Calculating the Net Present Value of Sustainability Initiatives at Newmont’s Ahafo Mine in Ghana (A)

Newmont’s future depends on our ability to develop, operate, close, and reclaim mines in ways consistent with our commitment to sustainable development, protection of human health and the environment, and adding value to the communities in which we operate.
- Wayne W. Murdy, [former] Chairman and CEO

At end of day, if you don’t have figures, you don’t have good analysis.
- Lester Ampong, Senior Business Planning Analyst, Newmont Ghana Gold Ltd., Ahafo

INTRODUCTION

The Regional Vice President Environment and Social Responsibility (ESR), Newmont Ghana Gold Ltd, had reason to feel confident. As a leader of the environment and social responsibility function at Newmont Mining Ghana Gold, Ltd., he had overseen a string of successes. In just a few years, Newmont Mining Corporation (“Newmont”), a parent entity to Newmont Ghana Gold Ltd., one of the world’s largest gold mining companies, had remade its image, in the communities where it operated, from that of a perceived and reviled bully to responsible citizen. The work of the ESR Team and their Corporate leader, Senior Vice President and Chief Sustainability Officer, had propelled the company to be the first gold mining company in the Dow Jones World Sustainability Index, comprised of world leaders in economic, environmental and social practices.

Newmont hadn’t always enjoyed such accolades. Just a few years earlier, like many of its peers, it had found itself mired in controversy at a number of its operations. In Peru, the company faced strikes and protests. In Uzbekistan, one of its mines was expropriated by the national government...
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after a tax dispute. Newmont’s Yanacocha mine (Peru) also had been investigated by the Compliance Advisor Ombudsman as part of a conflict dispute resolution process and their Ahafo mine (Ghana) pilloried with a Public Eye Award, bestowed annually by Greenpeace and the Berne Declaration on companies that it believed committed “evil offenses” against their communities and the environment. A Public Eye press release had chided Newmont for its “scandalous gold mining project in Eastern Ghana,” at Ahafo. The head of the Ghanaian nonprofit that had nominated the company accused it of undertaking “brutal forced relocations” of local people, destroying wildlife habitats, and poisoning land and rivers. Newmont demonstrated the accusations were incorrect, posting a point-by-point rebuttal online clearly demonstrating the contrary with facts and details. But its answer hadn’t received half the attention of the allegations and they typically do not.

Now, thanks to Newmont’s work and a company-wide commitment to sustainability and on-the–ground performance, the taint had dissipated, the torments had passed, and Ahafo seemed poised to become one of the company’s most important mines. Newmont had not only moved beyond controversy but also had been lauded as one of the sustainability leaders in its industry. This progress was all the more remarkable because Newmont was not alone in the industry in its efforts to improve sustainability practices. Thus, as his annual budgetary review approached, the Regional Vice President expected another supportive process without challenge. That, after all, would ensure that Newmont didn’t backslide from its hard-won gains.

When the meeting came, it didn’t follow the script that he had written in his head. Instead of plaudits and a free pass, he got pushback. At the meeting, Newmont’s Leadership Team, asked “whether we might not be spending too much.” He responded with mock outrage: “What are you looking for—the amount of our budget that you could cut before something bad happens?” Sarcasm aside, he couldn’t believe that he was being asked to justify his budget in light of all of the recent success and good news. But his boss wasn’t budging. His answer was calm but firm: “Look, every other decision we make in this budget review process is based on the business case. But when it comes to sustainability, the argument always shifts to what is right or better. The answer can’t always be that we have to spend more. At some point, that eats into profits we could return to shareholders, wages we could pay our employees, investments we could make. Tell me why we are spending this much money. Until you can, your budget is fixed.”

The Regional Vice President left the meeting discouraged—and pessimistic about his ability to defend his work in dollars-and-cents terms. He was sure that better community engagement had benefitted Newmont. He saw that in the positive press the company received, in its improved relations with leaders in the communities where it operated, and in the morale of employees who worked at its mines. But he wasn’t sure that he could quantify those gains. He wasn’t sure

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1 “The Office of the Compliance Advisor/Ombudsman (CAO) is the independent recourse mechanism for projects supported by the International Finance Corporation (IFC) and Multilateral Investment Guarantee Agency (MIGA)—the private sector lending arms of the World Bank Group. The CAO helps address the concerns of communities who believe they are affected by IFC/MIGA projects with the aim of improving social and environmental outcomes on the ground.
anyone could. While the costs of sustainability spending appeared on Newmont’s income statement, the benefits that they produced didn’t appear in the same quantitative terms. Positive press, political goodwill, employee morale, and corporate reputation were the sorts of intangible assets that accountants had long said they couldn’t put precise values on.

Then, as he trod back to his office, he recalled a conversation that he’d had with the Community Development Team (CommDev) at IFC, the private sector arm of the World Bank Group. The CommDev Team had said that they were developing a methodology to calculate the net present value of sustainability initiatives. When they described the approach, he had been intrigued but too busy and distracted to make it a priority and the methodology was still somewhat nascent and under development. Besides, he’d believed then that the business case and benefits for Newmont of sustainability were so obvious that they didn’t need to be quantified. Additionally, methods for quantifying the benefits were not readily available or tested. At that point, he was receiving questionless support for his budget requests, and his bosses seemed committed to pushing the company to the frontier of sustainability practices.

Now, confidence shaken, he called the CommDev Team. Soon, Newmont had signed on to have its new mine in Ahafo serve as the second pilot study of the deployment of a Financial Valuation Tool for Sustainability Investments (FVTool available at www.fvtool.com) that IFC was developing with Deloitte, the international accounting and consulting firm, Rio Tinto and the Multilateral Investment Guarantee Agency (MIGA).²

The new tool was supposed to do net present value calculations for sustainability projects just like the ones done for any other sort of investment. It offered the hope that he would be able to boil all of Newmont Ahafo’s sustainability programs down to a set of numbers using financial metrics and thus give his boss the kind of proof that he wanted—if the new method worked.

NEWMONT

When the IFC-Deloitte team arrived in Ahafo in the spring of 2010, Newmont was the world’s second largest producer of gold. It had over 17,000 employees and 26,000 contractors at ten active mining sites in a far-flung list of countries: Ghana, Peru, the United States, Mexico, Indonesia, New Zealand, and Australia. It also had three new projects under development in Ghana, Peru, and Canada. About a third of Newmont’s proven and probable reserves in 2011 originated in emerging markets.

Newmont had originated in 1916 as a holding company for extractive enterprises spanning oil and gas drilling and copper and gold mining in the United States. It had invested in South Africa in 1917 and then made post-World War II expansions to Peru, the Philippines, and Algeria. In the 1960s, it sold off many of its developing-world operations and thus had managed to sidestep the wave of expropriations and nationalizations that bedeviled its industry in the 1970s and 1980s. Toward the end of those tumultuous two decades, Newmont faced pressure to sell off its South African holdings—apartheid had made South Africa an outcast, and western companies

that operated there were seen as supporting a rogue regime. Financial needs also contributed to the decision to pull out of South Africa: Newmont had accumulated a hefty $1.9 billion in debts in fending off several takeover attempts. When the company exited South Africa, it was left with a focus on the mature markets of North America and Australia.

Now, ore reserves on those two continents were showing signs of dwindling [See Exhibit 1]. They’d peaked at 26% of world output in 1990 and had been falling since. South Africa was seeing an even steeper drop. Its share of global output has fallen steadily from 71% in 1980 to 7.4% in 2010. If Newmont was to replace its reserves, its only promising option was new mines in emerging markets. Of the top twenty global producers of gold in 2010, eight had produced no substantial output as recently as 1990. New countries such as Mali, Tanzania, Argentina, Mexico, Ghana, Peru, Indonesia, and Uzbekistan were rapidly becoming major gold producers.

Starting in 1992, Newmont’s exploration efforts in the developing world had begun to yield substantial new reserves and production first at its mines in Yanacocha, Peru, and Muruntau, Uzbekistan, and then, through acquisition, in Ghana [See Exhibits 2-3]. But diversification into the emerging markets posed challenges. In addition to scarred landscapes, caravans of trucks covering remote villages with dust and disputes over land acquisition or the use of cyanide, gold mines also often became targets of politicians and their cronies seeking bribes and aggrieved communities demanding concessions.

A decade-long rise in the price of gold [See Exhibit 4] both fueled these demands and gave Newmont and its competitors the wherewithal to meet legitimate demands without sacrificing returns for shareholders. Even so, each mine and each country where Newmont operated posed unique challenges. The costs of production (on a per ounce basis) of the mines have shown a substantial increase with above ground costs (i.e., those related to external stakeholders as opposed to mining operations) increasingly influencing profitability [See Exhibits 4-5].

