

Shared Water, Shared Responsibility, Shared Approach:
Water in the Mining Sector



About the authors

International Finance Corporation (IFC)
Infrastructure & Natural Resources
Advisory team

The Infrastructure & Natural Resources Advisory team helps create and preserve value for communities and clients through targeted development activities, while managing operational and social risks related to extractives, infrastructure and other large footprint projects. Water is proving to be an increasingly critical issue for our clients, and this publication draws upon IFC's diverse global experiences providing private advisory services to mining companies seeking to develop meaningful stakeholder partnerships to collectively address risks related to water.

The International Council on Mining
and Metals (ICMM)

ICMM is an international organization dedicated to a safe, fair and sustainable mining and metals industry. With more than 1.2 billion people living in areas of water scarcity and natural habitats under increasing threat, ICMM recognises that industry can play an important role in tackling water challenges. In 2017 ICMM member companies therefore pledged action to support the responsible use of water with the launch of ICMM's water stewardship position statement. In this paper ICMM member companies have shared their experiences of collaboration in order to support the advancement of water stewardship in the industry as a whole.

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Foreword

Shared water, shared responsibility, shared approach: water in the mining sector

Access to water remains one of the biggest global challenges of the 21st Century. Growing population, water consumption, pollution, and climate variability are resulting in greater water scarcity, driving competition over water resources and increased conflicts amongst water users.

As a water-dependent industry this challenge poses a risk to the mining and metals sector but also presents a significant opportunity—to catalyze and support collective solutions that contribute to improved water security and sanitation for all.

Mining companies are increasingly thinking more collaboratively—with local communities, government and other industries—about shared water use. Meaningful partnerships have already resulted in improved infrastructure, better water management throughout and beyond the catchment area, and increased cooperation among water users. But much more can be done.

IFC and ICMM have a common goal of improving mining's contribution to sustainable development. We believe that the industry can be a partner for development and this paper aims to support that journey through a focus on water: sharing the practical challenges, successes and lessons learnt from those companies and local partners who have worked across boundaries to tackle shared water risks and seize shared opportunities.

Only through collaboration will we be able to realize a socially equitable, environmentally sustainable and economically beneficial water future for everyone.

**Mining companies
are increasingly
thinking more
collaboratively—with
local communities,
government and other
industries—about
shared water use.**



A handwritten signature in black ink, appearing to read 'T. Butler'.

Tom Butler, CEO, ICMM



A handwritten signature in black ink, appearing to read 'Lance Crist'.

Lance Crist, Global Head of Oil,
Gas & Mining, IFC





Shared water; shared responsibility; shared approach

In the past, many mining companies viewed water like any other production input.

Water was a rare discussion topic for corporate boardrooms. It could be managed effectively at the mine site level through negotiating with governments to secure water permits.

But the status quo has changed. Here are eight reasons why.

1 Water challenges are growing. A recent report found that about 70 percent of mining operations from six of the largest global mining companies are located in water-stressed countries.¹ Flooding events have likewise posed a challenge for the mining sector and in extreme cases have been reported to compromise billions of dollars of production.²

2 Water is an asset. Strategic access to resources isn't just about rocks anymore, it's about water too. Water has become a source of strategic advantage.

3 Water is expensive. By some estimates, water-related infrastructure now accounts for approximately 10 percent of the industry's capital expenses.

4 Water is a growing source of conflict. In the 17 years between 2000 and 2017, water-related issues were implicated in 58 percent of mining cases lodged with IFC's Compliance Officer Ombudsman (CAO)³, an independent recourse mechanism that responds to complaints from project-affected communities. The flipside is that water provides a unique platform to build genuine trust across stakeholder groups.

5 Citizens have the tools to take action. Communication technologies have yielded a hyper-connected world in which people have vastly increased access to news and information. Social media platforms enable instantaneous information exchange and the creation of global networks of informed and organized citizens.

6 Mining isn't the only activity that impacts a local water system. Mines are increasingly located in close proximity to one another, to other industries, and to surrounding communities. It is no longer sufficient for mining companies to understand and manage only their own interactions with water resources. It has become ever more essential to understand how the dynamics and interplay of mine water use impacts other actors located in the broader water catchment.

Collaboration requires mining companies to look beyond the company fence towards a more coordinated, inclusive, and holistic approach to water use and management.

1. Toledano, P. and Roorda, C., 'Leveraging Mining-Related Water Infrastructure for Development', Columbia Center on Sustainable Investment, Columbia University, March 2014. <http://ccsi.columbia.edu/files/2014/05/CCSI-Policy-Paper-Leveraging-Mining-Related-Water-Infrastructure-for-Development-March-2014.pdf>; see also 'Global Mining Industry: Water Scarcity to Raise Capex and Operating Costs, Heighten Operational Risks'.

2. ABC News, Australia, 6 December 2010, <http://www.abc.net.au/news/2010-12-07/big-miners-count-cost-of-flooding/2365976>.

3. Compliance Advisor Ombudsman (CAO), Caseload Data FY00-17, status as of January 3, 2017.

7 Pressure for more disclosure is mounting. The importance of a solid evidence base in informing sound water governance is driving a push from government, civil society, and investors for more data disclosure by mining companies.

8 Mining companies are seen as key partners in the global sustainable development agenda. With the recent launch of the UN Sustainable Development Goals (SDGs), and SDG6—the Water Goal—in particular, world leaders have outlined the need for an integrated approach to water management. They have highlighted the importance of shared responsibility for the co-management of this resource between government and water using sectors—including the mining industry.

As a result, collaboration on water challenges is becoming the new norm. This collaboration requires mining companies to look beyond the company fence, to engage with other water users to understand their priorities and water needs, and to work together towards a more coordinated, inclusive, and holistic approach to water use and management. Box 1.1 details some of these collaborative approaches, as described in ICM's A practical guide to catchment-based water management for the mining and metals industry.⁴ These partnerships can help share burdens and result in significant bottom line benefits:

- mitigating risks
- identifying opportunities
- increasing stakeholder trust
- improving workforce satisfaction and retention
- reducing operational challenges and costs

This is not news to many mining companies. To be sure, there are lots of guidance documents to assist companies that have recognized the need for collaborating with others to resolve water challenges.

Until now, though, the body of literature has lacked practical examples describing the sometimes convoluted path that collaboration demands. This paper sets out to fill the void. It provides practical examples to help companies in deciding **why**, **when**, and **how** to engage with others. It shows through first-hand peer experience how, over time, building effective collaboration skills and implementing collective actions to address shared water challenges has strengthened companies, making them more resilient and sustainable over the long term.

The paper's first case study describes an on-going collaborative effort in the South Gobi region of Mongolia. It highlights the enduring value created for the companies, government, and communities involved. Based on company interviews, the paper then explores examples from five other mining regions and concludes with key lessons and insights to help companies chart this new, collaborative path beyond the fence.

Box 1.1

Beyond the Mine Fence: Collaborative Water Stewardship Actions

RESPONSE EXAMPLES

Communication and planning

- Share collected water risk data
- Include stakeholders in monitoring
- Fund a catchment strategy
- Jointly monitor water resources

Community engagement

- Conduct hygiene awareness
- Consult community on mine water
- Rehabilitate local water supply
- Operate community water supply

Catchment governance

- Promote farm water use efficiency
- Participate in catchment forums
- Build regulator capacity
- Implement joint early warning

Collective infrastructure

- Advocate passive treatment
- Plan coherent flood management
- Contribute to infrastructure finance
- Jointly treat regional mine water

Source: ICM's practical guidance on a catchment approach to water management

4. ICM, A practical guide to catchment-based water management for the mining and metals industry, www.icmm.com/guide-to-catchment-based-water-management.

Many collaboration resources are available. Mining companies seeking to engage in collaborative action around water can find a range of resources to help.

ICMM's practical guidance on a catchment approach to water management

The guide aims to outline a comprehensive and systematic approach for identifying, evaluating and responding to catchment-based water-related risks. It provides step by step guidance for companies to develop their water strategies and plans in accordance with the local context and hydrology in which mining and metals operations take place.

The guide advises companies on how and why to engage stakeholders at each step. It also offers advice on elements of a company's risk management strategy that could benefit from a collaborative approach.⁵

Water, mining and communities

IFC has published a number of papers which acknowledge that water should be approached and valued from multiple perspectives.

