

Sustainability Strategy of Hess Corporation in New Country Entry



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Table of Contents

EXECUTIVE SUMMARY	4
1. INDUSTRY AND CLIENT OVERVIEW	5
Hess Corporation Profile	6
Industry Standards and Practices	7
The Business Case for Corporate Social Responsibility	8
2. SOCIAL INVESTMENT DECISION ANALYSIS TOOL	12
Strategic Purpose	12
Practical Application	13
Strategy Prompt Table	15
3. METRIC DESCRIPTIONS BY CATEGORY	19
Education	19
Economic	20
Environment	22
Health	23
Society	25
Water	26
4. USER GUIDE	29
Section 1. Tool Introduction	29
Section 2. User Inputs	30
Section 3. Results and Interpretation	34
Using the Prompts for Next Steps Table	36
APPENDICES	37

A. References	37
B. Summary Statistic Outputs Per Metric	41
C. Corporate Structure Flow Diagram	53
D. Company Question Score Key	54

Executive Summary

As an international oil and gas company specializing in exploration and production, Hess Corporation (“Hess”) operates in many nations across the world. It is common for Hess to hold assets in diverse regions, necessitating a comprehensive approach to identify the overarching conditions within a particular location. Our interest is to examine how the Corporate Social Responsibility (“CSR”) division of the company conducts initial screening at the project level. Through long-term consultation with our client, we developed a tool to appraise the viability of potential social investments in a new area of operation.

This paper serves two primary and related purposes: to detail the development process and practical implementation of the Social Investment Decision Analysis Tool and to contextualize the practice of sustainability in the oil and gas sector.

The Social Investment Decision Analysis Tool confers a range of benefits to the client. Primarily, the output generated can serve as a guiding instrument to CSR professionals at Hess, producing an overview of country-level data for new entry. Further, the CSR team can use the tool to re-evaluate existing social investments; for example, if corporate priority shifts to health-based solutions from previous education-based initiatives. Under this condition, the tool simulates the degree to which CSR practices in the country have been near-optimal, drawing from empirical results gathered from in-progress or completed programs.

Lastly, the tool can offer insight into the CSR process for non-CSR teams at Hess, such as legal and business development professionals. By constructing the tool based on new country entry, the analysis will identify key areas of opportunity—in future endeavors in locations that Hess has not yet conducted business—at the corporate and national levels.

1. Industry and Client Overview

The oil and gas industry provides the dominant fuel source for the world; oil supplies 33% of primary energy consumption.¹ While critically important for almost every facet of the modern economy, the oil market's share has been decreasing since the 1970s. Demand for oil is mainly growing outside of the Organization for Economic Co-operation and Development (OECD) countries. Demand and supply for the industry are impacted by a myriad of factors including: global economic growth, technological change, government policies, fuel efficiency standards, resource nationalism, social license to operate, and competition from other fuels.

A short history of the oil and gas sector reveals the rise of the Seven Sisters, consisting of the largest international oil companies (IOCs). Throughout the 1950s, the Six Sisters claimed the majority of international onshore and offshore plays. These IOCs were well-organized and able to function as a strategic cartel. In response to their market size and collective power, the Organization of Petroleum Exporting Countries (OPEC) formed in Baghdad in September of 1960. OPEC operates to set oil policies among member countries to ensure a fair return of revenue from crude oil exports on the global market. The five founding members of OPEC include Saudi Arabia, Iraq, Iran, Venezuela, and Kuwait. Today, other members include Qatar, Libya, United Arab Emirates, Algeria, Nigeria, Ecuador, and Angola. The creation of OPEC signaled the rise in national oil company (NOC) market power and collaboration. In 2013, OPEC held 81% of the world's proven oil reserves (1,206 billion barrels). The control of NOCs has grown substantially, currently in ownership of 90% of the world's proven oil reserves. In the past, the NOCs relied on the technical expertise and project management skills that IOCs typically could provide; however, many NOCs are gaining the skills and personnel necessary to produce, refine, and sell their oil.