Uzbekistan

Newmont was among the first foreign investors in newly independent Uzbekistan in 1992. Its initial plan there entailed processing of 240 million tons of low-grade ore waste to generate 4.8 million ounces of gold over 17 years. In 1993, the Muruntau mine accounted for 17.4% of Newmont’s proven and probable reserves and in 1996 the mine accounted for 11.1% of Newmont’s production. Production peaked at just under 500,000 ounces per year in 2000 and then began to decline. Employment ranged from a peak of 1,366 during construction to 800, on average, during operations.

To build goodwill at Muruntau, Newmont had contributed books and internet access to local schools and had helped to build a public library. It also gave $500,000 to a national sports fund and had endowed scholarships in the national business school. On the environmental side, it tried to mitigate the dust and wastewater created by its mine, but those efforts didn’t stem community complaints.

In 2006, a disagreement broke out between the company and the Uzbek government that culminated in the seizure of Newmont’s assets. Theories surrounding the sudden escalation of the dispute included the chill in Uzbek-US relations after Uzbek troops killed dozens of peaceful
protestors in 2005 in city of Andijian. At that time, the Uzbek government closed a US airbase in the country and took to courting Russia and China who, unlike the United States, never called for an investigation of the massacre. Newmont was forced to write off the $101 million in book value of the Muruntau assets. It sued to recover the $450 million of lost profits and ended up settling for $80 million.3

Peru
While exploration at the Yanacocha mine had taken some time due to the initial unfavorability of political conditions and terrorism risks from the Shining Path guerillas that exceeded acceptable limits, once these issues were resolved and the exploration made substantive progress (1988-89), the development of the mine proceeded very quickly. Operations at Yanacocha began in 1993. That mine contributed almost 30% of the company’s proven and probable reserves from 1999-2001 and more than 41% of production in 2005. Then it got tangled up in a bribery scandal involving the then-head of Peru’s intelligence service, Vladimir Montesinos, and then-president, Alberto Fujimori. Montesinos and Fujimori were accused of improperly intervening in an ownership dispute between Yanacocha partners including Newmont, a Peruvian company named Buenaventura, and a French partner called BRGM. The Peruvian Supreme Court ruled in Newmont/Buenaventura’s favor in 2000.

As that controversy cleared, another erupted. A Newmont transportation contractor spill of 150 kilograms of mercury poisoned as many as 1,000 villagers, including about 400 children. Mercury, which is highly toxic, was generated as a byproduct of the gold production process in which cyanide was used to separate gold from waste rock. Newmont, working with the Peruvian Government and hoping to speedup mercury recovery efforts, offered to purchase the mercury from local people who had collected, thinking it had value, and hidden it in their homes. That worsened the problems, as collectors hoarded the liquid mercury in the hopes of securing a better price. Some villagers also believed, as local folklore taught, that quicksilver would metamorphose into gold. In reality, the storage of mercury in open containers in homes contributed to increased exposure to toxic fumes.

Conflict also sparked over the expansion of the mine to an area called Cerro Quilish. The site, considered sacred by some groups, served as a portion of the water supply for the town of Cajamarca. Newmont had secured the necessary regulatory approvals to proceed with exploration, but NGO opposition led to an occupation of the area that lasted several days. More than 1,000 people joined, and 11 of them were injured in clashes with police. Roadblocks persisted sporadically for weeks. Local residents then called a general strike that shut down banks, supermarkets and public transport. After a second strike, Newmont offered to stop exploration and remove the ounces from the company’s stated reserves as a show of good faith.

Newmont responded by redoubling its community outreach via the expansion of the Minera Yanacocha SME Linkages Program4 and the Asociacion Los Andes de Cajamarca (ALAC) Foundation with technical assistance and financial support provided by IFC. By the end of 2001,

4 http://www.hks.harvard.edu/m-rcbp/CSRI/publications/report_16_BUSINESS%20LINKAGESFINAL.pdf
Newmont had invested $15 million in community development initiatives, and external donors had added another $7.3 million.

Linkages were created to help to build a livelihood for the community beyond mining. Local artisans thus received training in product design, production, and marketing. A similar program for small businesses led to the creation 54 new jobs and $2 million in additional sales. Newmont also tried to remove red tape for fledging firms. It worked with the Peruvian government to simplify company registration, reducing the time from 100 to 3 days. This let workers move from the underground economy into formal businesses, which could more easily access money for expansion. In total, Newmont estimated that Linkages assisted 250 businesses and contributed to $10 million in increased sales for these firms.

Newmont created the ALAC Foundation in March 2004, with the goal of continuing to boost local development. It built upon Linkages, placing more emphasis on business ownership and entrepreneurship. The $1.5 million funding pool offered grants to projects and assisted in recruiting Peruvian and international partners to provide additional backing. ALAC-supported projects helped farmers to increase their crop and dairy yields and to breed guinea pigs. Other ALAC projects taught more than 11,500 students basic business and jewelry-design skills and connected local businesses to regional and national supply chains. ALAC also helped more than 5,000 families access money for home improvements. The program won numerous awards, including the “Business Creativity Award” from the Peruvian University of Applied Sciences.

Indonesia
Newmont’s third major international expansion was in Indonesia where the Batu Hijau and Buyat Bay mines together peaked at nearly 19% of proven and probable reserves in 1997 and 13% of production in 2001. Assessments of the Batu Hijau area suggested that it could yield 15 million ounces of gold and 11 billion pounds of copper. Construction began in 1997, and production, in 2000. As a result of the mine, the nearby village swelled from 500 inhabitants to about 5,000.

Early on, the Indonesian government delayed permitting, seeking a larger equity share for national companies and more jobs for local workers but Newmont resisted this pressure. Then in 2002, local NGOs began publicizing the plight of a local woman who they claimed had been forced off her land without compensation and whose family had lost its ability to farm and fish. An investigation revealed the claims were false: the woman had left the village six years before development began. The mine survived these challenges and became profitable, though local management faced continued pressure to shift equity ownership to the government or national companies.

In hopes of improving local relations, Newmont created a community foundation, Yayasan Olat Perigi, which funded worker training, subsidized loans for local firms, and donated schools and furniture. It even gave out sacrificial buffaloes and goats for Islamic holidays. Still, some local

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people complained that about the foundation’s lack of transparency and its lack of coordination with local organizations.

Ore deposits at another Indonesia mine, Minhasa Raya (or Buyat Bay) were far smaller, at 2.1 million ounces, than at Batu Hijau, but conflict during the closure phase of the mine was fierce because locals didn’t want the mine to close. Newmont designed the Minhasa Raya mine to meet U.S. environmental standards. The company, for example, utilized sub-marine tailing disposal methods, instead of on land, where earthquakes or rains could cause greater environmental damage. Still, two Indonesian NGOs—WALHI and Jatam—accused Newmont of polluting the bay with cyanide, mercury, lead, arsenic and other heavy metals. They also challenged the atmospheric release of 33 tons of mercury. In 2004, WAHLI filmed a documentary, highlighting health ailments in the area, and a *New York Times* front-page story blamed Newmont for illnesses, local poverty and fish kills.

Several Newmont executives were arrested, and the Indonesia government sued. Independent investigations found the NGOs’ claims baseless, and Newmont’s personnel were acquitted. Nonetheless, the company agreed to a $30 million Goodwill Agreement to undertake long-term post closure monitoring program and fund some local community programs. Throughout the life of the mine the company supported the fishing industry through the construction of a new port, with refrigerated storage, and worked with local NGOs/science organizations to establish artificial reefs in areas which were being damaged due to local overfishing. In total, it is estimated that Newmont spent about $110 million in community development, post closure monitoring and scientific investigations, legal fees and other costs to manage the false accusations, which exceeded the operation’s lifetime contribution to corporate earnings.6

Beyond the Mines
In the aftermath of the controversies in Uzbekistan, Peru and Indonesia, 92 percent of Newmont’s shareholders supported a recommendation by the company Board of Directors to review the company’s policies and practices relating to engagement with local communities. The resolution expressed concern that “Newmont projects in developing countries have been undermined by community protests” and noted a “pattern of community resistance to the company’s operations.” Experts were brought in to interview employees and external stakeholders and examine policies and practices. They concluded that Newmont could improve its ability to resolve conflicts and address grievances and to review and update companywide standards and programs to guide its sustainability campaigns. The review culminated with a report titled Community Relationships Review (CRR), compiled by a law firm named Foley Hoag, which specialized in international business. The CRR Report was organized around the following eight lessons.

“Lesson 1: Every Newmont operating site should have a comprehensive and integrated strategic management plan for community relations that identifies the objectives and responsibilities of each functional department and takes into account relevant site-specific factors.

6 Morris, Jack H. 2010 *Going For Gold: This History of Newmont Mining Corporation* Tuscaloosa: University of Alabama Press p. 323.
“Lesson 2: Regular and comprehensive social impact assessments and risk assessments must inform cross-functional strategic planning at Newmont’s operating sites.

“Lesson 3: Regional and local managers in all functional areas must be accountable for implementation of the company’s strategic objectives regarding community relationship building.

“Lesson 4: Newmont’s operating sites must assess stakeholder concerns and engage with external stakeholders in order to understand and effectively respond to their perceptions and concerns.