The "Water, Mining and Communities" paper⁶ highlights the importance of companies building a bond of trust with communities to avoid water becoming a lightning rod for conflict.

The value of water

This discussion paper was produced by WWF with support from IFC.⁷ The paper demonstrates the challenges of assessing the value of water from competing perspectives, and considers how can these views be reconciled.

ICMM's practical guide to consistent water reporting

ICMM has developed this guide to support the industry in making consistent, transparent and material water reports, based on key elements of existing disclosure and accounting systems. This is focused around:

- defining an appropriate set of standardized water reporting metrics for the mining and metals Industry
- outlining the minimum disclosure standard for member companies which sets a transparent benchmark for the industry
- providing practical guidance around preparing corporate water reports and meeting the minimum disclosure standard—including a simple approach to internal data collation, compilation, analysis, and reporting for companies that do not have existing systems.⁸

5. <https://www.icmm.com/en-gb/publications/water/a-practical-guide-to-catchment-based-water-management>

6. <https://www.commddev.org/water-mining-and-communities>

7. <https://www.commddev.org/rethinking-the-value-and-risks-of-water-for-the-private-sector>

8. <https://www.icmm.com/en-gb/environment/water/water-reporting>



Anatomy of a collaborative effort: the South Gobi experience

For centuries, the nomadic people of Mongolia's semi-arid South Gobi region have survived by relying on their deep, traditional knowledge of animal husbandry and complex understanding of their natural habitat. They tend their flocks, following the herds to feeding grounds and watering holes. But water has always been a challenge in a region that typically sees less than 50 millimeters of precipitation each year.

In recent years, the situation seems to have gotten worse. Herders' traditional watering holes have started to run dry. By some estimates, nearly 70 percent of the pastureland has stopped blooming and become more desert-like due to overgrazing.⁹ Livestock numbers have risen dramatically since the break-up of the Soviet Union in the early 1990s, when collectivized herding practices were abandoned. Herders have also become much more vulnerable to the impacts of extreme weather events, known as dzuds. More than 20 million head of livestock were lost in the mortality events of 2000–2002 and 2009–2010.¹⁰

Mongolian herders have a special name for the water of this desert, the coldest in all of central Asia. They call it their "precious Chandmani treasure". In other words, water is the main resource that keeps them alive as well as their livestock. Herders have lived for thousands of years without gold, copper, coal and metals, but haven't lived a week without water. But nowadays, this precious treasure or resource of the Gobi desert is not only the mainstay of their daily



lives. It also is a key source for their country's economic backbone, mining development and infrastructure. Without water, neither mining nor agriculture industries can exist.

Mongolian government policies have welcomed mining investment as an important way to build the country's economic base. According to Dr D. Chandmani, Head of Mongolia's Altai

Uvur River Basin Administration, "Mining is the future of Mongolia's economic development. Most of the mining operations are located in the Gobi region."

The numbers tell the story. Mining already accounts for 18 percent of Mongolia's GDP and employs over 20,000 people.¹¹ As of 2015, Mongolia had more exploration licenses than it

9. Sharma, V.; Dalaibuyan, B.; Adia, S.; Erdenebileg, G.-O.; Natsag, M., Can traditional livelihoods and mining co-exist in a changing climate: Strengthening public-private partnerships in Mongolia to reduce risk and address loss and damage, 2014. Available at: www.csr.uq.edu.au/docs/1243/sharmafinalreport050715.pdf

10. Rao, M. P.; Davi, N. K.; D'Arrigo, R. D.; Skees, J.; Nachin, B.; Leland, C.; Lyon, B.; Wang, S. Y.; Byambasuren, O., 'Dzuds, droughts, and livestock mortality in Mongolia'. *Environmental Research Letters* 2015, 10, (7), 074012.

11. Annual Bulletin of Mining and Geology Mongolia 2016, Mineral Resources Authority of Mongolia.



did mining licenses,¹² suggesting that mining will continue to be a major economic engine for the country in future.

In his remarks, Dr Chandmani, the local government official, also acknowledged the importance of water to mining operations as well as the overarching issue of water scarcity in the South Gobi. He encouraged mining companies to focus on ways to reduce their water consumption and to strictly monitor potential water impacts.

For their part, many of the mining companies active in the area have taken steps to reduce their water usage and improve their water efficiency. For example, new technology at the Oyu Tolgoi copper mine minimized

water losses and maximized recycling potential. These savings have helped the mine reduce its overall water consumption to less than half of the global average for comparable mines.¹³ Other companies, such as Energy Resources LLC, have followed suit with similar measures. For example, at the company's coal wash plant, a sludge belt-press was installed to recover and reuse sludge water.

Despite these mining companies' efforts and national level support for mining development, the local communities were becoming increasingly agitated. They were concerned that the mining companies and government were not doing enough to preserve and protect the water supply.

These savings have helped the mine reduce its overall water consumption to less than half of the global average for comparable mines

12. According to the Mineral Resources Authority of Mongolia, in 2015 there were 1494 valid mining licenses, and 1835 exploration licenses. <http://mram.gov.mn/wp-content/uploads/2015/04/13.pdf>

13. Rio Tinto Oyu Tolgoi. <http://www.riotinto.com/copperanddiamonds/oyu-tolgoi-4025.aspx> (accessed 4/11/2016)

Lack of communication contributes to misperceptions; rising tensions

The broader community had no idea that the mining companies were similarly concerned about water sustainability—or that they had invested in water saving technologies. The reason? Over years of inconsistent engagement or interaction, neither party knew much about the concerns or intentions of the other. Meanwhile, politics added another layer of complexity. Water was often used as a central point of opposition for competing actors who had disagreements over unrelated topics.

Legacy issues further complicated the problem. During the Soviet era, the state was heavily involved in services provision for the herders. This included many aspects of herders' lives and businesses: supplies, services and, notably, state support for well maintenance, provision of drinking water, and other water-related services. As public services declined during the country's transition to the new economic system, state support for water also declined significantly. This situation contributed to herders' increased sensitivity on water issues, as well as to the politicizing of the issue in the court of public opinion.

A heated debate over water rights and management ensued. Water had become a highly emotional issue that was creating divisions and eroding trust between competing water users. At times, some reporters perpetuated the problem because they relied on rumors rather than data and substance. It became increasingly difficult to separate fact from fiction, perception from impact.

The lack of government resources to research water sources and uses

in the South Gobi made things worse, creating an information void. To address this, the government allowed individual mining companies to use their own high technology equipment to identify new sources of water. For some, this arrangement created unintended consequences—a disincentive to share information and an incentive for secrecy and non-disclosure, since the companies that found new water sources would have a competitive advantage over others.

Ultimately, the Mongolian government recognized that with a growing industry presence, more help would be needed. The authorities partnered with the World Bank, Australia's Department of Foreign Affairs and Trade, and others on a multi-year water governance effort. But this was only part of the answer. A big question remained: how to bring the private sector into the conversation and engage with them on future planning?

In 2012, as the herders gained support and publicity for their cause from civic activists and non-profit organizations based all over the world, the local legislature faced growing pressure to address the situation. Amidst rising tension between the communities and the mining companies, a new law was enacted, prohibiting the use of groundwater in mining operations. The law was subsequently overturned, and distrust between companies and communities remained rife.

Herders continued to mount protests around wells located near mining company construction sites, frequently stalling construction activity. Costs for mining companies were mounting. A lack of effective communication was making the problem worse. On occasion, herders and local communities were not consulted far enough in advance to understand how their wells and future access might be impacted.

The need for dialogue

“If we were wasteful with water, our mine would have a short life. I know our mine has a potential life that will go generations, many generations, and I would hate to think that decisions that we were making today at a time of plenty could actually cause the mine to not have that really wonderful long term future. Things get more challenging, I feel, when you have a number of entities that are utilizing the same resource and that's where it becomes particularly important that none of them are wasteful..”

Mark Newby
Principal Advisor,
Tailings and Water Strategy.

Changing the narrative: from mistrust to forged community bonds

As an investor in the Rio Tinto-led Oyu Tolgoi mine joint venture in the South Gobi,¹⁴ IFC was made aware of the action against the mining companies and the growing public dissatisfaction over the mining sector's perceived cumulative impacts. The joint venture, the largest foreign investment in Mongolia to date at the time, also included the Mongolian government, which owned 34 percent of the mine. The rising public commentary culminated in a complaint lodged to the World Bank Group's ombudsman office against IFC's investment in Oyu Tolgoi. The main concern centered on water-related impacts of the project.¹⁵

With each mining company trying, but not always succeeding, to address community concerns on its own, it had become clear that it was time for a different approach. Rio Tinto and the World Bank, which were separately working on water-related issues at the government level, invited IFC to help.