Social and environmental issues have become synonymous with the oil and gas sector. Due to a history of environmental degradation, human rights abuses, and government corruption, the international community has established organizations to provide accountability and transparency for the industry. The following sections will provide a brief overview of the client for this project (Hess Corporation), the institutional landscape, compliance mechanisms, and current industry trends related to responsibility and sustainable business practices in the oil and gas space.

¹ The Oil Market to 2030—Implications for Investment and Policy

Hess Corporation Profile

Founded in 1920, Hess Corporation is a global exploration and production company of crude oil and natural gas. The company reported total production in FY 2012 of 396,000 barrels of oil equivalent per day and maintained proved reserves of 1,400,000,000 barrels of oil equivalent. Until 2013, Hess maintained a marketing and refining division, but by December 31, 2013, the company fully divested the segment to Marathon Oil.

In terms of geographic reach, 46% of the company's proven reserves were located within the United States. The company operates 51% of the company's crude oil and liquid natural gas and 22% of natural gas production within the U.S. In Europe, the company holds plays offshore Denmark and in the Volga-Urals region of Russia through interest in a subsidiary. In Africa, the company is an operator and owner of interest in Block G, which contains the Ceiba Field and Okume Complex offshore of Equatorial Guinea. In addition, Hess has 49% interest in a partnership with the Algerian NOC to redevelop three fields. 74% of Hess' natural gas production originated from its operations in the Asia region (including Indonesia, Thailand, and Malaysia).²

In 2002, the Hess Leadership team was formed. Containing five executive officers, the team was designed to drive strategy and operations including Environment, Health, and Safety (EHS) and Social Responsibility (SR) to protect workforce, customers, and local communities. Hess subsequently developed its EHS Policy intended to reaffirm the commitment to the environment. At the same time, the company developed a new Corporate Social Responsibility Policy. In addition, Hess piloted the first social investment project in West Africa focusing on stakeholder engagement, partnering & capacity building, and sustainable implementation. Starting in 2003, Hess began investing in education infrastructure development and began to support the U.S. State Department's Voluntary Principles on Security and Human Rights. In 2004, Hess became the first U.S. oil & gas company to endorse and follow the UN Global Compact principles. The company created the Social Responsibility Working Group to guide management in sustainable social investment.

² Profile of Hess Corporation. *Reuters*.

In general, the main concerns to Hess are non-technical risks, especially those associated with communities, stakeholder expectations, public perception, and the regulatory environment. In total, Hess invested \$39.58 million in social programs worldwide in 2013.³

Industry Standards and Practices

International Organizations and Multilateral Financing Institutions provide social and environmental policy governance, enforce transparency, and establish frameworks for sustainable business practices for IOCs and NOCs to adhere to.

UNITED NATIONS GLOBAL COMPACT: As a collaborative policy initiative for businesses, the UN Global Compact aligns operations and strategies with ten universal principles encompassing the issues of human rights, labor, environment and anti-corruption. Stakeholders and corporate participants from over 145 countries make up the largest corporate voluntary social and environmental responsibility association in the world.

INTERNATIONAL FINANCE CORPORATION (IFC) PERFORMANCE STANDARDS: IFC operates in conjunction with the World Bank and acts as the financing wing of the largest multilateral financing institution in the world. Projects that receive financing from the IFC must abide by the IFC's Sustainability Framework of eight individual Performance Standards throughout the project cycle.

INDUSTRY-SPECIFIC ORGANIZATIONS

INTERNATIONAL PETROLEUM INDUSTRY ENVIRONMENTAL CONSERVATION ASSOCIATION (IPIECA): The IPIECA was formed in 1974, following the creation of the United Nations Environment Program (UNEP) as a global oil and gas industry association for alignment on environmental and social issues. Today, the organization remains the oil and gas industry's principal mode of communication with the United Nations. Membership includes 37 companies, including all 6 supermajors (ExxonMobil, Royal Dutch Shell, BP, Chevron Corp., ConocoPhillips, and Total S.A.) and 7 NOCs, and 16 associations which contain over 400 oil

³ Ibid.

and gas companies. IPIECA membership organization includes over half of the world’s oil production, and helps companies improve social and environmental performance through the following mechanisms:⁴