“Lesson 5: Newmont’s engagements with the community must reflect the company’s values and responsibilities and clearly convey what can be expected from the company in its role as a community stakeholder.

“Lesson 6: Newmont’s operating sites must engage in conflict identification and manage community concerns before open conflict arises, while also respecting the rights of stakeholders to protest against the mine.

“Lesson 7: Newmont must ensure that its operating sites have accessible and responsive grievance mechanisms.

“Lesson 8: Management of the environmental impact of mining on water and other natural resources is directly linked to the management of community relations; Newmont must assess and respond to stakeholder concerns regarding both real and perceived environmental impacts of its operations.”

The CRR Report concluded: “If Newmont is to continue to grow as a company, maintain its production pipeline, and succeed in current and future business operations around the world, it must manage its community relationships more effectively. Newmont must act quickly to ensure that stakeholder engagement and community relationship-building are integral components of Newmont’s business operations.”

In the past, the CRR Report found, sustainability managers at each Newmont mine had had engagement plans, but the plans had varied in level of sophistication. In theory, each manager worked with local colleagues in such departments as operations and finance to ensure that her plan was carried out. But there was little evidence that the engagement efforts were coordinated at the corporate level via a broader strategic plan. Integration of sustainability into financial and operational decision-making was hampered because, according to the report:

The social side is still seen as “voodoo,” said one [interviewee], adding that those in more “traditional” groups “still don’t get social responsibility.” … Indeed, despite existing internal evaluation systems, there was significant lack of clarity among those interviewed regarding what social responsibility is and how it should be evaluated. Concern was expressed regarding regional managers who still did not understand the importance of
social responsibility even though these managers are often transferred from location to location, and face similar issues (e.g., indigenous rights) in their new postings. (p. 66)

In practice, sustainability managers were often isolated, with little influence within the company. They had no authority over workers and contractors with whom community members interacted. This structure reinforced a perception among employees that the company was, at heart, more committed to ore production than to the creation of constructive ties with the communities in which it operated.

The CRR Report also found that Newmont hadn’t conducted the regular assessments needed to tailor its engagement plans to local circumstances. The company also lacked metrics to gauge the effectiveness of its engagement work. Given that combination, local sustainability managers and site operations teams couldn’t be held accountable: the company couldn’t say specifically what they should be doing, nor could it measure what they’d achieved.

The insights gained from the CRR Report were synthesized into a multi-year plan. Concrete changes that resulted included a restatement of the corporate values and mission in January 2009 (see Appendix 1) and the release of an expanded sustainability report format. These documents and, more importantly, the organizational commitment that accompanied them, were widely recognized as industry standards (see Appendix 2). Three areas, in particular, were targeted for improvement: communications within Newmont and between the firm and stakeholders, stakeholder engagement, and the integration of community relations into the rest of the business.

The final goal required the creation of performance metrics for sustainability and the evaluation of engagement activities against these metrics.

**The Economic, Cultural, Political and Legal Context**

Newmont aimed to apply lessons from Uzbekistan, Peru, and Indonesia in Ghana. The company entered Ghana in 2002 as part of its acquisition of Normandy Mining Ltd. Ghana had risen from 0.9% to 3.2% of world production over the period 1990 to 2010 [See Exhibit 1] and thus played an important role in Newmont’s long-term plan to expand reserves. In addition to the Ahafo mine, Newmont was also developing one at Aykem, midway between Ahafo and Accra, Ghana’s capital and largest city. That mine was initially expected to be in construction in 2005 and in operation by 2007. Company executives hoped that Ghana would be a springboard to the development of projects in other African countries including Guinea, Cote d’Ivoire, Burkina Faso, Mali, and the Democratic Republic of Congo.

Ghana was among the most politically stable countries in Africa. It had a history of peaceful, democratic governance. It was the first sub-Saharan country to achieve independence from colonial rule. It began as a parliamentary democracy, though soon saw a series of military and civilian autocratic governments. Democracy returned in 1992.

Mining had a long history in the country, which, in colonial times, had been known as the Gold Coast. Laws and regulations governing mines were well established. The country was, however, still quite poor. According to the World Bank, 28.6% of Ghanaians lived on less than $1.25 a day.
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in 2006. Per capita income has, however, grown from $1067 in Purchasing Power Parity adjusted 2005 US $ to $1475 over the past ten years [See Exhibit 6 for additional Macroeconomic data].

The Ahafo mine was located in the Asutifi and Tano North Districts of the Brong Ahafo Region, lying along the Sefwi-Bibiani Gold Belt. The site was 300 km northwest of Accra, and the closest major regional center was Sunyani, about 42 km away [See Exhibit 7]. Despite the prevalence of mining in Ghana—gold accounted for 20% of all tax revenues nationally and contributed 6.4% to GDP—the area around Ahafo had little history of formal mining. Thus Newmont’s operation could have been considered a greenfield project. The mining lease area stretched over 500 square kilometers, and the Ahafo South mine required the physical and economic relocation of an estimated 10,000 residents in 50 hamlets and villages. Mass resettlement and loss of access to land were the central local concern. The project was divided into south and north phases. The former had started operations in 2006, and the latter was still being explored in 2011.

The south phase consisted of four open pits, which, after capital investments of $882 million, were expected to yield a total of 6.8 million ounces of gold over 15 years of operation at total cash costs of $200 per ounce. Besides the pits, the site contained areas for a processing plant, waste-rock disposal, water and tailings storage, dams for controlling storm water and sediments, and supplementary facilities. The north phase was expected to contain as many as seven additional mining areas and bring total output to 10 million ounces. Its development would involve the resettlement of potentially another 10,000 people [See Exhibit 8].

In 2012, Newmont-Ahafo employed 1,579 workers and 3,056 contractors at an average wage of $5 per hour which substantially exceeded the approximately 60 cent per hour average wage in the country and the approximately 34 cent per hour minimum wage. One recent study, in fact, highlighted that the average employee at Newmont’s operations contributed twenty times the average value added of an employee in the country as whole. During construction, employment levels approached 5,000 people. In 2010, the company sourced $280 million of goods and services in Ghana. It contributed 20% of total tax collections, 10% of the nation’s total exports, 4.5% of its foreign direct investment, and 1.3% of GDP. Counting direct, indirect and induced employment, it accounted for 48,000 jobs.

Agriculture was responsible for about 70% of the economic output of the mine’s home region. Poverty levels in the immediate areas of Asutifi (60%) and Tano (48%) regions were high compared with the rest of Brong Ahafo (36%) and the country. Illiteracy was also high—about 50% in Asutifi and 67% in Tano. Maternal mortality in the region was 0.2% among the highest in the country.

Brong Ahafo was one of 10 regional government bodies within Ghana. A regional coordinating council connected various assemblies, agencies and chiefs within the region to the national government. Brong Ahafo itself contained 19 administrative districts—Ahafo South was in the Asutifi district. The highest local authority was the Asutifi district assembly. Seventy percent of

7 Kapstein, Ethan and Rene Kim 2011 The Socio-Economic Impact of Newmont Ghana Gold Limited Stratcom Africa.
its members were elected, and the rest were appointed. The district chief executive, appointed by
Ghana’s president with two-thirds approval of the district assembly, was head of the assembly
and also of its executive committee.

Traditional tribal government endured in the region, particularly in land allocation and
management. Ahafo lay within the Ashanti Kingdom, centered in Kumasi. Paramount chiefs,
recognized by the Ashanti king, administered the autonomous chiefs within their “stool.” The
paramount chiefs also controlled community chiefs. Chiefdoms—comprised of the chief, queen
mother, sub chiefs, family/clan heads, and a linguist—approved decisions regarding
development, civil law, domestic disagreements, and traditional tribal law.

In theory, all mineral rights belonged to the central government, and local people were
compensated only for the value of crops/structures to be removed when a mine was built, and not
for the value of the land (as per Ghanaian law). In reality, compensation decisions were knottier,
involving the national government, chiefs, and the community. State land, mostly acquired in the
State Lands Act of 1962 (Act 125), was under the jurisdiction of the state, and the boundaries of
this land had been surveyed, mapped, and registered. Vested land was owned by a stool, under
the custody of a chief but managed by the state. That is, the state had the right to sell or lease it
and could collect rent.

Customary ownership norms tended to trump laws and often led to tension between legislators
and traditional authorities. Customary ownership was not documented but was based on social
structures and traditional practices. A custodian and council of elders would oversee and allocate
the land, which was often passed down from generation to generation. (Agreements technically
lasted from one to five years). Land-use rights depended on agreements made between property
owners and sharecroppers or caretakers. There were often disagreements among individuals,
families, and neighboring stools regarding ownership rights, sale price and use.