Together, they devised an approach with a seemingly simple starting action: talking together. They would convene the mining companies to acknowledge their shared risks and shared reputations related to water. The idea was that from this face-to-face interaction across companies, a plan might come together that would feature cooperative engagement and dialogue.

Acting as convener, IFC gathered representatives of more than 12 mining companies¹⁶ active in the region. Collective buy-in was critical.

The entire mining sector faced severe scrutiny and negative community and political perceptions. An IFC-commissioned Community Baseline Survey revealed distressing information among the 1,100 respondents: communities did not know how to test drinking water quality and did not trust company-provided information about the impact of mining on water. Communities had no clear sense of overall regional water availability. They also worried that mining's dependence on water would contribute to deteriorating grazing land yields. The public perception was of widespread poor water management practices when this typically was not the case. In effect, the companies were being judged by hearsay due to a lack of transparency and the actions of their weakest link.

Most Mongolians lacked an understanding of South Gobi's water cycles and how mining companies use water. In the early days of IFC's engagement, it became apparent that lack of concrete knowledge about water and water usage was common—within companies, local communities, government, and the media. With limited means to check facts, communities felt frustrated that the government and mining industry were not taking their perceptions and concerns seriously.

The idea was that from this face-to-face interaction across companies, a plan might come together that would feature cooperative engagement and dialogue.

14. In December 2015, IFC committed a \$1221 million loan package as part of a \$4.4 billion project financing for the world-class Oyu Tolgoi Project in Mongolia. The financing ranks as IFC's largest project finance loan and syndication, and MIGA's largest ever guarantee. In addition to providing financing and mobilization, IFC also played a lead role in the assessment and mitigation of environment and social risks, helping Oyu Tolgoi to achieve a high level of environmental and social sustainability and compliance with international standards and good industry practices. As the largest global development institution focused exclusively on the private sector in developing countries, many years of advisory work was performed pre-commitment to ensure that the investment would be politically viable, that environmental and social risks, specifically water, would be managed as a shared risk across the mining sector and the development impact strengthened. IFC's mining, communities and water management advisory services program combines significant impact and draws on the range of IFC's capabilities, including environmental and social sustainability, convening power as an honest broker and coordination with the World Bank, Global Affairs Canada, European Bank for Reconstruction and Development, Netherlands Development Finance Company and the Water Resources Group to tackle obstacles to ending extreme poverty and inequality such as climate change, inclusion and jobs.

15. CAO Assessment Report, IFC/MIGA, July 2013. Available at: http://www.cao-ombudsman.org/cases/document-links/documents/OT-2_Assessment_Report_ENG.pdf

16. Terra Energy, Erdenes Tavan Tolgoi, Oyu Tolgoi, Energy Resources, Gobi Coal and Energy, Erdenes, Bayan Airag, Erdenes Mongol, Xanadu, Entrée Gold, Hunnu Coal, South Gobi Sands, Mongolia National Mining Association, Anglo American



Mining companies faced similar challenges in improving water management practices and reputations. Mining companies were highly skeptical over the value of cooperating on an issue that came with such significant competitive importance. However, they shared common risks. In particular, the companies' social responsibility and environmental staff had not been equipped or expected to respond to community concerns. Similarly, technical water staff at various companies were unfamiliar with the relevance of community concerns. They did not know how to build trust among stakeholders so that their water management practices would be considered credible.

The mining companies and the local communities did not trust each other. When community meetings did take place, the atmosphere was quite tense. Despite the large number of local Mongolian mining staff who attended such meetings, they could not translate stakeholder concerns and company behaviors into constructive dialogue. With strong feelings on all sides, working through the issues required the involvement of a third party that was respected by all.

There was a general lack of knowledge about the positive water practices of some companies.

Within the companies themselves, the social development teams—in many cases—operated separately from the technical and operational teams. This lack of harmonization meant missed opportunities to infuse technical decisions with ways to address articulated community concerns. It also meant lost opportunities to share companies' good water practices with the public.

The unilateral, go-it-alone approach was failing. Understanding the cumulative impacts of water use by the mining sector would require a comprehensive and consistent approach to water accounting, along with a better approach to sharing data with government authorities.

Together the group hammered out a process for productive dialogue. They created an outreach and action plan that would enfranchise herder representatives, local government officials, and company executives. In support of this new collaborative and proactive effort, a number of partners joined forces to complement the companies' work.¹⁷

Together the group hammered out a process for productive dialogue.

17. Government of Canada, the 2030 Water Resources Group, the European Bank for Reconstruction and Development, The Netherlands Development Finance Company, Hungary Export-Import Bank and International Council on Mining and Metals.



Multi-faceted solution to address a complex web of problems

The initiative has gained significant traction and momentum as mining companies, community members, and government alike reap the benefits of proactive and consistent dialogue. Efforts are ongoing, and feature several interrelated components, detailed in this section.



#1: Establishing common ground



Three years' worth of quarterly company leadership meetings, technical round table discussions and cross-company site visits—all facilitated by IFC—have improved the skills, knowledge, and awareness of mining companies active in the South Gobi. In the early days, these meetings were simply to build trust and establish common interest which happened faster than anticipated.

With consistent effort from all parties, these meetings and round table discussions resulted in the development of the Voluntary Code of Practice (VCP) on Water Management. Eight participating mining companies became signatories to the code in February 2016. This joint commitment to increase transparency and enhance peer-to-peer learning was a major milestone for the project, particularly given the weak regulatory environment for

private sector activities. In parallel, the World Bank and Australia's Department of Foreign Affairs and Trade were working to support the Mongolian government in its efforts to bolster central and local water governance practices.

Industry participants said that finding common ground through the interaction at meetings yielded a highly positive outcome. "The main result of the roundtable is the development of the VCP, which reflects best international practices," said Z. Sugarmaa, Energy Resource's Director for Government Relations and Permitting, and VCP signatory. "It helps the companies to manage their water in mining operations in the best way and disseminate their data to the public in a more understandable way. This initiative is a big step forward, leading to sustainable development."

The Voluntary Code of Practice: principles of good water management for mining companies in the South Gobi

Mission

We acknowledge that access to water is a basic human right and voluntarily commit to the responsible, legally compliant and sustainable use of water. We will be efficient in our use of water, transparent in our monitoring, maintain water quality and will provide broad participation in our water management activities.

