and improve our water management performance. Newmont's global water strategy with is centered around a purpose of managing water as a precious resource and working collaboratively to create value and improve lives through sound water stewardship with objectives and programs to support the five pillars.

Framework of the strategy aligns with external commitments including the International Council on Mining and Metals' (ICMM) Water Stewardship position statement and the UN Sustainable Development Goal on clean water and sanitation (SDG-6) and support other internal strategies for Newmont including Closure and Human Rights.

photo: Conniaurum Reclaimation

Successful implementation of the strategy leads to:

- Access to water while protecting other uses;
- Understanding water costs and performance impacts and integrating those into our business decisions;
- Avoiding, minimizing, and mitigating environmental and social water- related impacts; and
- Being recognized as a trusted leader in water stewardship.

OUR APPROACH TO WATER MANAGEMENT

Watershed approach means securing water supply for our operations while protecting and enhancing other water uses. This means we want to understand the broader watershed conditions including users, availability, challenges and opportunities and incorporate these variables into our business planning and risk mitigation.

Watershed based targets were established to support collective management of the watersheds moving forward. These targets are evaluated on an annual basis to ensure that priorities are met and that Newmont is engaging in collective governance and activities that support business improvement and align with our purpose to manage water as a precious resource and work collaboratively to create vale and improve lives through sound stewardship.

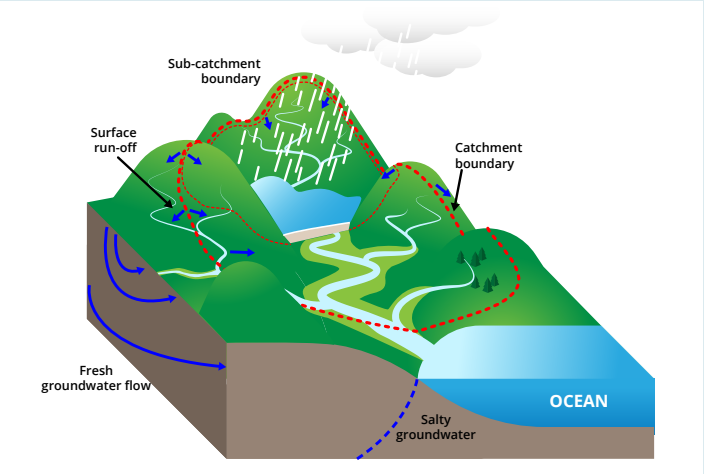


Diagram of water catchment, adapted from the North and South Rivers Watershed Association (NSRWA) website, www.nsrwa.org.