Another source of discord was the distribution of the mining royalties. Ten percent of the
royalties paid to the national government flowed back to the locality and were distributed among
the district administration (5.5%), chiefs and elders (3.0%), and the administrators of stool lands
(1.5%). Debates about distribution arose because of a lack of transparency and a sense that
politicians in district capitals, not people in the rural communities most affected by mining,
captured too much of the gains. More broadly, many Ghanaians believed that mining companies
manipulated the system to their advantage, currying favor with politicians, chiefs, and the police
and mostly ignoring the needs of rural villagers.

STAKEHOLDER ENGAGEMENT AND SUSTAINABILITY INITIATIVES

Stakeholder Engagement
Newmont sought to learn from the controversies in Peru, Indonesia, and Uzbekistan and
implement a better community-engagement plan at Ahafo. A field visit by Collaborative
Learning Project (CDA), a non-profit organization specializing in stakeholder engagement noted
a wide array of transparency mechanisms, summarized in the excerpt from their report on the
next page.
Still, Newmont Ahafo faced ample challenges. Local folk alleged, for example, that police had used excessive force in responding to a protest in 2005 and had wrongly arrested NGO representatives in 2006. The mine had also had an accidental drowning in 2005 and an accidental waste discharge in 2006. Some villagers claimed that construction had contributed to a rise in malaria. Other flashpoints were the allocation of jobs and alleged favoritism showed to traditional chiefs and their allies.

### Transparency Mechanisms

- Newmont has an open door policy. People on site as well as in Accra follow a policy to be available to “anybody that wants to speak with us.”
- Bulletin boards in each village showing vacancies, announcements, and minutes of meetings.
- The use of public meetings (‘town crier meetings’), plays, or puppet shows to convey messages.
- Elected committee representation from all hamlets and villages in the MTA that meet with Newmont on an ongoing basis (RNC in Ahafo and the Crop Compensation Committee and the Consultative Community Committee in Akyem).
- Important meetings are video and audio taped and that are accessible to local communities upon request.
- Quarterly meetings with 1) traditional leaders 2) assemblymen 3) youth association chairmen and 4) chief farmers in Ahafo.
- Bi-weekly presentations to stakeholder groups such as youth, local political establishment, regional political establishment, and traditional authorities in Akyem.
- In Ahafo summaries of four public disclosure documents have been translated into a local language (Twi) and publicly available in several towns. Public Disclosure Officers are tasked to answer questions from the public and explain the following documents:
  - Resettlement Action Plan.
  - Environmental Social Impact Assessment.
  - Public Consultation and Disclosure Plan.
  - Independent Assessment of Resettlement Implementation.
- Presentations at local high schools and invitations to high schools for field trips.
- Periodic presentations to the media (public disclosure documents, cyanide code).
- Basic training courses on negotiation provided by a university.
- The provision of courses for local opinion leaders and elders on leadership training, conflict resolution, and other topics by OICI.
- Akyem has plans to open an information office.
- Organized visits of representatives to other mining sites.

### Observations that signal proximity in modest but important ways:

- Nametags of employees show a first name in bold letters rather than have different labels that signal the type of contract or a last name only.
- Fencing around the compounds in Kenyase and New Abirem has no barbed wire and security perimeter, which reinforces a visible sense of proximity.
- CR people say they give out business cards to local stakeholders with their details “so that I’m accessible.”
Resettlement

Newmont’s first major challenge was the resettlement of people who lived and or worked the land now occupied by the mine site. The company had to not only compensate and resettle them but also facilitate access to new land and replacement of their livelihoods, even though, under Ghanaian law, Newmont did not have to buy or provide compensation for land unless that land was deeded.

Newmont initially worked with planningAlliance, a Canadian urban planning and design firm with expertise in providing social assessment and management services to natural resource companies in the area of resettlement, to analyze the number of people and amount of land affected. They identified 1,701 households, comprised of 9,575 people. These households owned 1,426 structures or sets of structures and eight businesses and cultivated 7,193 fields (2,426 hectares). Four schools, four sheds belonging to the Cocoa Marketing Board, two roads, and a system of tracks and paths would also be displaced.

Newmont built two new villages—one outside of Kenyase 2, called Ola Resettlement Village, where 312 households, comprised of 2,028 people, moved, and another outside Ntotoroso, called Ntotoroso Resettlement Village, where 87 households, comprised of 566 people, moved. Both new villages saw rapid population growth on account of the new economic opportunities in the area. Local authorities soon became concerned over the strain on local resources.

Newmont’s external affairs team worked daily to ensure communication between the company and the communities. A special committee assisted with discussions and negotiations regarding resettlement entitlements. It consisted of representatives from Newmont Ghana Gold Limited; the regional, district, and traditional governments; NGOs; and the affected people. The committee helped to determine resettlement entitlements and also assisted with individual negotiations, thus earning the respect and trust of villagers. The resettlement committee was eventually replaced by a community liaison committee, which served as a link between one of Newmont’s key agricultural programs and the new villages.

The resettlement committee agreed that people would receive compensation if they’d had a legitimate interest (not just ownership) in immoveable assets such as crops or buildings. In general, compensation consisted of a replacement residence and land plot, with the new home being equal in total area and kitchen size to the original. Residents could choose the colors of their new homes as well as its location, and a group of neighbors could move together to retain their neighborhood. People also could opt for a lump sum of cash, instead of a new home, but only if they offered proof that they had an alternative residence outside of the mine area. About 424 households opted for relocation rather than resettlement. Public structures, such as the schools, were built in the resettlement villages. Overall, Newmont spent about $51 million on land access (including compensation, resettlement, livelihood restoration and vulnerable people management).

In surveys, about 97% of the people affected by its mine said agriculture was central to their livelihood. Resettlement meant that farmers would lose land that they’d cultivated and improved for years, even generations. It also could drive up land prices in surrounding areas and curtail
Calculating the Net Present Value of Sustainability Initiatives (A)  Case-##

agricultural production. As a result, Newmont developed and implemented the Agricultural Improvement and Land Access Program (AILAP) for about 3,000 people. It created a series of programs to try and incentivize local farmers to re-establish new farms and to help farmers boost production, diversify their crops, and enhance their access to markets. The objectives of the programs were to increase yields and assist farmers in diversifying their businesses by encouraging them to process some of their own crops.

Experiences with Ahafo South led to a shift in focus in subsequent land acquisitions, with greater emphasis placed on negotiation and the priorities of residents. Newmont developed two programs—one for livelihood enhancement/empowerment and another for vulnerable peoples—intended to help affected communities. These programs were designed with significant local input and with the help of development NGOs and government agencies. They led to a perception that Newmont was a good neighbor and a fair and honest negotiator. As a result, land acquisition for the first expansion area to be developed beyond Ahafo South (i.e., Amoma) was completed with an average payment of $2.87 per square foot less than the average in Ahafo South and $230,000 less in compensation for land and crops. More importantly, the process took four fewer months, allowing faster development of the mine. That translated to a $700,000 improvement in the net present value of the mine.

Community Health
Malaria imposes high costs on multinationals in sub-Saharan Africa; the World Health Organization estimates that 90 percent of the world’s malaria deaths occur in Africa.\(^8\) A recent report found that absenteeism and medical care linked to the disease had added $2.7 million to cost of the construction of the Mozal aluminum smelter in Mozambique and $4 million to the cost of the construction of the Chad-Cameron oil pipeline by ExxonMobil.\(^9\)

In Ghana, the average monthly incidence of malaria infection was 8% in 2006. The disease, which is spread by mosquito bites, caused 32.9% of all hospital admissions and 13.4% of all deaths in the country, leading both categories by substantial margins. In 2006, workers at Newmont Ahafo endured 3,195 cases of malaria, which led, on average, to three days of absence from work and $30 worth of treatment. The company believed that the disease also hurt worker morale and led to a reluctance by the highest quality and most productive potential workers to relocate to Ahafo. Newmont also provided care for workers’ family members, and this expense was at least as large as the one for treating the workers themselves.

Faced with these costs, Newmont stepped up malaria prevention at its mine and in the villages, launching an $850,000 two year control program. It distributed bed nets, instructed people on their use, and supported community monitoring of bed-net usage. It also sprayed insecticide and improved drainage to eliminate insect breeding pools. These measures reduced malaria incidence in the community to near zero. Newmont created a similar program to fight HIV—the second

\(^8\) See http://www.who.int/mediacentre/factsheets/fs094/en/

\(^9\) Fuseini, Ebsworth, Knight, Caiger, Burns & Bangs, 20__, pp. ??.
leading cause of death in Ghana, at 7.4%. That campaign combined condom distribution with education, counseling, and monitoring at an expense of $105,000 per year.\(^\text{10}\)

In collaboration with the Ghana Health Service and local medical services, Newmont improved healthcare more generally by partnering with the Ghana Health Service to renovate the Kenyasi Health Center, building residences for nurses, and constructing three clinics in surrounding villages.\(^\text{11}\) It also equipped 60 healthcare volunteers, including supplying them with bicycles, and donated medical equipment to regional hospitals.