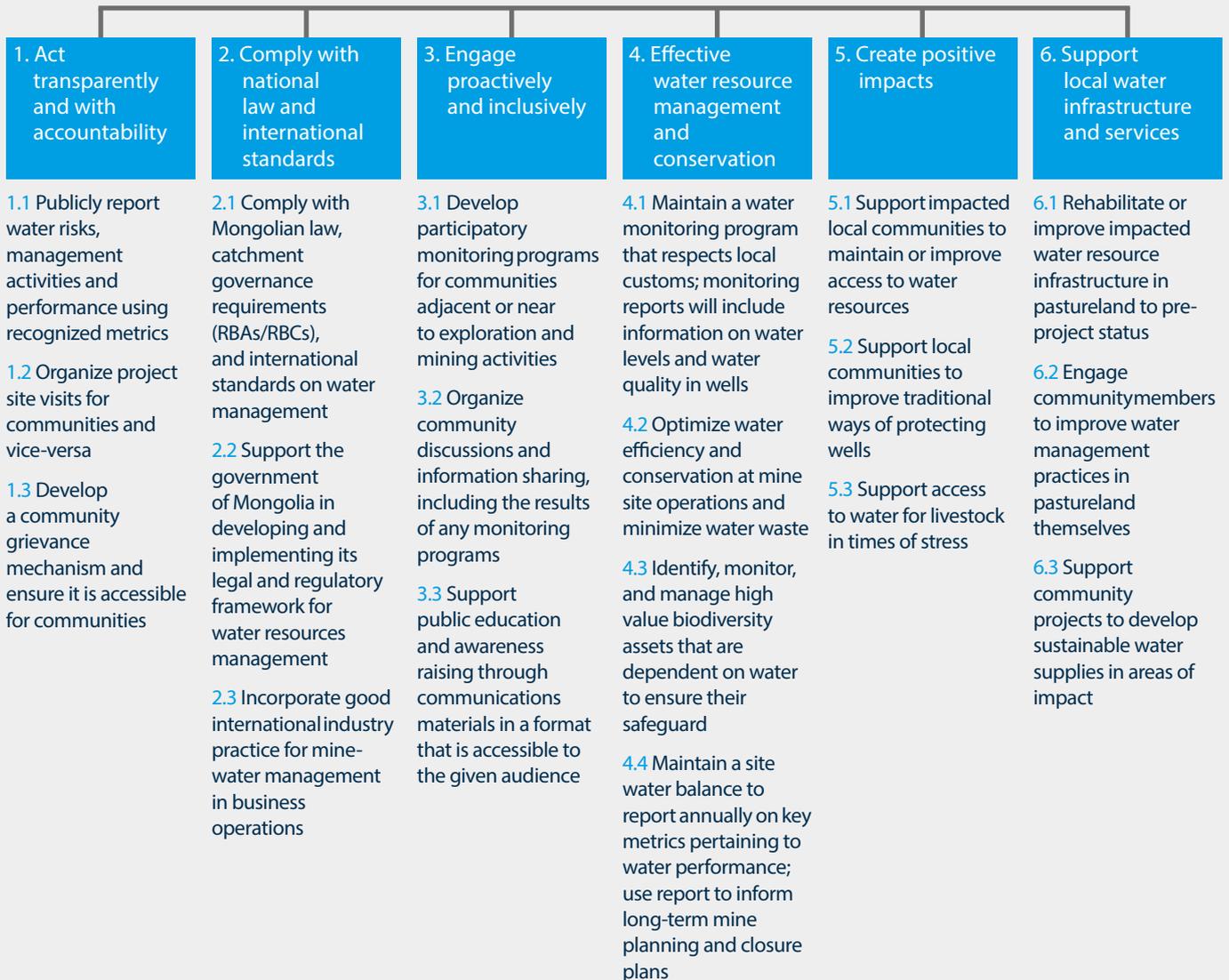
Vision

We will be responsible companies and build trust by working together to relieve water stress, support the development of sustainable communities and bring benefits to Mongolia.

Signatories

Energy Resources
 Erdenes Mongol
 Erdene Resource Development
 Erdenes Tavan Tolgoi
 Gobi Coal and Energy
 Oyu Tolgoi
 South Gobi Sands
 Terra Energy

Signatories file annual reports to assess performance across six pillars.



#2: Improving industry practice



Since the creation of the VCP, focus has been on maintaining compliance with the code and deepening skills in specific areas, as requested by the mining companies themselves. For instance, at an interactive workshop on developing mine site water balances, participants learned how to create process flowcharts and water metrics tables. The tables and charts summarize key information about water use and management on their site. It allows mining companies to compare their water performance with other sites while providing water-related information of interest to local communities.

Participating companies also agreed to adopt a consistent approach to water accounting and reporting. This approach builds on an Australian industry-accepted framework,¹⁸ adapted for the Mongolian context, to improve consistency and comparability of mine water use data over the long term.

In addition, industry workshops have focused on building the community engagement skills of participating companies across departmental functions. These skills will give them the tools they need to respond more effectively to stakeholder concerns.

Participating companies also agreed to adopt a consistent approach to water accounting and reporting.

18. The Water Accounting Framework, developed by the Minerals Council of Australia in conjunction with the Sustainable Minerals Institute of the University of Queensland, was adapted for the Mongolian context - http://www.minerals.org.au/leading_practice/water_accounting_framework_for_the_australian_minerals_industry

#3: Raising awareness and building skills



To establish common ground and improve understanding among diverse stakeholders, the roundtable members designed an original “Water & Mining in the South Gobi” curriculum. Emphasis was on integrating social and technical issues and highlighting the role of broad stakeholder participation. Initially designed as a three-day training program for government officials, community leaders, and industry representatives, the program has proven so successful that new video iterations have been developed. In the last three years, more than 1,000 people have participated in this training, with women making up about 50 percent

of the participation base. This gender balance was considered crucial since men and women are subjected to different impacts from mining.¹⁹ Several donors contributed to this multifaceted effort, most notably the government of Canada.

Future plans include broadcasting informational spots to promote water awareness on television and posting on social media sites. Lively and informative programming will deliver important messaging on topics such as hydrology, mining and water use, different stakeholder groups’ roles in water management, herder well-maintenance, and co-monitoring.

Future plans include broadcasting informational spots to promote water awareness on television and posting on social media sites.

19. Cane, I. Schleger, A. Ali, S. Kemp, D. McIntyre, N. McKenna, P. Lechner, A. Dalaibuyan, B. Lahiri-Dutt, K. and Bulovic, N. (2015). Responsible Mining in Mongolia: Enhancing Positive Engagement. Sustainable Minerals Institute: Brisbane. Available at: <https://www.csr.uq.edu.au/publications/responsible-mining-in-mongolia-enhancing-positive-engagement>

#4: Empowering broader partnership and action



Building individual company skills and raising baseline understanding across diverse actors has created a foundation for empowering broader partnership and action. The final component encourages cross-company teamwork as well as company-initiated outreach to communities and government authorities.

The idea is to create a new culture in which the standard behavior includes external engagement. In this way, mining companies become part of a long-term solution. They become proactive partners, on the front lines to identify and act on opportunities that address collective water issues and strengthen water governance.

Industry representatives themselves say that they have been encouraged to pursue new collaborative action. “There is an increasing willingness to participate in collaborative ventures,

on not just water but lots of other issues of a sustainable nature,” said Terra Energy’s Sustainable Development Manager Peter Smith. “I think there is a growing realization that you need to look at cumulative impact, not single source impact. And that came from the efforts of the IFC and the roundtable.”

Examples of how the engagement, cooperative spirit, and dialogue have helped catalyse additional action and yielded concrete solutions include:

- Cooperating across mining companies to develop new initiatives: These include co-monitoring programs with local herding communities and community-based development programs.
- Narrowing the gap between overall demand for water and available supply in two local provinces by encouraging use of calcium chloride instead of water to suppress mine dust at mine sites: This cost-

effective solution emerged out of a hydro-economic analysis conducted by the 2030 Water Resources Group.

- Considering the role of mining in contributing to biodiversity offsets through engagement with The Nature Conservancy.
- Improving hydrogeological data collection and disclosure to support broader government water monitoring initiatives and water governance.

How engagement has helped

Face-to-face interaction between mining companies and between mining companies and communities, as well as field trips to places of business, have all contributed to increased trust. Participating mining companies were able to see for themselves the kinds of water-preservation efforts that their neighbors were championing.

Box 2.1

Engagement initiative inspires company outreach

Erdene Resources LLC, a Canadian-based resource exploration company has maintained operations in Mongolia since 2012.

At a September 2015 roundtable hosted by IFC in the South Gobi, Erdene's executive team met representatives of the governmental authorities that oversaw the local river basins.

As they chatted together informally, the Erdene team learned about issues with abandoned herder wells near their exploration site. Installed during the Soviet era, the wells no longer functioned efficiently. They also were not registered with the authorities, making it difficult to monitor output or usage.

However, potential existed to restore the wells to full functionality—all it required was a financial investment to support the restoration and an agreement to work together to make it happen.

From these initial conversations emerged an agreement to partner on a project to clean and restore five non-functional wells. Erdene and its government partners also collaborated on a new facility that would support the wells.

The tangible result of this engagement: more water for local herders and more accurate information about water quality and quantity.



On one visit to the Oyu Tolgoi mine site, attendees saw first-hand the technologies that had been deployed to maximize its water recycling rate, such as use of an advanced tailings thickener and placement of a plastic cover on the water lagoon to reduce evaporative water loss. A separate visit to a mine owned by South Gobi Sands triggered discussions with MAK—a neighboring mine—about opportunities to streamline community engagement practices and share water balance data.

Setting an example; stronger together

The work in the South Gobi has altered the go-it-alone mindset that had typified mining company behavior in the past. The industry roundtables and training sessions have played a crucial role in promoting best practices and improving baseline understanding across mining companies, communities, and government. Key players on all sides have learned the value of working together on issues of importance for all. The new paradigm also means that when individual mining companies take action to improve their water management practices, the

information is shared widely, leading to stronger relationships and more community support.