GLOBAL REPORTING INITIATIVE (GRI): GRI was founded in the United States in 1997 in conjunction with the nonprofit CERES and the United Nations Environment Program. A network of nearly 30,000 people, GRI holds regional locations—considered “focal points”—in Australia, Brazil, China, India and the U.S. The Framework establishes principles and indicators that companies use to maintain transparency in their economic, environmental, and social activities. In May 2013, the fourth generation of the sustainability reporting guidelines, G4, was launched. An Oil & Gas Sector Supplement is included and updated to the new G4 guidelines. GRI states that the industry faces social and environmental issues “more frequently or in greater measure than in other sectors.”⁵

GRI also recognizes that the IPIECA has their own guidance on voluntary sustainability reporting and that the two frameworks may have different approaches and outcomes. However, these two organizations share common Working Group members, namely: BP, ENi, Hess, Shell, Statoil, and Petrobras. Additionally, GRI and IPIECA have developed two mapping documents (GRI to IPIECA and IPIECA to GRI) to illustrate the crossover in reporting indicators and provide companies with consistency in reporting.

The Business Case for Corporate Social Responsibility

Companies in the oil and gas industry establish social investments as a way to create a lasting positive impact in society, maintain relationships with local and regional stakeholders, and garner a favorable public reputation.⁶ However, many of these investments do not prove to be sustainable (i.e. regarded as operational and successful beyond the company concluding operations in that area). While the oil and gas industry has plentiful reporting guidelines and indices established to increase

⁴ IPIECA. Oil and gas industry guidance on voluntary sustainability reporting. 2010.

⁵ GRI. Oil and Gas Sector Disclosures (G4).

⁶ IPIECA.

transparency in operations, a successful social investment strategy is one that links directly to the companies' primary business drivers.

Firms are experiencing project delays mainly due to non-technical social risk and are spending significant funds on social investments. According to an analysis by consulting firm ERM, non-technical risk is not only a rising threat, but it can account for 75 percent of the cost and failures of large oil and gas capital projects. In attempts to secure a social license to operate due to non-technical risk—supported by heightened awareness of project delays and the forgone net present value added of the capital projects—some companies have been incentivized to allocate increasingly large sums to social investments.

However, these investments do not necessarily confer a sustainable or successful outcome. For instance, Chevron spent four times as much on social investments in 2012 as it did in 2003. Studies have found that monetary value alone does not correlate with improved relations with the communities in which the company holds assets. A major trend occurring in this arena is the increase of technical capacity and human capital by NOCs. Consequently, IOCs integrate the expertise of sociologists and anthropologists to understand and mitigate non-technical risk. The focus is shifting toward building local soft skills (e.g. relations and interactions with corporate and government officials) and fostering capacity in the authorities to improve project transparency and ownership. Further, this leads to long-term sustainability of the program post-closure. In addition, corporations can leverage partnerships and relationships with international institutions in-country to ensure social investments are fulfilled instead of directly building or investing.

These investments must be aligned with the companies' business models in order to achieve optimal shared value with the community. Shared value, as described by Michael Porter and Mark Kramer in their seminal 2011 article, is created by policies or programs that improve local socio-economic conditions and increase core business performance. Promoting and achieving shared value in the extractives industry is inherently different than other industries due to the high capital costs and time horizons of the projects. Almost 80 percent of countries that depend heavily on the extractive industry also have income per capita levels lower than the global average.⁷ This means that there are few paths to prosperity in these countries that do not involve these industries. The Shared Value Initiative indicates three levels of shared value are identified for the oil and gas

⁷ McKinsey Global Institute, 2013.

industry: 1) creation of markets and products; 2) increasing value chain productivity; and 3) building local capacity. Through the interpretation stage of our tool—the Strategy Prompt Table—we attempt to assimilate these three defined levels.