In 2010, the Global Business Coalition, a coalition of 200 corporate groups, governments and United Nations agencies such as the World Health Organization, voted Newmont Ghana’s HIV/AIDS and malaria programs as the best in the workplace HIV/AIDS and malaria category.\(^\text{12}\) Thanks to the success of the programs, the company was considering similar ones for diabetes, hypertension—the fifth highest cause of hospital admission, at 3.1%, and seventh highest cause of death, at 4.1%—tuberculosis, and child wellness. It was also examining the broadening of community-health monitoring and the training of community-health and first-aid volunteers. The additional cost of these programs was estimated to be $130,000 per year. These efforts would not directly impact employee health costs, but could further enhance Newmont’s local reputation.

**Water and Sanitation**

Diarrheal diseases were the fourth largest source of hospital admissions, at 4.2%, and tenth largest cause of death, at 2.3%, in Ghana. That made improvements to water and sanitation a national priority. By law, Newmont had to address the water and sanitation needs in its resettlement villages. Compared with other communities in the district, Newmont’s water-and-sanitation systems led to a 30% to 40% reduction in the incidence of diarrhea and the avoidance of a total of $28,000 in medical costs per year for treatment of the 40 workers who no longer contracted diarrheal diseases. Better sanitation also contributed to local education by keeping children in school, which reduced absenteeism and, more importantly, further boosted Newmont’s reputation. Given the success of the program in resettlement villages, the company was debating an extension of the program to all communities within the district in partnership with the local government and communities. This would increase its fixed costs for 2010 from $421,000 to $686,000. It was also debating providing maintenance, participatory monitoring and capacity building on an ongoing basis which would cost $130,000 per year from 2010 to 2020. It would provide negligible direct benefits to Newmont but could cement the reputational gains.

**Employment and Training**

Newmont began employee training before construction at Ahafo commenced. Workers received two weeks of training on basic employment skills and had access to over 800 distinct training course modules, which were also shared with other Ghanaian vocational schools free of charge.

\(^{10}\) Read about Newmont’s HIV/AIDS and Malaria policies at <http://www.newmont.com/sites/default/files/all_appendix_082905.pdf>.  
Contractors had to provide their own training and, for unskilled jobs, had to hire from the local labor pool.

Starting in 2011, Newmont sponsored 5,000 junior-high graduates, who otherwise wouldn’t have furthered their education, to complete a one-year government technical and vocational education training (TVET) program. Newmont’s own training program (Apprenticeship Program) lasted four years. As of 2012, it had enrolled 69 students, with a goal of reaching 91, for training in areas such as plant maintenance, electrical work, and auto repair. Newmont spent about $25,000 per student over four years and provided each student with a stipend, school materials, food, transportation, and safety equipment. Competency levels on an examination rose from 35% to 85% over the course of the program.

The company aimed to hire 90% of its graduates rather than having to recruit more expensive workers from elsewhere in Ghana and from outside of the country. It estimated that turnover among these workers would be 50% lower than among outsiders, whose average tenure was three years. Lower turnover would mean lower hiring costs, which averaged 25% of first-year salary. On top of this, Newmont forecast that accident rates among its trainees would be 50% lower. This would further cut expenses, reducing unscheduled downtime and equipment damage, which together cost about $360,000 per year. Newmont also estimated that productivity would be twice as high among its trainees.

Newmont also replicated its Peru Linkages program experience at Ahafo. By doing this, it sought to foster the growth of local suppliers and assist in the development of new and existing non-mining businesses. It offered training in recordkeeping, management, and finance, among other topics. Partly as a result, local procurement increased from $1.7 million in 2006 to $14 million in 2010, with 373 local businesses receiving contracts. Training provided through Linkages was associated with revenue growth for local businesses of 409%, cost decreases of 11.5%, and average monthly income boosts of 224%. The program also led to a 40% increase in the percentage of local firms paying taxes.

Local sourcing didn’t save Newmont money in the short-term. In fact, developing a more robust local business base from which to draw from requires significant administrative oversight and capacity building. The company believed, however, that the short term costs associated with developing a local supplier base as compared to sourcing from non-local suppliers would have longer term rewards which could offset the short term costs which some estimates indicated were 15% to 20% higher on average. Newmont believed that buying locally enhanced its reputation and increased the community’s loyalty to the company. It could also help Newmont comply with a proposed Ghanaian law mandating 10% local sourcing. The IFC supported the program with a $1.5 million contribution and technical assistance, and the World Business Council on Sustainable Development and the Chartered Institute of Purchasing and Supply recognized it as a best practice.

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Agricultural Programs
The Ahafo Agricultural Growth Initiative (AAGI) seeks to create sustainable economic growth in Ahafo by strengthening agricultural production, improving management capacity among several thousand local farmers and increasing linkages between these farmers and the regional and national supply chain. After completing a needs assessment, the program sponsored training, helped the farmers organize and then facilitated linkages to financial institutions including both public and private institutions, market intermediaries and final customers. The linkage to the national Export Development and Investment Fund has yielded support for investment in a storage and processing center as well as providing funding for seeds and other inputs,

Newmont Ahafo Development Foundation (NADeF)
In 2008, Newmont established NADeF, a community development foundation. Newmont annually contributed $1 per ounce of gold produced and 1% of Ahafo’s net profit to the foundation, and the foundation had to reserve a portion of these contributions for its endowment fund (10% in the first five years increasing by 5% each five years to a maximum of 25%). This translated into $2.1m of contributions reflecting profits and production from the start of operations to the inception of the foundation, $1.3m of contributions for 2009, $1.7m in 2010, and $4.9m in 2011. Modeled on the ALAC experience in Peru, NADeF made grants to local projects that were likely to be sustainable and that reflected the interests of the community. It has a stated Mission of empowering communities through grants, knowledge-sharing, partnership and capacity building to achieve sustainable development. Community members and Newmont representatives jointly govern NADeF’s and select projects for funding. The Foundation seeks to involve contractors and other members of the value chain in its operations both through voluntary donations and in-kind contributions. Each community also forms a Sustainable Development Committee with membership from youth groups, womens’ groups, unit committees, traditional authorities and another member of the community not part of the traditional authority.

Funds are explicitly allocated among member communities with a complex weighting system that allocates more funds to communities who are more severely impacted by the mine, who demonstrate a greater commitment to the Foundation, who have a larger population, and who have more land area in the mining lease. Within each community the Foundation seeks to allocate its funds so that 24% go to Human Resource Development (e.g., scholarships and pre-job training), 23% to infrastructure (e.g., water, electricity, roads, clinics/health centres, schools, toilet facilities and incinerators), 18% to Social Amenities (e.g., community centres, police posts and community libraries), 17% to economic empowerment (e.g., employment, entrepreneurship, credit, capacity building), 12% to natural resource protection and 6% to Cultural Heritage and Sports (e.g., festivals, palaces, cross-cultural activities and sports). To date over two thousand students have received scholarships and thirty distinct projects have been completed including the construction of teacher’s quarters to house teachers who had previously commuted up to 50km, new classroom blocks, community libraries, mechanized boreholes, electrification, public toilets and medical clinics. Newmont managers believed the fund to be among their most important legacies.
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**Reputational Capital**

As the Regional Vice President ESR and the consultants from IFC and Deloitte began their work, they had to find a way to capture not only the direct costs and benefits of the Ahafo mine but also the indirect ones. Recording direct costs took time but required only straightforward reviews of company books and Ghanaian economic data. Newmont knew the wages of its workers, the costs of the land and buildings in the resettlement villages, and amounts that it had invested in healthcare, education and the like. The team could calculate the economic benefit of wages paid, structures built, and even diseases prevented among employees.

The indirect benefits and costs of Newmont’s sustainability programs—the intangibles grouped under rubric of “reputational capital”—were more elusive. Sometimes, as with the lower resettlement costs at Amoma, they were easy to capture. Other times, they were devilishly difficult to pin down. How, for example, did you capture all of the dollar benefit of strikes foregone, protests averted, and bad press avoided? Often, no single event or benchmark existed for making comparisons and estimates.

Without these benchmarks, the Team and the consultants relied instead on a Newmont risk-management checklist to attempt to quantify the expected indirect benefits. Newmont had made it a practice to track seven drivers of stakeholder perceptions:

- Migration to the mine area and migrants’ impact on local healthcare, infrastructure, and social services;
- Media coverage originating from local community or NGO complaint;
- Community expectations for jobs;
- Anti-mining groups that influenced stakeholders to deny Newmont opportunities for community engagement or led to delays in exploration access;
- Water quality or water supply related impacts attributed to the mine (real or perceived);
- Compliance with Ghana’s water-company standards;
- Legal risks such as revocation of licenses due to compliance or monetary fines related to compliance.

Team members evaluated each of the sustainability programs based on its effect on these drivers. Their analysis suggested that NADef had had the greatest impact on the widest array of risks, followed by the water-and-sanitation and community health programs. Training of local employees and Linkages also scored well.