Today, the initiative has become a platform for coordinated efforts among the 12 mining companies as they work with government and local communities to identify concrete and long-lasting solutions to water management in the South Gobi. It is the central clearinghouse where roles and responsibilities are spelled out and where future group actions that contribute to the greater good are defined.

February 2017 marked the one-year anniversary since companies signed the VCP, and the IFC team are now working to quantify the measurable achievements that companies have made during the past 12 months. This doesn't mean all the challenges have been resolved – there is plenty more to do. Information will be communicated back to local stakeholders to inform the evolving discussion about the role of mining in the South Gobi region and to consider how various stakeholders can continue to work together to achieve more sustainable water management outcomes.

In their own words

“In the last 20 years of experience, we have learned an important lesson that government and private sector companies cannot resolve these problems by themselves. Therefore, collaboration of all stakeholders, including government, companies, non-governmental organizations, local communities, researchers, and civil society is very important. Every party has their own responsibility and role to play.”

Dr Dorjsuren Dechinkhunde,
2030 Water Resources
Group Country
Representative

“Today the water usage data is not available, for the public it is quite closed and not transparent, so the next goal for us is to make this data public and available for every citizen. The government, mining sector, everyone has a responsibility to disclose the information to the public and every citizen has a right to look for this data. I believe that IFC’s roundtable is great initiative and gives a good basis and start of this whole process.”

Dr Chandmani Darbazar
Head of Altain Uvur
Gobi River Basin
Administration

“If you’re a collective group and you’re setting a very high standard for yourself... then the regulatory bodies will see that you’re trying your very very best and will hopefully try to push others to work to that standard as well... Efforts of the roundtable are setting an example and providing a standard not only for those involved in the roundtable but others as well.”

Peter Smith
Sustainable
Development Manager,
Terra Energy

“The mining operations cannot be conducted and managed without water. You can’t imagine mining without water. I think the main benefit from the roundtables is that water users have understood that being responsible on water use and having good water management practices in the mining operations is the basis for improving your business activities. By joining the Voluntary Code of Practice and getting into consolidated and systemized policy, we large water users are giving good example for our peers, and also are making great steps in bringing the international best practices in water management for the mining sector in Mongolia.”

Ariunbold Dogmidsangi
Environmental
Superintendent,
South Gobi Sands

“Water is life. Water is a precious resource. No one can live without water. By participating in the water monitoring program I can now see what is the water level, quality of water of my well and whether it is affected from mining or environment impact. By learning this, you can protect your water from contamination and find solutions to keep water safe in the future.”

Jargal Sumya, Herder-
participant in Energy
Resources’ co-
monitoring program,
Tsogtsetsii soum



Collaboration across the globe

In this section, mining companies engaged in collaborative action at sites around the world share their experiences.





The companies that shared their experiences all confirm that there is no single answer to highly complex water problems faced by mining companies and the communities where they operate. Much depends on the unique set of circumstances individual companies face: local operating conditions; varying political landscapes; business, environmental and social risks. Developing a thorough understanding of the interplay of catchment dynamics beyond the mine fence is a critical first step towards addressing complex water challenges. But turning these challenges into opportunities and tangible shared benefits for water users takes creative problem solving, true collaboration, and leadership.

This chapter highlights some key lessons for mining companies that are embarking on a collaborative water effort. They are illustrated with examples and case studies provided by colleagues and peers who have pioneered such collaborative approaches to water challenges.



1 Engage in dialogue to uncover opportunities and prevent crisis

The opportunities enabled through dialogue, such as local catchment knowledge shared with companies for increased water reliability, ensuring a shared understanding of risks and priorities at the catchment scale, joint governance that yields more practical water access legislation, and the like can result in positive outcomes that

will continue to reap benefits over the long term. Carefully cultivating and maintaining relationships through dialogue is an important and strategic tool. It is a proactive preventative that can uncover seemingly minor issues even from your harshest critics, enabling resolution before they become major problems. This will help head off future crises, reducing the risk of reactive regulatory interventions and conflict. During crisis, dialogue is a powerful tool as

well, helping to ease tensions and figure out a path toward resolution. This approach to inclusive, multi-stakeholder dialogue on shared water challenges has proven effective for Freeport's Cerro Verde mine. The mine has long standing engagement in a local water users committee as well as a strategy of continuing dialogue with the local municipality through several electoral cycles. See Box 3.1 for more on the Cerro Verde experience.

Box 3.1

In Peru, Freeport joins civic group; invests in infrastructure; wins support for expansion

Company partner:
Freeport McMoran

Driver:	A need to ensure that long-term water quality access problems do not escalate into conflict
Collaborative solution 1:	Participation in water users committee; facilitating dialogue
Driver:	Shared opportunity to resolve water quality and access issues
Collaborative solution 2:	Shared water treatment infrastructure

As unplanned communities were growing on the outskirts of the Arequipa city in Peru, water storage and treatment facilities struggled to keep up. About 90 percent of municipal wastewater was discharged directly into the Rio Chili—causing concerning levels of fecal coliform exposure for humans, agriculture and livestock.

Freeport's Cerro Verde mine has been a member of a multi-sectorial water users committee since 1983, which enabled the company to better understand local stakeholder needs. As a result of these relationships, Freeport representatives were able to engage directly with farmers, water utility company, water authority and social groups to better understand these challenges and help work towards solutions. Through this dialogue, Cerro Verde agreed to co-finance two dams to better regulate the Rio Chili system, as well as a potable water plant. Then, when social groups began advocating for waste water treatment in the city of Arequipa, Cerro Verde

was able to seize an important business opportunity to facilitate its mine expansion plans while also contributing to sustainable development.

Cerro Verde agreed to build a \$500 million waste water treatment plant for the city within the mine concession. In exchange, Cerro Verde would receive a portion (1m³/second) of the treated wastewater for mining operations.

Today, Cerro Verde has an agreement with the local water utility (SEDAPAR), which is owned by the district mayors of Arequipa, to operate the plant.

Finding opportunity; creating broader benefit

With the commissioning of the wastewater treatment plant in 2015, approximately 99 percent of city sewage is now treated, up from just 10 percent in 2013. Fecal coliform counts in the river have been significantly lowered, reducing incidents of water-borne illness

and improving agricultural outputs. Meanwhile Cerro Verde’s mine expansion project was completed on schedule and on budget, without any days lost to social protest and now has a secure water supply for its expanded operations.

“This project showed us that companies can be really good partners to resolve environmental problems and create win-win solutions,” noted James Fernández, former President of SEDAPAR’s board. “In this case the environment benefits, water users benefit and mining benefits. It’s a virtuous circle.”

The mine’s relationship with local stakeholders continues to improve as the company maintains its participation in the water users committee. Through the building of shared infrastructure, the bonds have been further strengthened.

The ongoing dialogue means that all sides are able to clear the air before minor issues become major problems. “There may be disagreements from time to time, but there appears to be sufficient trust in the company to enable issues to be dealt with proactively, preventing issues from escalating into conflict,” said Julia Torreblanca Marmanillo, Vicepresidente Asuntos Corporativos, and Sociedad Minera Cerro Verde.



As climate change continues to impact the region and water scarcity becomes increasingly acute, Cerro Verde has committed to continued participation in the committee. This will help avoid future conflicts with local farmers and other stakeholders.

Keeping everybody on board, over and over

This effort required intensive engagement and was not without its challenges. One of the biggest issues was the changeover in key stakeholders driven by the electoral cycle.

From the point of exploring the feasibility of a wastewater treatment plant in 2010 through to the commissioning of the plant in 2015, several key roles changed hands, including agency staff and the elected mayors who own SEDAPAR, the partnering utility.

Keeping people informed and the project moving forward while getting new people up to speed on past discussions and decisions was a challenge. It meant that the plant construction approvals took longer than initially projected. However, it also facilitated the licensing of the mine expansion, since many more

stakeholders were well informed and participated in the evaluation and approval process.

“The key is to be transparent and work with government and communities all together,” said Julia Torreblanca. “This helped us understand the priorities of the community and helped people understand how authorities and the mine could support those priorities.”

“The key is to be transparent and work with government and communities all together, this helped us understand the priorities of the community and helped people understand how authorities and the mine could support those priorities.”



2 Use collective creativity to find novel solutions to shared problems

It's not just a matter of working together because the regulator says so, or because the company's reputation is endangered by a crisis. Rather, given that water is a strategic asset that must be safeguarded, the imperative is there to deploy the very

best of collective creativity, resources and innovative technologies to solve costly and complex problems.