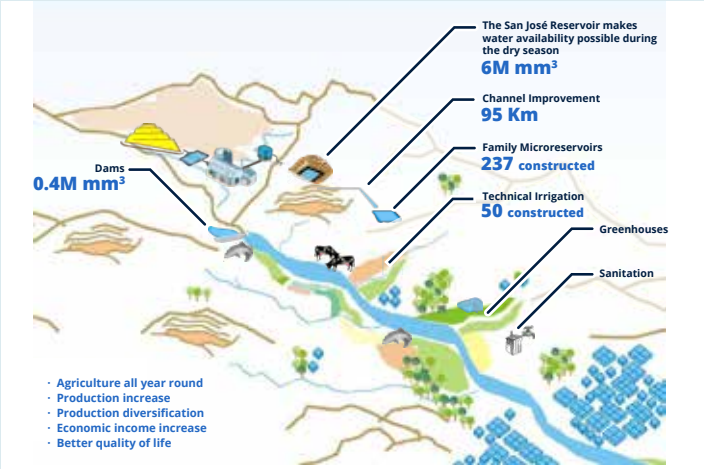
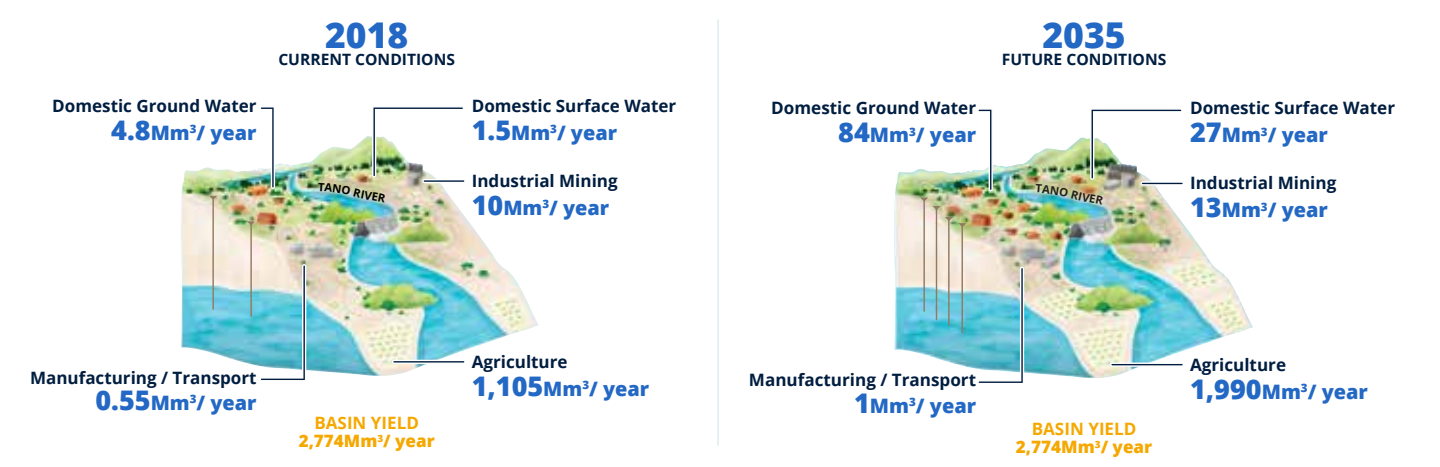


Diagram of the Yanacocha mine and stewardship efforts.

WATERSHED GROWTH

Newmont's water strategy integrates an understanding of current and future conditions related to water use and potential impacts to water quality or quality to support long-term planning and sustainable watershed management. This includes working collectively with stakeholders to project future conditions and develop and implement plans to create a sustainable water resource.



Example of watershed growth and long-term planning at Newmont's site in Ghana.

Governance

Our governance framework defines roles and responsibilities, identifies and prioritizes activities to ensure alignment with operations and business planning, and promotes continuous improvement. Implementation is supported from the site level through to executive management and the board.

photo: Musselwhite

Performance management is supported by our systems, standards and polices. Our water management standard, and supporting guidance documents, establish the minimum requirements for managing our water risks including surface water and groundwater. Monitoring is conducted to meet regulatory requirements and support performance management and process implementation. All sites are audited against our environmental standards on a regular basis, and findings are assessed at both site and corporate level. Auditing is completed to support ISO 14001 certification and alignment with ICMM Performance Expectations and ICMM Sustainable Principles, including Principle 6: Pursue continual improvement in environmental performance issues, such as water stewardship, energy use and climate change.

WATER ACCOUNTING

Water accounting is done either through the Mineral Council of Australia (MCA) water accounting framework (WAF) or as part of an online reporting system which captures similar data. This reporting is completed to define, measure and reports water withdrawal, consumption, discharge and recycle/reuse. Operating sites have site-wide water balances to provide an understanding of water inputs, consumption, recycle/reuse and changes in water quality.

Our water reporting is aligned with the MCA model and the ICMM guide to standardized water reporting. Our water performance is reported annually in Newmont's sustainability report.