Next, discussions among the consultants and Newmont staffers led to the following potential cost savings:

- Fewer roadblocks and production interruptions. Before the engagement campaign, interruptions occurred about every other year, lasted on average one week, and cost about $3 million. No incidents had occurred since 2003.
- Fewer complaints. Before engagement, local people filed an average of 12 serious complaints a year to Newmont, which led to investigative and follow-up costs of about $50,000 for each complaint.
• Fewer protests about exploration. Before engagement, protests would suspend exploration roughly every other year at a cost of approximately $5 million per suspension.
• Fewer fines and legal judgments. In the early phase of operations, legal problems arose about every three years at a cost of $3 million for each case.
• Fewer protests about water availability and quality. Water complaints had previously occurred every other year and brought about $200,000 of remediation costs each time.

By plugging this data into the IFC-Deloitte tool, the Team and the consultants could develop probabilistic scenarios. They could vary the size or quality of the many sustainability programs and then assess how those changes might affect the incidence or magnitude of risks like the ones listed above. This let them estimate the indirect benefits of sustainability. These estimates could then be added to the direct benefits and compared against costs to identify the net present value of sustainability at Ahafo.
CONCLUSION

As the Regional VP ESR prepared for his meeting, he was coming to appreciate the usefulness and limitations of the IFC FVTool methodology. He knew that the net present value figure that he and the consultants arrived at would be an estimate, not a definitive figure that would resolve all debate over the worth of Newmont’s sustainability programs. But he also understood that all NPV calculations are estimates, entailing assumptions about what might happen. Even the discount rate, a critical component of any NPV calculation, was, at some level, a guess.

Now, he at least knew that he could give his boss a number and that he could compare that figure with the ones coming out of other departments. But he wanted to go further. The process of estimating the net present value of sustainability was revealing gaps in the Newmont’s engagement processes. The Regional VP ESR was coming to realize that, while Newmont had employed, even developed, some of best practices for its industry, much work remained.

DISCUSSION QUESTIONS

Is it reasonable to demand that a Sustainability Team make the business case for their sustainability budget? Why or why not?

1. Should efforts at improving sustainability be backed by a parallel set of principles and objectives or an integrated one or both? Why?
2. Make a recommendation as to whether the three following programs should be expanded as described in the case:
   a. Water and Sanitation programs
   b. Linkages program
   c. Newmont Ahafo Development Foundation (NADeF)
3. What additional information would you have liked to have in order to give you more confidence in our decision?
4. What are the critical process considerations in designing the initiative to assess the net present value of the sustainability initiatives?
5. What should be included in the Regional VP ESR’s proposal (i.e., What will be required to realize the full potential of this pilot initiative for Newmont)?
6. How easy would it be for your (current or past) employer to meet implement such a process? Why?
Exhibit 1: World Gold Production Share by Country, 1980-2010
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Exhibit 2: Newmont Proven and Probable Reserve Share by Country, 1980-2010

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Exhibit 3: Newmont Production Share by Country, 1980-2010
Exhibit 4: Real Price of Gold and Newmont’s Cost of Production, 1980-2012
Calculating the Net Present Value of Sustainability Initiatives (A) Case-##

Exhibit 5: Newmont Financial Data [in millions of American dollars, except per share]

### Income Statement

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**Balance Sheet**

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Calculating the Net Present Value of Sustainability Initiatives (A) Case-##

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Cash Flows

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<td>Stock-based compensation and other non-cash benefits</td>
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<td>Reclamation and remediation</td>
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<td>Loss (income) from discontinued operation</td>
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<td>28</td>
<td>16</td>
<td>(24)</td>
<td>923</td>
<td>(228)</td>
<td>52</td>
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<td>Write-down of property, plant, and development</td>
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<td>Impairment and marketable securities</td>
<td>180</td>
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<td>7</td>
<td>102</td>
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<td>Gained on asset sales, net</td>
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<td>(227)</td>
<td>(642)</td>
<td>(752)</td>
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<td>Net cash provided from continuing operations</td>
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<td>Net cash provided from (used in) discontinued operations</td>
<td>(7)</td>
<td>(13)</td>
<td>33</td>
<td>(111)</td>
<td>138</td>
<td>96</td>
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<td>Net cash provided from operations</td>
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<td>Proceeds from sale of marketable securities</td>
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<td>Other</td>
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<td>Net cash used in investing activities</td>
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<td>(804)</td>
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<td>Proceeds from debt, net</td>
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Calculating the Net Present Value of Sustainability Initiatives (A) Case-##

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<td>Proceeds from stocks issuance, net</td>
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<td>Sale of noncontrolling interests</td>
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<td>Acquisition of noncontrolling interests</td>
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<td>Dividends paid to noncontrolling interests</td>
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<td>(462)</td>
<td>(394)</td>
<td>(389)</td>
<td>(270)</td>
<td>(264)</td>
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<td>Dividends paid to common stockholders</td>
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<td>(181)</td>
<td>(180)</td>
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<td>Other</td>
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<td>44</td>
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<td>--</td>
<td>--</td>
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<td>Net cash provided from (used in) financing activities</td>
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Source: Newmont Mining Corporation
## Exhibit 6: Ghanaian Macroeconomic Data

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<th>2007</th>
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<td>Life expectancy at birth, total (years)</td>
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<td>62</td>
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<td>63</td>
<td>64</td>
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<tr>
<td>GDP per capita, PPP (constant 2005 international $)</td>
<td>1067</td>
<td>1083</td>
<td>1105</td>
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<td>1169</td>
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<td>GDP per capita growth (annual %)</td>
<td>1.27</td>
<td>1.53</td>
<td>2.00</td>
<td>2.67</td>
<td>3.05</td>
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<td>Inflation, consumer prices (annual %)</td>
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<td>Unemployment, total (% of total labor force)</td>
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<td>--</td>
<td>4</td>
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<tr>
<td>Trade (% of GDP)</td>
<td>116</td>
<td>110</td>
<td>97</td>
<td>97</td>
<td>100</td>
<td>98</td>
<td>66</td>
<td>65</td>
<td>70</td>
<td>72</td>
<td>70</td>
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<td>Foreign direct investment, net inflows (% of GDP)</td>
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<td>1.68</td>
<td>0.96</td>
<td>1.79</td>
<td>1.57</td>
<td>1.35</td>
<td>3.12</td>
<td>3.47</td>
<td>4.28</td>
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<td>7.82</td>
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<td>Current account balance (% of GDP)</td>
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Exhibit 7: Map of Ahafo in Ghana

Source: Newmont Gold **Environmental and Social Impact Assessment, Summary – Ahafo South**, p. 3
Exhibit 8: Ahafo Mine Site Layout

Source: Newmont Gold *Environmental and Social Impact Assessment, Summary – Ahafo South*, p. 9
Appendix 1: Newmont Organizational Vision, Values and Mission as Restated in January 2009

**Vision:**

We will be the most valued and respected mining company through industry leading performance.

**Values:**

- Act with integrity, trust and respect
- Reward creativity, a determination to excel and a commitment to action
- Demonstrate leadership in safety, stewardship of the environment and social responsibility
- Develop our people in pursuit of excellence
- Insist on and demonstrate teamwork, as well as honest and transparent communication
- Promote positive change by encouraging innovation and applying agreed-upon practices

**Mission:**

We will build a sustainable mining business that delivers top quartile shareholder returns while leading in safety, environmental stewardship and social responsibility.
Appendix 2: Awards and Recognitions Received by Newmont for Sustainability

One Billion Trees Award
Award granted by Republic of Indonesia Forestry Ministry to a number of businesses, universities, and community organizations for their success and participation in forestry development and supporting the success of the 2011 One Billion Trees program. Our PTNNT affiliate at Batu Hijau was one of the three mining companies who received the award for mine reclamation category.

Aditama Award
Our Indonesian affiliate PT Newmont Nusa Tenggara (PTNNT) received the ADITAMA Award (Gold) and ADITAMA Trophy as the best mineral mine company in environmental management from the Republic of Indonesia's Ministry of Energy and Mineral Resources.

PROPER - Green Rating for Environmental Performance
Our Indonesian affiliate PT Newmont Nusa Tenggara (PTNNT) received the Green PROPER rating (Company Performance Rating Assessment Program) from the Ministry of Environment of the Republic of Indonesia for the 2010-2011 period. This is the sixth time the company has received a Green Rating since 2002, including five received consecutively.

Akoben Blue Rating for Environmental & Social Performance
In the second-annual Ghana EPA Akoben audit, Newmont Ghana Gold Limited (NGGL) achieved a rating of 'BLUE' indicating adequate compliance with Environmental and Social standards of the Ghana EPA.

2011 Excellence in Mine Reclamation Award
CATEGORY: Wild Life Habitat Enhancement for our work at the Mule Canyon Mine in Landor County, Nevada. Our restoration work has created a "wildlife oasis" in an area impacted by wildfires.

2011 Excellence in Mine Reclamation Award
CATEGORY: Overall Mine Reclamation recognizing the completion of all closure permit obligations at the Trinity Mine in Pershing County, Nevada. The Trinity Mine was acquired by Newmont in a 1997 merger with Santa Fe Gold.