Promoting shared value through social investments can be an arduous process that must have the following: 1) buy-in from the local community without causing jealousies of perpetuating societal schisms; 2) strategic planning process started early; and 3) well-established Key Performance Indicators (“KPIs”). If a project is perceived as successful by the local community, then the company cannot deem the project successful. In terms of early planning, social investment should link to project design. Often, investments are scaled up as company presence in the country increases directly before construction. Key social investment opportunities, such as job training, can be overlooked if incorporated too late in the asset project cycle, and communities may have codified opinions about the company. Aligning social investments with the company’s business model can take advantage of the transparency, accountability, and long-term planning that a company normally ensures when making core business decisions. While forecasted NPV models cannot be readily applied to the impact of social investments, international reporting frameworks are strong, and many metrics of success can be used as KPIs. Additionally, a company should not assume that a social investment could replace regular stakeholder engagement practices.

Companies that adhere to international compliance mechanisms and maintain transparency in their operations can manage non-technical risk to secure their supply chain, maximizing development benefits for local peoples, and build brand equity. The table below summarizes some of the shared value outcomes.

Commercial Value Outcomes	Sustainable Local Benefit Outcomes
<ul style="list-style-type: none"> • Supply chain efficiency: local sourcing and proximity to supplier structures • Social license to operate • Improved relationships with host governments and government authorities 	<ul style="list-style-type: none"> • Long-term employment opportunities and capacity building • Growth of competitive businesses and increase supplier-customer relationships • Multiplier effect through increased economic growth and spending in communities⁸

⁸BSR. “Commercial Value From Sustainable Local Benefits in the Extractive Industries: Local Content. 2011.

The Social Investment Decision Analysis Tool (“SIDAT”) is an initial screening tool designed to be used in-house early in the planning process to identify the possible shared value investment areas. The tool uses quantitative analyses to indicate the social investment area that both the country needs and in that Hess has the best proven capacity. The tool also captures best practices by incorporating Hess’ relevant business drivers.

2. Social Investment Decision Analysis Tool

Strategic Purpose

As illustrated in Appendix C, the Social Investment Decision Analysis Tool was developed as a singular component in the Corporate Social Responsibility process for Hess Corporation. The primary function of the tool is to highlight capacity gaps at a national level. Through this initial screening, the CSR staff at Hess are better equipped to understand the priority areas for a country and situate the organizational capacity in these scenarios.

This section explains the function of the tool within the scope of the CSR management structure at Hess. Throughout the process of conceptualizing and developing the tool, it was important to examine how the company would optimally integrate this methodology into appraising potential new areas of exploration and production. For the purposes of this paper, it is equally important to illustrate the position of the tool, showing how it leads into sequential inputs and stages that comprise the framework of CSR operations at Hess.

In the CSR practice area at Hess, this preliminary stage—an important feature of understanding the possible risks and benefits entry into a new region—is known as Strategic Social Investment. This encapsulates the sociocultural and macroeconomic advantages in conducting and maintaining initiatives. It does not include Tactical Social Investment; this next phase in the corporate process includes specific project-level recommendations and procedural instructions, emphasized further along in the programmatic stages. The tool focuses on synthesizing important data for the Strategic Social Investment stage, captured through country- and company-level data, furnishing a broad indication of how resources can effectively be deployed based on instances of success in similar situations.

CSR staff at Hess, and international oil and gas companies in general, have extensive management procedures for initiatives and programs. Reflected in the latter portions of the diagram depicted in Appendix C, the SIDAT can provide a starting point for determining the viability of a CSR project. By producing an output based on further inquiry and general recommendations, the tool leads seamlessly to the Tactical Social Investment stage.

Hess performs Corporate Social Responsibility in a comprehensive manner, typified by the multi-dimensional approach shown in the flow diagram (refer to Appendix C). The next main step, Enterprise Risk Management, is at the corporate level. Assessing the potential for supply interruptions and operational considerations in a certain location, this is a key tenet of business administration within the company. Risk management can be evaluated and expressed in a number of ways; Hess, for instance, uses heat maps and other visual depictions.

In terms of ground-level stakeholder engagement and community outreach, Hess then completes a Social Impact Assessment in the potential new area of operations. This may involve a partnership with a local or regional organization to gather information and feedback on public opinion, aiming to integrate citizen priorities into the programming that Hess deploys. Once stakeholder feedback has been received and interpreted, CSR staff proceed to the last two stages: Project Design and Planning and Project Implementation. To launch a new initiative, staff utilize feasibility studies and collaborative efforts with both nongovernmental organizations and relevant government agencies to perform the CSR initiatives prepared for in the previous stages.