Anglo American and South32 have done just this. They seized an opportunity to share the costs of an innovative solution to acid rock drainage which ensures their ability to operate and expand, whilst creating a replicable solution to South Africa's water problems.

Box 3.2

From mine waste to tap water: Anglo American and South32 partner to solve regional water problems

Company partners:
Anglo American and South32 (previously owned by BHP Billiton)

Driver:	Increased regulation and opportunity to resolve shared water availability issue
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Collaborative solution:	Mining companies collaborate with local municipality to share costs of water treatment facility
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South Africa's eMalahleni Water Reclamation Plant is a spectacular feat of engineering. This \$200 million state-of-the-art facility currently treats more than 30 million liters of acid rock drainage every day, transforming 16 million liters of it into drinking water for more than 80,000 consumers in a highly water-stressed, cash-poor, and rapidly growing urban municipality.

Built in 2007 as a collaborative project of Anglo American, BHP Billiton (now owned by South32) and the eMalahleni municipality, the plant broke new ground as the world's first facility to treat acid rock drainage, purifying it to potable standards.

It has reduced to net-zero Anglo American's reliance on external water sources, since the treated and recycled water meets all of the water needs of Anglo American's mining operations in the area.

Collaboration and co-investment to solve an existential business problem

The plant came about because the two companies—both vying for a dominant share of the local coal market—understood that they needed to address a shared business threat and forego any potential competitive advantage of doing so alone.

Concern was growing over water availability as more people migrated to the city. To address the situation, the government imposed new—and expensive—water treatment regulations on the industry.

The only way to solve the complex web of problems was for the two companies to work together, along with the government, community leaders, and other private sector players.

The eMalahleni wastewater recycling plant has set a new standard as a force for sustainability in a changing climate. Other companies and other municipalities in water stressed regions are now replicating the effort.



So, they did. They co-invested in the water treatment plant, benefitting from economies of scale in meeting regulatory requirements while turning an environmental liability into a business and societal asset—but not without a lot of dialogue and ongoing consultation first.

To ensure alignment across key stakeholder groups, discussions were held in various forms, with regulators, through community seminars, water usage agencies and other existing water usage agencies. To get to this solution, the mining companies engaged in frequent dialogue and back-and-forth discussion.

Due to thorough stakeholder engagement, everyone involved had good understanding of the project, which led to timely permitting. The press contributed significantly by elevating the public profile of the project with frequent news articles. This enhanced the level of interaction and public participation.²⁰

Organizational infrastructure to monitor progress

The partners set up an operations liaison committee as the central body to evaluate performance against targets and planned production. Today, committee meetings continue to serve as a platform to manage water supply contracts and service-level agreements between stakeholders. The active committee also ensures that the policy of open engagement regarding the water treatment facility will be maintained and that the supply of water will continue to benefit the public at large.²¹

Challenges remain but rewards outweigh risks

The partnership is not without its challenges, mostly due to irregularities in the financial arrangements with the municipality, which pays for the water transfer and chlorination.

Still, with the rewards far outweighing the risks, the original partners have broadened their collaboration to include a wider focus on longer

term water sustainability. “We’re definitely getting better at collaboration,” says Ritva Muhlbauer, Water Manager for Anglo American’s coal business.

The first mining initiative endorsed by the United Nations Framework on Climate Change, the eMalahleni wastewater recycling plant has set a new standard as a force for sustainability in a changing climate. Other companies and other municipalities in water stressed regions are now replicating the effort. It has brought additional benefits to the municipality as well: job creation, lower water costs, and increased access to clean water by poor communities, resulting in public health improvements.

20. Sergienko, N. (IWA) The eMalahleni Water Reclamation Plant in South Africa, http://www.iwa-network.org/filemanager-uploads/WQ_Compendium/Cases/The%20eMalahleni%20Water.pdf

21. Ibid

3 Coordinate internally to ensure clear external messaging and strong engagement

Effective engagement in resolving catchment-scale water management challenges requires that water strategies are developed and implemented with organizational alignment. The crosscutting nature of water issues is such that they can affect every department and may have operational or strategic implications. It is crucial that companies adopt a consistent approach for addressing water issues and that new staff are adequately briefed on a common vision. Care should also be taken to ensuring that there is alignment both horizontally (across departments) and vertically (from the CEO to the operator).²²

In some cases, having a single point of internal contact to coordinate among all relevant disciplines interfacing with water both internally and externally can help ensure good oversight over the suite of risks. It also could result in more aligned risk response options

as well as create clear accountability. In addition, it can reduce the risk of sending mixed signals to local stakeholders. If the construction team is saying one thing, while the social team is saying something else, and legal has yet another take, this could undermine efforts to build trust.

The importance of internal coordination around water was highlighted in the South Gobi case study, for example. The social development teams often operated separately from the technical and operational teams which resulted in missed opportunities to share companies' good water management practices with the public.

Engagement strategies and partnership plans should also be built into capital and life-of-mine plans. They can be delivered through corporate sustainability reporting targets, embedded key performance indicators (KPIs) and performance measures at an asset president or CEO level to ensure strong internal governance and corporate buy-in.

The crosscutting nature of water issues is such that they can affect every department and may have operational or strategic implications.



4 Share control to realize shared benefits

Community resentment can sometimes be fueled by a sense of powerlessness relative to companies and government. The companies interviewed for this paper have reported that empowering communities is an essential part of building trust. The Upper Hunter Mining Dialogue in Australia demonstrates how providing a forum for people to interact and to collectively identify and resolve problems underlies success and promotes durability.

22. Kunz, N. C., "Catchment-based water management in the mining industry: Challenges and solutions". *The Extractive Industries and Society* 2016, 3, (4), 972–977.



Box 3.3

Forging productive relationships in Australia's Upper Hunter Valley

Company partners:

Rio Tinto, BHP Billiton, Glencore, Ashton Coal Operations, Bloomfield Collieries, Coal & Allied, Muswellbrook Coal Company, NSW Mineral Council, Peabody Energy

Driver: Community unrest about mining environmental and social impacts

Collaborative solution: Mining industry collaborates to lead a dialogue with all water users, including long-term shared governance and collaborative actions

As the coal industry was thriving and growing in the Upper Hunter Valley, there was a growing discontent about mining's negative impacts on the local environment. For local residents, mining operations were creating dust and noise. They were impacting housing, water quality, and water availability.

The mining companies active in the area realized that the concerns raised were not specific to any one site. They understood that a collective response would be required to address the issues. The Upper Hunter Mining Dialogue was established in 2011, bringing together eight coal producers with community, environmental, and business groups, as well as local government and regulators.

The value of interaction and shared decisions

Both industry and communities have recognized the importance of relationship building with communities and between companies.

"The positive I've seen from the dialogue is around building relationships," said Chris New of Rio Tinto. It is also around building trust with both community members as well as within industry. "Because people have been finally able to connect a mine or a project with a person, they can then have that proper conversation they should've been having a long time ago and feeling like they're getting to know those people as individuals, not just as committee members," he added.

From discussion to practical action

From the outset, companies recognized the importance of turning community discussions into practical actions in order to build trust. They set

up working groups that identified specific projects to take on, such as the development of a water accounting framework.

This further built the credibility of their commitment to communities as efforts and actions got underway. "I think you need a genuine commitment from the industry to actually put in place the things that are being talked about," said John Drinan, one of the community representatives.

In 2015, the Dialogue set up a joint steering committee, which strengthened the commitment to shared decision making with communities even more. It also firmly positions the Dialogue as a proactive force for engaging with communities. It is clear that the Dialogue seeks to understand their concerns even when the industry is not being directly challenged. Over the long term, this approach will help to reduce future risks to mining companies in the region, such as discontent around economic opportunities post-closure.



Empowering others does represent a challenge: relinquishing control. Collaborative action and commitment to meet the needs of others brings an element of financial and operational uncertainty and constraints on a company. Some companies get anxious that they will lose influence over time frames given their work is time sensitive. In the Athabasca region of Canada, AREVA and Cameco demonstrated that allowing communities to define

and measure water problems led to increased trust. It helped overcome community concern about pollution and reduced resistance to the industry’s expansion. This approach is sometimes known as “going slow to go fast.” Enshrining such shared control in a legal agreement does pose constraints on the companies, as well as some increased uncertainty. However, according to the companies themselves, such trade-offs are well worth the price. For more, see Box 3.4.