Dow-Jones Sustainability Index - World.
We were named to the DJSI-World Index for the fifth consecutive year. The Dow Jones Sustainability Indexes track the financial performance of the leading sustainability-driven companies worldwide. The DJSI World Index captures the leading 10 percent in terms of sustainability out of the largest 2,500 companies worldwide.

Corporate Responsibility magazine recognized Newmont on its annual list of 100 Best Corporate Citizens.
The list is based on more than 360 data points of publicly available information in seven categories: environment, climate change, human rights, philanthropy, employee relations, financial performance and governance.
Newmont was among the leading North American companies honored in 2011 by The Climate Registry for achieving "Climate Registered" status. TCR is a rigorous program that requires participating companies to measure their carbon footprint, verify the findings with an independent third party and publicly report the results.

Newmont was featured in the Carbon Disclosure Project’s "Carbon Disclosure Leadership Index." The index highlights the constituent companies within the S&P 500 Index which have displayed the most professional approach to corporate governance in respect to climate change disclosure practices. Companies are scored on their climate change disclosure and high scores indicate good internal data management and understanding of climate change related issues affecting the company.

General Electric's Return on Environment Award
The award recognizes customers for significantly surpassing and improving environmental and industrial operational goals, while balancing industrial demands. GE’s Infrastructure, Water and Process Technologies division recognized our Carlin operation for its dust suppression activities to reduce environmental impacts. Newmont Nevada has been using GE's DusTreat product on haul roads since 2008. The product prevents dust particles from becoming airborne, and helps reduce water and fuel consumption. The award was granted to Newmont in February of 2011 to recognize environmental stewardship accomplishments for 2010.

Newmont is proud to report that we are ISO 14001 certified at all our operating sites
In 2007, we adopted ISO's Environmental Standard 14001 and Occupational Health and Safety Advisory Services (OHSAS) 18001 as standards for certification at our operations. In 2010 we reported that all Newmont operations were certified except for our newest operation at Boddington, Australia. By year-end 2011, Boddington received notice that they had achieved their certification status.

Micro Business Empowerment through Corporate Social Responsibility Award
The Indonesian Ministry of Cooperatives, Small and Medium Enterprises granted an award to PT Newmont Nusa Tenggara (NNT) for its participation and commitment to Micro Business Empowerment through Corporate Social Responsibility Programs.

Newmont Ghana Gold Limited judged most outstanding tax payer for 2011
Newmont Ghana Gold Limited has been judged the most outstanding corporate tax payer for the year 2011. This award was granted at the maiden Ghana Revenue Authority Awards Ceremony at the Banquet Hall, State House in Accra.

Newmont Nevada received 20 of 48 safety awards in the Nevada Mining Association's annual awards
In addition to receiving 13 individual employee safety awards, seven Newmont sites collected top-place site safety awards.
Calculating the Net Present Value of Sustainability Initiatives at Newmont’s Ahafo Mine in Ghana (B)

Before, we got a [budget] number [for sustainability initiatives] and decided what to do with the budget without any analytic framework, based on instinct. Now, we use the same [financial modeling] tools [that financial and mine operations functions use] when they decide what to mine.

- Anonymous member of Environment & Social Responsibility (ESR) Team, Newmont Ghana Gold Ltd.

One year later, the former Regional Vice President Environment and Social Responsibility (ESR), Newmont Ghana (now promoted to Group Executive Environmental and Social Responsibility) reflected on the lessons from the introduction of the FVTOOL at Ahafo. He counted the effort as a success—though, the process was still ongoing. He and his team members had answered the challenge posed by Newmont’s upper management: They’d used the tool to analyze four key sustainability programs and had shown that each would deliver positive expected net present value. Put differently, they had shown that the benefits of sustainability programs, so often dismissed as “soft” or intangible by critics, could be quantified. Just as important, their work had set off important organizational changes at Newmont Ghana Gold Ltd including the integration of sustainability into the strategic planning and budgeting cycle. These were exactly the outcomes that Newmont’s worldwide operations were looking for when they agreed to support the Newmont Ghana FVTool pilot project and the potential application of the tool in other operation. On site, the responsibility for the initiative had passed to the External Relations Manager, a native Ghanaian. The local leadership and ownership of the initiative would prove critical to its evolution.

Some of the NPV calculations at Ahafo had been straightforward.
- Investments in agricultural improvements, such as assistance to boost crop yields, had led to a perception that Newmont was a good neighbor. As a result, the company had been able to acquire land for its recent expansion for less than it had paid for land at the initial mine site, and it had paid $230,000 less in compensation for land and crops due to improved community negotiation mechanisms, community relations and reduced speculative building and cropping. What’s more, the land acquisition process took four fewer months, allowing faster development of the new site.

- Investments in water and sanitation services led to savings of USD $239,400 per year projected from 2013-2020 in water transportation costs due to the installation of boreholes in two neighboring communities. In comparison, the installation and maintenance costs for the boreholes was estimated at a onetime cost of USD $21,000. There is a nominal user fee charged to offset maintenance costs and ensure boreholes are sustainable in the long-term.

- The malaria control program generated estimated savings of USD $1.5 million from 2006-2010. The baseline malaria incidence in 2006, before the program, was approximately 8 cases per 100 employees each month. By the end of 2010, the overall monthly malaria incidence in the workforce had dropped to 1.7 per 100. This translated into approximately 201,888 productive working hours (25,236 days) retained over a 5-year period after introducing the intervention in 2007. Additionally, the company saved approximately $500,000 in medication costs. In total, this has saved the company an estimated $1.5 million USD for the four years of intervention. The total program cost from 2007-2010 was $850,000.

A partly anonymized version of the calculations for the four additional programs is summarized in Appendix 1.

Benefits notwithstanding, the implementation of the FVTOOL had been arduous. Estimates of the money and staff time required to collect data and do the analyses had been too optimistic. Some key staffers citing ‘initiative fatigue’ had claimed that they lacked the time or the capacity to help. No one data management system had all of the information necessary to do the calculations. Records from environment, health, safety, communities, governmental affairs, learning and development, security, and operations all had to be consulted. In some cases, discussion groups drew upon anecdotes of their own experiences at Ahafo and other Newmont mines to estimate the impact of improved relations with stakeholders. Some of the anecdotes were hard to quantify, and long debates ensued to arrive at best guesses. Other key documents, including stakeholder perception surveys and the complaints and grievances registry, were consulted to provide proxy information to substantiate claims of improved community relations. Still, participants reported satisfaction with the rigor of the approach. Even so, the sustainability staff had also concluded that future work with the FVTOOL would require a team that drew on the various skills sets of staffs of multiple departments, not just sustainability. Accounting and finance, for example, had to be included too, as they could provide key inputs such as cash flows, weighted average cost of capital, and inflation rate to measure the impact of sustainability initiatives on the business’ bottom line.

The process had started internally within the ESR team and initially met with a lot of skepticism from Finance and Risk Management due to the fact that benefits, either in the form of cash savings, productivity gains or risks averted, from sustainability programs could not be reported
on the company’s balance sheet. Only once those teams were brought in and the initiative was seen as a holistic effort did momentum really build. Achieving this momentum had, however, required a pause in the initiative in order to build capacity for communications between the finance and social responsibility teams. This effort, in hindsight, proved critical. A recommendation emerging from this process is to bring finance, accounting and risk management in from the onset and even to allow them to influence the design of the tool so as to integrate with the internal financial and risk management processes of the company. In addition, there must be a creative structure in place for staff to take on additional responsibilities outside the scope of their day to day activities.

Sustainability team members, some of whom, early on, had questioned the morality of calculating the NPV of their work, now championed the FVTOOL. Leading and participating in the process had brought unexpected benefits for their group. Their status within the company had grown to be viewed as more professional and a key part of the business. Team members were seeing payoffs from their efforts to learn the language of finance and to communicate using quantitative terminology. They shifted from being peripheral players to having a more central, strategic role. Colleagues from other departments could see how sustainability contributed to financial and operational performance and better understood its contribution to overall corporate goals. In the words of two interviewees from the ESR team:

“When we first heard of it, those of us on the social side were happy to get something that would help Finance understand us. We are more confident in costing the programs that we do. This puts us in a much better position with finance. In previous meetings, other departments had figures and we had to talk to explain. Now we are putting figures to our words just like other departments.

The change within the ESR team is marked. What are these risks that we are trying to mitigate? Are their costs justified in terms or risk mitigation? Previously program owners were not connecting the dots to risk mitigation or value creation. Now we challenge the numbers. Previously, we had no framework to evaluate. People are now trying to highlight the value of their initiatives for the business not just for stakeholders.

An interviewee from Finance concurred:

“My biggest surprise was that it is possible for the ESR team to have a conversation on financial terms. Every conversation I had with them before, … [t]hey never could articulate their assumptions and acknowledge costs and benefits. Now they can and do. They have their act together and can explain a business case … Previously, they were not able to see their business case. … Finance and [Environment and Social Responsibility] are now working together much better than before. Just those changes alone justify the effort put into the pilot.