Practical Application

The Hess Social Investment Decision Analysis Tool is used to compare areas of potential domestic needs of a country with the currently developed Environmental, Health, and Safety (EHS) and Social Responsibility (SR) expertise and capabilities of Hess Corporation. The tool focuses on six categories of social investment: 1) Education, 2) Economic, 3) Environment, 4) Health, 5) Society, and 6) Water. A two-sided research and comparison method is utilized to compare national needs with corporate competencies.

The first section of the tool is designed to facilitate country-based primary research and calculate an overall score for social investment categories. This score determines the relative need of a country in the six social investment categories when compared to its HDI cohort. A representative group of specific measurable metrics for each social investment category is provided to the user with links to the proper information data bases. As the user completes each metric field with the most recent data available, the tool yields a metric score based on the positive or negative standard deviation of the value, derived from the sample median of cohort countries.

Metric scores are tallied and weighed against the total possible points to yield an overall category score. These final scores are ranked to show in which categories the country of interest is lagging or leading relative to its HDI cohort and by what degree. The results from the country section can be used to give valuable insight into the potential needs of a particular country or show where social investment may be redundant with diminishing returns. Additionally, country-based results may be used in tandem with the analysis of the Hess section to offer more refined decision and next step recommendations.

The second side of the tool is used to rate the experience and efficacy of Hess Corporation in completing previous EHS and SR initiatives in each of the six social investment categories. Five project success questions are answered on a one-to-five scale. Each question has well-defined definitions for score levels. The final scores for each category—yielded when all five questions are completed—indicate the overall effectiveness of programs in that category. Categories with high ratings should be considered as priority options with potentially higher returns on investment due to internal efficiencies developed through previous initiatives. The results from this self-assessment tool rank the six social investment categories based on input from experienced internal EHS and SR employees and do not require researched inputs. These results can be used internally as a strength and weakness analysis for previous EHS and SR projects and in tandem with the country-based tool to further inform strategy for a country of interest.

Upon completion of the both the country and corporate sections, the tool generates a comparison of the two sets of results. A gap-analysis highlights the greatest positive differences between the capabilities and prior successes of Hess Corporation and the relative HDI score for each social investment category in the country of interest. For example, a positive differential will be produced in a scenario when a low score emanates from the country section and a high score from the Hess internal tool in a particular category. Next step recommendations and best practice overviews are custom-generated based on the resulting highest positive differentials. These recommendations inform the next steps of EHS and SR strategy to create the greatest positive social benefit in the specified country, factoring in the organizational expertise provided by Hess Corporation.

The next result generated by the tool is the Heat Map. The Heat Map builds upon the two previous outputs: Country Analysis and Gap Analysis. Within the tool, the user ranks the relative importance of the Business Drivers for Hess Corporation in the specific country of entry, and these

are then overlaid with the results from the Gap Analysis in order to visualize how Hess can invest in the Social Investment Category that 1) the country needs most; 2) Hess has the best proven capacity; and 3) that aligns with the most pressing business driver in the country.

Strategy Prompt Table

We have assessed a country’s social investment needs and opportunities from an objective, quantitative point of view through the Layer 1 and Layer 2 outputs of the tool: Country Analysis and Gap Analysis. The Strategy Prompt Table can be considered as the interpretation stage of the tool. By inputting Hess’ main business drivers for the specific country of entry, the user can use the table to filter a social investment opportunity by its connection to a relevant business driver. The table attempts to create a clear linkage between social investment and sustainable, long-term business strategy.

BUSINESS DRIVERS

Through internal discussions with Hess’ CSR team, we have distilled the most relevant business drivers for the company in any country of entry (refer to Figure 1 below). The Business Drivers table is separated into major objectives, higher level objectives, and lower level objectives. The five major objectives include: minimized risk, access to land & resources, cost reduction, human capital, and brand value & reputation. Each major objective is broken down into three to four higher level objectives and three or four lower level objectives.