Box 3.4

In Canada’s Athabasca, exchanging business certainty for increased community trust

Company partners: Areva, Cameco	
Driver:	Community concern arising from historical uranium mining impacts on water resources
Collaborative solution:	Mining companies collaborate to establish a committee and an agreement with the community, empowering communities to test and monitor water quality

In the late 1990s, AREVA and Cameco, two uranium mining companies active in Canada’s northern Saskatchewan province, took a leap of faith. They committed to long-term independent environmental monitoring.



It was a big deal for the companies, which—like many—were accustomed to a corporate culture of privacy and tight control. It also was a big deal for the leaders of six local communities, who had seen the pollution arising from poor management of effluent by mid-twentieth century mining operations.

Taking risks

Overcoming their hesitation, the parties gathered around a conference table. One by one, they signed a landmark partnership agreement that would ensure enduring trust that the companies will take care not to pollute the community’s precious waterways. Together, they created the Athabasca Working Group (AWG) Community

Environmental Monitoring Program, to carry out regular sample collection and analysis to monitor pollution levels.

AREVA and Cameco financed participatory water testing for areas and contaminants that were of concern to communities, in addition to testing already conducted by the company in accordance with industry best practice. To Russell Powder, a community representative from Uranium City, the most important aspect of the program is that he could go out and collect the samples himself. “Being there and knowing they’re being honestly taken” is key, he said.

Since 2000, CanNorth, an independent environmental agency owned by members of one of the local nations, has supervised the monitoring program. CanNorth deploys its own scientists along with citizen monitors—local residents who assist in the testing process.

Reaping rewards

The monitoring has shown that the best-in-class pollution controls put in place at the mines are effective. A rewrite of the original partnership agreement has reduced some of the significant obligations as a direct result of the increased trust the communities have in the company. In fact, today the mining companies say they have a strong and positive working relationship with the local communities.

The hard-won bond of trust also has resulted in a tangible business benefit: the Athabasca Basin communities are supportive of new developments and licensing applications.

Overcoming their hesitation, the parties gathered around a conference table. One by one, they signed a landmark partnership agreement that would ensure enduring trust that the companies will take care not to pollute the community's precious waterways.





5 Focus on transparency to help align perceptions and actions

In the South Gobi, the companies had to overcome ongoing community concern that mining companies were using up too much of the region's limited water resources. Companies across the globe face a similar problem: public concerns about their impact on water. Regardless of whether the mining industry itself feels responsible for changes in the water system, negative public perception alone can trigger community protests or regulatory action against a company.

These differences in perception can be compounded by a lack of transparency, overly technical communications on water challenges, and just plain lack of communication. So, companies should engage with stakeholders who feel they are impacted by the mine's water use or effluent, along with groups

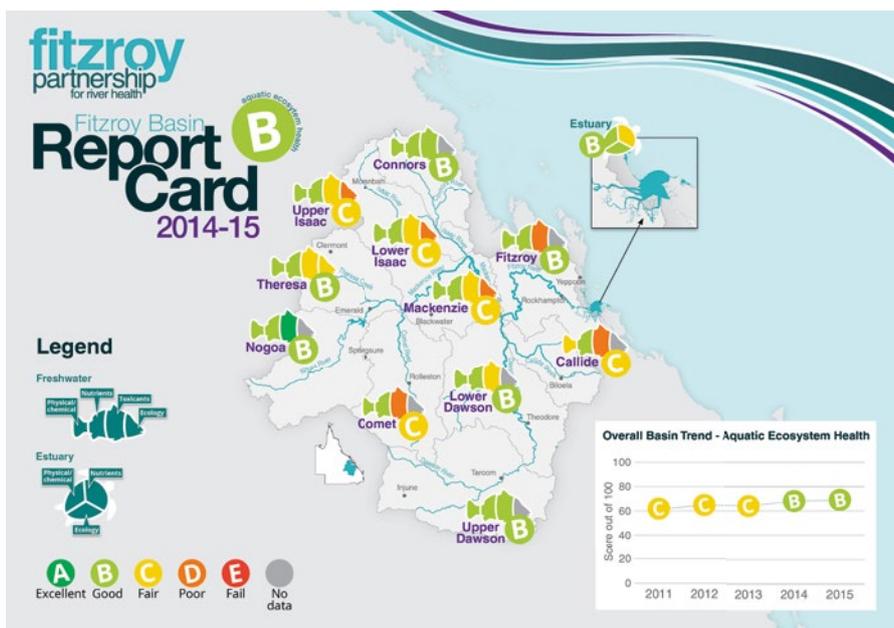
that represent their interests, such as governments and civil society organizations. It is important to communicate using methods and language that is tailored to resonate with particular stakeholders, especially communities. When harnessed collaboratively, social media can also help facilitate the exchange of accurate accessible information about the catchment and positive outcomes in a credible and more complete way.

In the South Gobi, for instance, mining companies are working together to develop communication material describing key metrics about the amount of water that is collectively used by the mining sector in a way that is accessible to communities. According to Terra Energy's Peter Smith, these initiatives mean "the messaging from the mining industry is more consistent, which is important. It also means that we're probably more transparent as a collective body than we would be on our own."

Another way to increase transparency is through involving other stakeholders, such as local communities in water monitoring. Companies in the South Gobi are doing this, as are AREVA and Cameco in the Athabasca Basin, Canada with their Community Environment Monitoring Program (see box 3.4).

The Fitzroy Basin's report card offers another example of an accessible online tool that is improving data transparency of mining companies within the region, using maps and images to make it easy for a non-technical audience to understand.

"the messaging from the mining industry is more consistent, which is important. It also means that we're probably more transparent as a collective body than we would be on our own."





6 Share information for better water allocation decisions

It is impossible to accurately assess the impact of an individual user, including a mining company, without gathering information from all users on how their activities are affecting surface and groundwater systems. By combining all of this information, and anticipating future needs everyone gains a fuller understanding of the overall risk to the catchment. Parties can also consider ways to optimize the natural water cycle across all users. This contributes to effective allocation

and governance of water resources. To address the lack of big picture understanding, the companies in the South Gobi are working together to share their water use and monitoring data with external stakeholders. Similar information sharing took place among mining companies active in Australia's Fitzroy Basin. Here, pollution incidents disproportionately raised the profile of mining water discharges in the public eye. A long-term partnership forged among all the water users has resulted in the creation of a credible and transparent picture of cumulative impacts.



“Too often decisions and understanding are informed on incorrect perceptions of the catchment and its function.”

Box 3.5

Multi-Industry Fitzroy Partnership: competitors and critics unite for river health

Company partners: Peabody Energy, BHP Billiton, Mitsubishi Alliance, Anglo American, Rio Tinto, Glencore	
Driver:	Lack of understanding of cumulative impacts
Collaborative solution:	Coordinated and shared water monitoring and reporting

In 2008, the mining industry in Australia’s Fitzroy region became the focus of concerns over water quality after a mine pit filled with floodwaters. This resulted in higher than normal discharges back into the local waterways. Although the Fitzroy Basin had been under pressure from various kinds of human activity for many years, the eyes of the community and regulators were focused on the mining industry.

A perception problem

Communities were targeting the mining industry with their water quality concerns. The mining sector’s social license to operate was at an all-time low. It was essential for any solution to include participation from sectors that were potentially contributing to water quality issues as well as those who believed they had been impacted, such as representatives from the agricultural industry and local

community. This inclusive approach would assist with credibility.

A collective solution delivers a more complete understanding

With the involvement of more than 20 organizations, all with competing interests and differing opinions on other topics, agreeing on a way forward was significantly more time-intensive than a company-led response. With the support of the Fitzroy Basin Association as an independent mediator, the group ultimately found a key point of consensus to unite the group: a more complete picture on river health was needed.

The response also needed to be collaborative, the group determined. As the Fitzroy Partnership was formed, each partner committed to a collectively designed, consistent, and accessible reporting system.

“Our view was that catchment communities, policy makers and regulators should be informed by a science-based understanding of the catchment and the various water contributions that occur within that catchment,” explained Rio Tinto’s Stuart Richie. “Too often decisions and understanding are informed

on incorrect perceptions of the catchment and its function.”