Another colleague from Finance reinforced this sense of progress:
In the last business planning meeting, I saw a huge improvement in SR's presentation of budget and supported by data of the business benefits of SR programs. The meeting went very smoothly compared to previous meetings.

Sustainability staffers saw their work acknowledged outside of Ghana too. Their bosses had begun to cite the acceleration of the land acquisition, productivity gains in their workforce due to the malaria control program and savings from investing in water and sanitation infrastructure in external presentations justifying Newmont’s commitment to sustainability to skeptical shareholders and financial analysts. In fact, all of the teams that met to share data and discuss the NPV calculations left with an appreciation for the many ways that the company impacted external stakeholders. The process heightened transparency and coordination surrounding sustainability.

Still, the long-term implementation of the FVTOOL was far from complete. Thus the implementation team had developed guidelines (see Appendix 2) for future efforts. Besides these recommendations, the sustainability staffers considered whether and how the results from their work could be integrated into risk management, audit and compliance, human resources and new business development. Could output from the analysis validate and update the risk register, which had been a crucial input into the measurement of value protection? Did the discussions regarding indirect value protection surface additional sustainability risks that were omitted from the registry? Could estimates of the changes in the probability of certain risks be compared with the actual data before and after the expansion of sustainability initiatives? Should the identification of new sustainability risks trigger investigations or monitoring? Should human resources expand awareness of the strategic importance of sustainability much as it previously had done for health and safety? Should compensation and bonuses be adapted to incorporate sustainability-related criteria? Could the same process be implemented at other operations and at the corporate-level in the evaluation of new business opportunities? Could corporate-level decisions regarding the allocation of resources across operating units and regarding the appropriate portfolio of operating and development projects similarly incorporate the aggregated insights of this process?

All this would be challenging enough if the sustainability executive had confidence that the analysis was comprehensive. But, he worried that the data inputs remained too circumscribed. The process made good use of internal financial data on direct value creation. By contrast, the extensive data that emerged from consultations with external stakeholders had not been explicitly incorporated into the financial valuation analysis on indirect value protection. Where a powerful stakeholder had strong preferences between one sustainability initiative and another, those preferences should factor into the ranking of initiatives. Where stakeholders were more directly impacted by certain risks more than others, the impact of one initiative should vary in its impact on that risk as compared with another even if they were otherwise ranked equally. Instead, the detailed stakeholder surveys and broader assessments of engagement had only indirectly and qualitatively been included in the NPV calculations. This led to a subjective system in which some program managers strategically argued for the highest quality rating for their initiatives. These arguments were countered by their peers leading to outcomes that all supported but there was no systematic process to evaluate programs available. In January 2013, Deloitte and the IFC
developed a tool to address this concern. It examined the key issues raised by various stakeholders and adjusted the risk mitigation potential of each investment according to the combined influence of the stakeholders that prioritized that issue.

Another challenge was how to describe the use of the FVTOOL to people outside of the company that would help them understand Newmont’s efforts to balance competing demands. Full transparency risked dehumanizing stakeholder engagement, seemingly reducing personal relationships to a formula and a spreadsheet. Quantitative rigor could not be allowed to squeeze out corporate values and commitments to sustainability. As an Ahafo employee put it, “you cannot outsource relationships” nor should you base their content on quantitative analysis alone.

The tool also lacked a means to quantify what was perceived as the largest financial benefit to sustainability initiatives: their impact on Newmont’s reputation and, as a result, the terms on which it would be offered future assets by governments and other external stakeholders. This reputational benefit was extremely difficult to calculate given the long-term time horizon and limited sample size. Its omission made the current estimates of net present value necessarily conservative.

Despite these challenges, the ESR executive was proud of what his team had accomplished. Sustainability was no longer seen as money down the sink. Senior management now recognized that there was a strategic reason to fund these programs. Furthermore, this change in attitude was happening not only at Ahafo but also at other FVTOOL early adopters including several other major mining companies. He was being asked to make presentations at industry conferences around the world. Consultancies such as Deloitte and others were promoting the tool in multiple industries including oil & gas, forestry, agribusiness and even heavy manufacturing. The experiences at Ahafo had even found their way into the required curriculum of leading business schools and sophisticated industry trainings. While practitioners had long sensed the business justification for corporate citizenship and community goodwill, the process unleashed by quantifying its value was an important step in aligning core business objectives and sustainability initiatives. In a phrase coined by the Group Executive Environmental and Social Responsibility, quantifying the net present value of sustainability initiatives at Newmont’s Ahafo mine in Ghana had finally allowed the company to get “Beyond NPV.”
Appendix 1: Summary of FVTOOL Calculations

Disclaimer: Some of the values and numbers presented throughout the report are disguised or should be considered approximate and may not represent actual values and or costs.

With regard to the four sustainability initiatives under review, the team had begun by defining six project risks.

1) Roadblocks that disrupted production which were expected to occur once every other year, last one week and cost a fixed $3m plus one week of lost revenue.
2) Serious complaints which are expected to occur 12 times per year with an expected average cost of $50,000.
3) Exploration protests which were expected to occur every other year, last two weeks and cost $5m plus two weeks of lost revenue.
4) Fines and legal judgments which were expected to occur every third year with an average cost of $3m.
5) Water protests which were expected to occur every other year with an average cost of $200,000
6) The risk of expropriation was estimated as 1 in 1,000 probability in any given year.

The team then calculated the costs and benefits of the four proposed initiatives.

For water and sanitation, these included
- An increase in operational expenditures to construct additional bore holes from $421,000 to $686,000 per year
- An increase in additional expenditures for the environmental department of $130,000 per year.

For community health, these included
- The expansion of the community health budget from $105,000 per year to $235,000 after the initial two year expenditure of $425,000 per year.

For technical & vocational training (TVET), these included
- An expansion in the apprenticeship program from 69 to 91 students at a cost of $25,000 per student
- A further increase in the local sourcing budget which is estimated to cost $2.1m in the first five years, $700,000 in years 5-10 and saves $700,000 per year in years 10-20. Each of these cost estimates is drawn from a TRIGEN distribution with the 5th percentile at 10% of the mean estimate and the 95th percentile at 200% of the mean.
- A one-time IFC contribution of $1.5m in 2010.
- A $180,000 per year savings via reduced accidents.
- A $38,000 per year savings in hiring costs

For The Newmont Ahafo Development Foundation (NADeF), these included
- A 25% expansion of the 2012-2030 contributions from $717,000 to $896,000

These calculations revealed that all four programs were positive in their total value added but that the community health and water and sanitation programs had wider variance. Nevertheless, the potential benefits of the TVET and NADeF programs were perceived as so important that they justified the risks associated with relatively moderate expansions in these existing programs.
Appendix 2: Recommended Guidelines for the Implementation of FVTOOL Analysis

1) Identify the right internal team members. Key functions (upper management level) should participate early and act as a steering committee. In particular, the following departments should participate: community relations, land acquisition, finance, risk management, procurement, operations and human resources.

2) Ensure proper scoping of the project selected for NPV modeling.
   a. The steering committee should define the timeline and boundaries of the project (e.g., within one operation site or geographic area).
   b. A formal risk and opportunity analysis (per risk register and stakeholder perception data) should be carried out before selecting the final portfolio of sustainability initiatives.
   c. The sustainability initiatives portfolio (Scenario A&B) selected for evaluation should include broader categories of programs (e.g., local economic development, supplier development programs, livelihood restoration, biodiversity) for which direct cost/benefit information was available.

3) Identify the right sources of information and gather required data (direct costs and benefits including assumptions) before using the model. For example:
   a. Finance – project cash flow, community investment and operations budget
   b. Risk management – risk register and risk evaluation tools;
   c. Procurement – total procurement cost and local spending;
   d. Health and safety – Loss time due to injury, insurance claims, HIV/malaria costs and costs of prevention programs;
   e. Human resources – costs of local vs. foreign employees, training, and turnover;
   f. Sustainability/CSR – Environmental, Social, Health Impact Assessment, other baseline studies, key performance indicators, strategic plans and community perception surveys.

4) Develop risk-consequence table for the following categories, including data on type, frequency, and cost:
   a. Delays in planning,
   b. Delay in construction,
   c. Delay in operations,
   d. Project cancellation,
   e. Unforeseen costs,
   f. Lawsuits.

5) Enter FVTOOL project basics: project phases (in years, months), cash flows (minus CSR spend), WACC, country inflation rate, etc.

6) Conduct cost-benefit analysis of spending and savings or productivity gains from each sustainability investment.

7) Determine importance and quality rating for each investment using separate quality benchmark and self-assessment tool.

8) Run model and analyze preliminary output.

9) Validate and refine assumptions/inputs with management.

10) Rerun model and consider implications for investment.

11) Train company staff to use model and interpret output.