RISK MANAGEMENT

A key part of our strategy is understanding and mitigating the spectrum of water risks within the watersheds in which our operations reside, including:

- Physical risk — not enough water, too much water, or water unfit
  for use;
- Reputational risk — the perception that the company does not have sustainable and responsible business practices; and
- Regulatory risk — changing, ineffective or poorly implemented public policies.

Current and long-term water risks also include those that arise from our operations (e.g., the use of chemicals in processing) and events that we do not control (e.g., extreme weather and climate change). Managing water-related risks must target the specific areas in which we operate, and take into consideration the physical environment and social and regulatory context.

photo: Yanacocha

Collaboration with World Resource Institute

Newmont has collaborated with the World Resources Institute (WRI) to support water stewardship activities and provide context on how global water risks translate to Newmont's operations.

WRI is a global research organization that envisions "an equitable and prosperous planet driven by the wise management of natural resources." To improve the environment, economic opportunities and human well-being, WRI works with businesses, governments, and civil society and pursues data-driven insights and research to inform effective management of natural resources. Newmont has collaborated with WRI's Water Program to evaluate the water quantity, quality, and management related challenges in the watersheds were Newmont operates.

WRI's Water Program has provided data from two tools to support this work including:

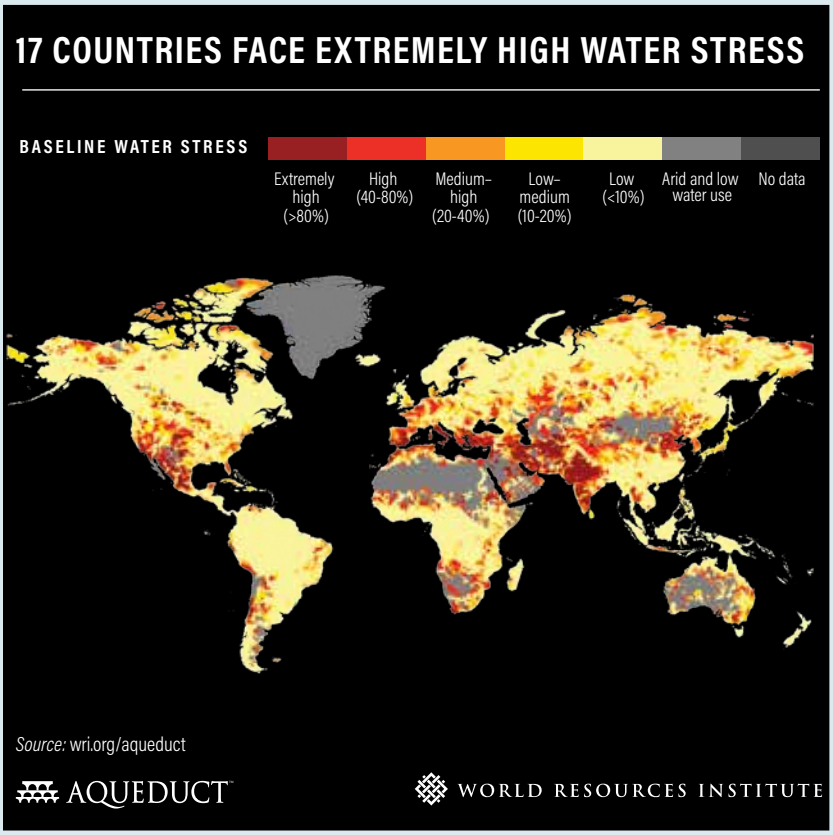
(1) The Aqueduct Water Risk Atlas (www.wri.org/publication/achieving-abundance); and

(2) SDG 6 cost estimates.

The Aqueduct Water Risk Atlas evaluates water related risk based on catchment level indicators while the SDG 6 Cost Estimates studies the investment opportunities and associated costs required to achieve the targets of SDG 6 (as outlined above). Both tools are derived from global data, meaning the data is most useful as a first pass or screening tool to understand the conditions of local catchments.