The importance of maintaining vigilance after the crisis has passed

Social pressure following the flood events elevated the importance of collaborative reporting and data sharing for companies. Today, the memory of the 2008 flooding incidents is fading and social and regulatory pressures have declined. Global coal and gas prices have dropped. And companies have downsized. Yet, coal and gas output from the basin is expanding and industrial and population pressures on water and pollution continue to increase.

According to Nathan Johnston, head of the Fitzroy Partnership for River Health, there were warning signs of the dangers of longer-term cumulative impacts long before the 2008 floods. Continued investment by companies in the partnership today will ensure that cumulative impacts are better understood, in turn empowering industry to mitigate future environmental risks. “It also will serve to prevent undue pressure on the industry should an incident arise in future,” he said.



7 Use collaboration as a tool throughout the mine life cycle

As companies see changes in staff—through business cycles and through their own project cycles—they should not lose sight of long-term risks even in the absence of public scrutiny. In the Fitzroy Basin, companies learned from past mistakes: if they had responded to long running pressures on water quality before pollution incidents brought them into the spotlight, they might have prevented the social and regulatory pressure the industry faced during a crisis. Remembering this lesson is a key reason the companies continue to engage. The Fitzroy Partnership framework ensures this collaboration continues regardless of staff changes and economic downturns.

Companies in the South Gobi have also realized the value of collaborating

across different stages in the mine life cycle. The industry roundtables have provided a central meeting point for companies spanning the phases of exploration, construction, and operations, to share experiences and know-how. Engaging early has proven a smart strategy for some exploration companies. They see it as an opportunity to anticipate future water challenges. According to Erdenebileg Pagva, from Erdene Resources, “It is really helpful for us to learn about other mining companies such as coal and other minerals which are located in South Gobi, how they manage water, how they deal with some issues, so when our mining operations start we would know where we should focus more.” The frequency of the roundtables has also helped to ensure ongoing commitments to high water management standards despite staff and contractor changes. For example, participatory water monitoring and efficiency programs have now become

standard practice within the South Gobi, creating economies of scale and reputational benefits for all companies as they engage with governments and communities.

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8 Don't be afraid to seek help: partnerships are challenging

Engaging with stakeholders is not a cure-all for site water problems. It cannot and should not replace best-practice mine site water management, and it is not to be taken lightly. Real and effective partnerships are challenging.

Coming to a common vision is critical to the success of the partnership. But this can be both difficult and time consuming. The interests, objectives, roles, and exit strategies of each party must be clear and agreed from the beginning. The needs of all of actors have to be reconciled. Timelines will be different, too. Mines are constrained by production and life of mine timelines, while government decisions

may be driven by political cycles. Looking ahead, partners must agree how shared infrastructure such as the water treatment plants developed by Cerro Verde in Peru and by Anglo American and South32 in eMalahleni in South Africa will be maintained and run long after the mine comes to a close.

Today, the South Gobi program in Mongolia is struggling a bit to maintain company involvement, funding, and institutional support, since the initial business risks have receded.

One company executive acknowledged the difficulties in sustaining program momentum. It feels “like pushing water uphill. You have to keep pushing because the minute you stop it will come down,” said Mark Newby from the Oyu Tolgoi mine. “A program like this will need that continuous

motivation from the involved parties to keep the momentum going. I'd hate to see it stall. But I do say that's probably the greatest risk going forward—that we lose momentum we've already achieved.”

A third-party broker can play a critical role in aligning interests and opinions of those participating in a partnership to uphold ownership and accountability. IFC has played this role in the South Gobi since the program's outset, however the team is currently seeking a local-level secretariat to convene ongoing collective efforts and ensure program sustainability into the long term. The Fitzroy Basin Association also has played this honest broker role, enabling more than 20 stakeholders with differing views to agree to a shared objective of establishing “a more complete picture of river health.”

Concluding thoughts

While collaboration is by no means a new thing, it is still not the widely accepted practice among all mining companies. In fact, mining companies fall along a broad spectrum here—from insistence on privacy and going it alone through to open and transparent engagement with other competitors, industry users, and community stakeholders.

As the global water agenda is moving towards a more comprehensive, inclusive, and collaborative way of developing and managing water resources, mining companies can have an important role to play.

As explained in the introduction to this paper, the international spotlight will shine ever more brightly on the mining sector and its role in the global sustainable development agenda. This includes the contribution of mining companies to the UN's Sustainable Development Goals, particularly SDG6 which has an explicit focus on water and sanitation.

Governance of water is increasingly being devolved to local structures. As we saw in Arequipa Peru, Cerro Verde was able to participate in a water users committee and therefore be a part of discussions around water risks and opportunities to manage them. In other places, industry is taking the lead on managing problems holistically. New South Wales Mining is leading industry's engagement with other stakeholders on environmental and social problems in the Upper Hunter Valley. In the South Gobi, mining companies are strengthening dialogue with local governments and taking proactive steps to share their hydrogeological data and improve regional water monitoring.

In South Africa, the Strategic Water Partners Network has taken collaboration to the next level. Looking wider than the immediate catchment, and beyond one industry, the partners are working together to find solutions to water issues that challenge the future growth of the South African economy (see box 3.6).

This broader, regional approach sets the bar high for what collaborative action could look like in the future. "South Africa faces many water challenges. None of them are insuperable, but to address them will require the best talents the country can muster," noted Mike Muller, of the country's National Planning Commission. "The Strategic Water Partners Network can assist government by mobilizing skills from the private sector to work together on the most urgent priorities. This is a win-win initiative since the whole country benefits from the water security that we currently enjoy—and will lose if we fail to sustain it."¹⁸

The case studies showcased in this paper demonstrate that inclusive collaboration, while often challenging, can achieve significant and equitable benefits for communities, governments, and industry. As a water intensive industry, mining companies must capitalise on lessons learned

across the sector and integrate collaboration into their corporate and operational water strategies; future proofing their business and contributing to a sustainable water future for everyone.

Box 3.6

Strategic water partners close water gaps in parched South Africa

Company partners: Anglo American, South32, Nestle, SAB Miller, agricultural industry	
Driver:	Shared benefit of ensuring future sustainability of water and the economy
Collaborative solution:	National-level multi-industry and multi-stakeholder network to share knowledge and implement innovative solutions

South Africa’s deteriorating water quality is a key factor in the country’s water demand-supply gap, which is estimated to increase to 17 percent by 2030, if the problem is not addressed.²³

In South Africa, water is a critical resource for many economically important industries. However, water scarcity and pollution problems threaten the future of the very industries on which the economy depends. The Strategic Water Partnership Network (SWPN) is a coordination platform between the South African private sector, government, and civil society organizations. In the SWPN, mining companies engage with companies from other industries, including SAB Miller, Nestle, Eskom, as well as the agricultural sector.

The network focuses on collaborative innovations to solve water quality and availability problems. For

every problem faced, a business opportunity is seized and the sustainability of the economy is further safeguarded.

One innovation has demonstrated how mining and agriculture can reinforce each other. A flagship pilot is exploring use of mine waste water to irrigate highly salt-tolerant crops such as soybean and wheat, reducing mine water run-off treatment costs while ensuring sustainable food exports.

Participating in the SWPN is about more than immediate business benefits for Ritva Muhlbauer, Water Manager at Anglo American’s coal business. “Participating in this group means we are no longer simply responding to regulatory threats,” she said. “We are a part of shaping the future of water in South Africa, because the future of business depends upon it.”

Added Muhlbauer, “We get exposed to practices that, for example, the breweries would be doing such as saving water and becoming more efficient. You get exposed to different philosophies in how to deal with water as well.”

Anglo American is not alone. GIZ’s Dr. Nicole Kranz noted significant private sector interest in the issue. “A regional water stewardship conference [in 2015] attracted over 200 participants of which over a third was from the private sector,” she said.²⁴

The takeaway is this: Increasingly, businesses are taking note of the risks. More and more, they are realizing that they need to talk to each other and to others about water.

23. ‘South African industry works towards ensuring water sustainability’ Mining Review Africa, 23 August 2016, <https://www.miningreview.com/news/south-african-industry-works-towards-ensuring-water-sustainability/>

24. ‘Exclusive interview with Dr Nicole Kranz, Country Coordinator South Africa: International Water Stewardship Programme, GIZ, SA’ ESI Africa, 16 March 2016, <https://www.esi-africa.com/features/exclusive-interview-with-dr-nicole-kranz-country-coordinator-south-africa-international-water-stewardship-programme-giz-sa/>

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