Aqueduct Water Risk Atlas

WRI's Aqueduct global water risk mapping tool is used to support the identification of water risk and opportunities to respond to water challenges. The Aqueduct Water Risk Atlas is an online mapping tool that identifies water risk based on 12 key indicators into three categories of water risk and an overall aggregated score. The framework is based on review of literature and available global data—Aqueduct water risk exposure data is provided to help understand of how water-related risk may impact business and to provide a better understanding of water issues in the broader watershed.



WRI completed analysis for Newmont including eight catchment level risk indicators relevant to Newmont's operations: baseline water stress, interannual variability, seasonal variability, drought risk, riverine flood risk, coastal eutrophication potential, unimproved/no drinking water and unimproved/no sanitation (See glossary for definitions). Each risk indicator was assessed from low to extreme.

SDG 6 Cost Estimates

WRI has developed a geospatial dataset to support understanding the overall cost of delivering sustainable water management in the Peel-Harvey Watershed. It is assumed that these costs would be shared across multiple stakeholders to meet the objectives of the sustainable development goals.

6.1 All have access to safe and affordable drinking water

6.2 All have access to adequate sanitation and hygiene, and open defecation is eliminated

6.3 Improve water quality by reducing pollution, minimizing release of hazardous chemicals, and halving the proportion of untreated wastewater

6.4 Increase water efficiency across all sectors and ensure sustainable supply of water to reduce the number of people suffering from water scarcity.

6.5 Fully implement integrated water resources management—which looks at water resources holistically.

6.6 Protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes.

Source: United Nations

WORLD RESOURCES INSTITUTE

The WRI database estimates the cost of action to meet Sustainable Development Goal 6 and sustain long-term water security. The SDG 6 Cost Estimates tool evaluated investment priorities within the catchment to manage risks and to support meeting the target areas of SDG6. Six target areas were identified and the total cost of investment within the entire catchment was estimated.

For Newmont, WRI analyzes catchment-level risk, assessing them from low to extreme. Among the key water risk categories are:

Water stress (baseline water stress): Baseline water stress measures the ratio of total water withdrawals to available renewable water supplies. Water withdrawals include domestic, industrial, irrigation and livestock consumptive and non-consumptive uses. Available renewable water supplies include surface and groundwater sources and consider the impact of upstream consumptive water users and large dams on downstream water availability.

Water quality: Changes in water quality both within and outside our operations can impact surrounding ecosystems and result in impacts to water users and the environment. Management of water quality includes understanding baseline conditions and potential sources of impact and using treatment systems to meet the developed standards for discharge. All operations within Newmont maintain compliance criteria based on the beneficial use of the receiving water. Influences outside our operations are identified to support collective governance that reduces impacts to the greatest extent possible.

Excess water: Normal, and less frequent extreme precipitation events, as well as the need to dewater the ore bodies, can result in excess water at our operations. Effective management is necessary to reduce risks to infrastructure, the environment and communities. Past extreme weather events at some of our sites have presented challenges, so through site-wide water balances we work to better understand and manage the inputs and outputs. Monitoring and analyses help evaluate system performance, demonstrate compliance and support continuous improvement.

Watershed challenges (governance, regulations and access): The effectiveness of governance frameworks that help manage competition for resources and potential impacts varies within the areas where we operate. In regions where there is limited or no governance, access to water or changing regulations may pose a risk to ensuring a sustainable resource over time.

The developed risks are presented in the Table on the next page. This information is used to support business decisions, development of watershed based targets and aims to lower risk by securing resources to support operations and growth over the long term.

An important part of our strategy is understanding and mitigating key water risks within the watersheds in which we operate. In 2018 and 2019, we collaborated with the World Resources Institute (WRI) — a global research organization that works with businesses, governments, and civil society on effectively managing natural resources — to support our water stewardship approach. WRI assessed Newmont's catchment-level risk, rating them from low to extreme. The context and watershed risks that exist near our operations are summarized in the following table.

WATER-RELATED RISK BY OPERATION			WATER RISKS			
OPERATION	CLIMATE CONDITIONS	WATER SOURCES[1]	WATER STRESS[2,3]	WATER QUALITY	EXCESS WATER	WATERSHED CHALLENGES
Ahafo	Humid	SW, GW		X	X	X
Akyem	Humid	GW		X	X	X
Boddington	Semi-arid	SW, GW				
Tanami	Arid	GW	X			
Cripple Creek & Victor	Moderate precipitation	MW	X			
Éléonore	Low to Moderate precipitation	GW			X	
Musselwhite	Moderate precipitation	SW, GW		X		
Peñasquito	Arid	GW	X			X
Porcupine	Moderate precipitation	GW, MW		X		X
Cerro Negro	Arid	GW	X			X
Merian	Moderate precipitation	GW		X	X	X
Yanacocha	Moderate precipitation with distinct dry season	GW		X	X	

[1] Key: groundwater (GW), surface water (SW), municipal water (MW)
[2] Water stress is baseline water stress as defined by the WRI Aqueduct.
[3] The climate model's interannual variability for parts of Australia, South America and North America can also increase the risk of water stress, which is not accounted for in this risk chart. For example, Boddington can have years of baseline water stress or excess water in wet years.

These risks are updated on an annual basis. Our strategy aims to ensure that future mitigations will meaningfully contribute to stewardship, and as a result lower risk and secure resources to support operations and growth over the long term. In 2019, we developed a methodology to standardize how we evaluate our water risks and integrate them into business planning. This includes assessing how water-related risks impact other business interests including external relations, legal, production and financial.

Moving towards Water Stewardship

Water Stewardship builds upon the foundational accomplishments in water management and ongoing watershed management work, strengthening the business by implementing sustainable practices that mitigate risk, protect our operations from disruption, and maintain and strengthen our social license to grow.

To support continuous improvement the maturity model was developed to support the understanding of current and future conditions and to define a roadmap towards water stewardship identifying key activities required to meet the following business objectives:

- Managing water is critical to improving operational efficiencies and reducing liabilities;
- Managing water challenges is central to securing and maintaining social acceptance; and
- Water access is an enterprise level risk for Newmont aligning with the World Economic Forum assessment that water-related impacts is one of the top five global risks.

All of the sites completed assessments to understand their current and future state related to the maturity model. This was then used to set an internal timeline to different levels of maturity for each stage of the maturity model working toward waters stewardship in the next five years. Sites also used the gaps as a way to develop actions for continuous improvement and alignment with the water strategy.

WATER MANAGEMENT	WATERSHED-BASED MANAGEMENT	WATER STEWARDSHIP	WATER INNOVATION
Compliance & Improved Efficiency	**Integration of Local Water Risks & Impacts**	**Collective Action With Stakeholders**	**Driving Innovation**
Internally focused on reducing, reusing, and recycling water in operations.	Integrates the broader watershed conditions and availability when evaluating business risks and setting operational water targets.	Collaborates with stakeholders on shared challenges, capacity building, and governance in the watershed.	Drives technological, financial, and business model innovation and collaboration, increasingly focused nationally and globally.
· Efficiency-based operational improvements (targets) · Understanding of water footprint and impact · Regulatory and corporate compliance · Water efforts publicized · Incentivizing long-term thinking · Clear internal governance · Alignment with lifecycle (i.e. closure) objectives · Risk assessment on water identifying high priorities · Building water into the business strategy	· Watershed considerations inform operational improvements · Understanding of watershed stakeholders, yield and utilization · Watershed-based targets · Recognition of full cost and value of water · Water strategy aligned with business planning objectives and investment decisions · Internal/external alignment on the value of water (bridging the gap) · Engaged in watershed governance and policy · Predictive watershed modeling · Participatory monitoring	· Collaborative watershed management · Participation in collective action for capacity/ infrastructure development · Collaboration with academia/NGOs · Strong watershed governance · Water stewardship integrated with life-of-mine planning · Defining improvement goal aligned to Sustainable Development Goal (SDG) 6 · Engaged in national/global water policy · Support government plans in watershed basin management	· Driving collective action · Open data exchange · Technological (R&D), financial, and business model innovation · Industry-leading transparency on water · Collaborate on socially-responsible external investment fund · Collaborative management of watershed basin · Beneficial use of mine water

Partnerships and Collaborations

A key part of moving toward water stewardship is to support collective management within the watersheds in which we operate, because no one entity can manage all these risks alone, a key element of our strategy is to work collaboratively toward collective action. We have identified collaborations and partnerships at the site, regional and corporate level to support this objective.

photo: Dique Grande

A few of our partnerships support collective action are summarized in the following table. Further information on our collaboration and work toward water stewardship can be found in Newmont's sustainability report.

Partner	Description
	Global Collaborations
WRI	Supporting our understanding of shared risks and challenges in the watersheds in which we operate. Identifying methodology to prioritize risk which were utilized to set watershed-based target action plans.
U.S. National Center for Atmospheric Research (NCAR)	Develop model to assist in understanding the larger context of the watershed, Water Evaluation and Analysis Program (WEAP) and supported work in climate change to allow for adaptive water management programs.
	Site-level Collaborations
Peel-Harvey Catchment Council (PHCC) – Australia	Collaborative work with PHCC to support ongoing water quality and quantity issues in the Peel Harvey Catchment with the Boddington operate is tributary to. Supporting program management and implementation of activities as a site and regional level.
Asociación Los Andes de Cajamarca (ALAC) – Peru	Developed programs to improve education, Access and sanitation for the community of Cajamarca. This work has included technical support, upgrades to systems (treatment, canals) and educational programs.
Tano and Pra Basin water boards – Ghana	Participation in the water basin board to discuss collective management planning and activities that have been developed by the board. This also allows Newmont to share data and resources with the boards to understand our internal management systems and to increase transparency and credibility in the region.

photo: Cerro Negro

CONTINUOUS IMPROVEMENT

Our water strategy is supported by our technical services research and development (R&D) approach for water. R&D seeks to create value through balanced investments that sustain and grow our business and provide a competitive advantage.

The work is focused on operational alignment, internal and external engagement, execution, and value-driven investments in the following:

- Improvements in acid rock drainage (ARD) mitigation and source control;
- Innovation in the design of waste facilities and covers;
- Development of water treatment technologies;
- Reducing cyanide costs, footprint and management; and
- Reducing water consumption in mining operations.

Targets

To support sustainable resources, we are focused on two areas: improving water efficiency and working with others to enhance the benefits and availability of water resources.

Our water efficiency targets support our goal to reduce water consumption and impacts specifically focused in areas that are considered water stressed. Our water stewardship targets are focused on completing actions that align with maturity (using the objectives of the maturity model) towards water stewardship within 5 years.

Performance metrics and targets	Description
Water Efficiency	
• Improve water efficiency focused on reduced freshwater consumption in water stressed areas, • Identify and utilize lower quality water, • Enhance source control measures to reduce impact and treatment needs, and • Utilize technologies that reduce water needs.	These targets will have a greater focus on sites located in water stressed areas. Our performance against these metrics will be reported on an annual basis.
Water Stewardship	
• Participation in multi-stakeholder watershed governance bodies, • Support catchment level activities around education, capacity building and developing plans and models for resource management, • Support collective action/management of water with the objective of improved water quality and quantity.	Target performance will be evaluated annually based on annual site water action plans and objectives. Key areas of progress will be highlighted in our reporting. The target of water stewardship as defined by the maturity model by 2026.

Note: Further information about our specific public targets and performance can be found in Newmont's annual sustainability report.