Figure 1. Example of Business Drivers Table

Major objectives	Higher level objectives	Lower level objectives
Minimized risk	Supply chain risk	Reduced likelihood of stakeholder protest
	Stable social environment	Minimal community dependency on operation
	Successful community projects	Local management of projects; Leveraging local partnerships

Here, for example, if Hess implements a social investment that can reduce the likelihood of stakeholder protest, the company can reduce supply chain risk and thus satisfy the major objective of minimized risk.

STRATEGY PROMPT TABLE

The complete table contains three key columns: 1) Business drivers; 2) Social Investment Link; 3) Prompts for Development a Social Investment Strategy. Business drivers have been discussed, and the user is instructed to filter the table by the two highlighted cells below: major objectives and social investment category. In this way, the user can use the table to visualize how investing in a specific category (i.e. Education) can link to Hess’ major business objectives in the country of entry.

Business Drivers			Social Investment Link		Prompts for Developing a Social Investment Strategy	
Major objectives	Higher level objectives	Lower level objectives	Social investment category	Social investment opportunities	Direct Investment	Partnership

The column heading entitled “Social investment opportunities” was created to give ideas to Hess corporation on real investment opportunities for a country. In the model, each of the six social investment categories consist of nine metrics. While this gives a solid representation of the country’s status in the social investment category, these individual metrics are not to exact investment *opportunities*.

For example, one of the metrics that helps analyze a country’s status in Education is the United Nations Development Program’s inequality-adjusted education index; however, we are not asserting that Hess should design a social investment in order to directly increase this index. Instead we aggregated each the metrics into investment opportunities. For example, the nine metrics for Education were aggregated into three social investment opportunities for Hess’ investments:

- Enrollment rates
- Education level achieved
- Pedagogy

Each of the six social investment categories (Education, Economic, Environment, Health, Society, and Water) is broken down into these real opportunities instead of their respective metrics.

The next steps in the Strategy Prompt Table are the actual prompts for developing a social investment strategy. Prompts were developed by assimilating information from UN Global Compact, GRI Oil and Gas Industry Supplement, IFC Performance Standards, UN Principles for Responsible Investment, International Institute for Sustainable Development’s CSR Guidelines, IPIECA’s Guide to Successful, Sustainable Social Investment, and training from the Nicholas School of the Environment and Sanford School of Public Policy. It is important to note that these are prompts designed to guide internal thought process for next steps in initiating a social investment opportunity. Prompts are designed to start a brainstorming process, and they are applicable to any country of entry. The prompts are separated into columns denoted as direct investment and partnership.

Direct investment suggestions are designed to initiate thought if Hess was to provide a social investment opportunity directly as the only actor in the space. Additionally, the direct investment prompts also include suggestions for research or management strategies for Hess *internally*. On the other hand, partnership prompts are designed to spark Hess’ thinking outside of direct investment strategies. Below is an example of one row of the completed Strategy Prompt Table. Here, prompts are given for initiating an investment in education in order to both increase the education level achieved as well as minimize business risk by providing a stable social environment through decreased community dependency. Such prompts have been designed for every business driver and every social investment opportunity.

Business Drivers			Social Investment Link		Prompts for Developing a Social Investment Strategy	
Major objectives	Higher level objectives	Lower level objectives	Social investment category	Social investment opportunities	Direct Investment	Partnership
Minimized Risk	Stable social environment	Minimal community dependence on operation	Education	Education level achieved	How can citizens become aware of opportunities for higher education? What methods exist for effectively disseminating this information? In terms of culture, is there a perception that educational	Established trade schools and universities; collaborate with international organizations to bring in new programs

					attainment is incongruous to identity?	
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3. Metric Descriptions by Category

To render an assessment of national-level characteristics relevant to the tool—metrics that, in context, offer value to a foreign corporation engaging in business activities—over fifty metrics were selected from various international organizations. In coordination with the practice areas publically disclosed within the annual Sustainability Reports from Hess, the tool contains six focus areas: 1) Education; 2) Economic; 3) Environment; 4) Health; 5) Society; and 6) Water. As best as possible, the Social Investment Decision Analysis Tool incorporates the most appropriate data to capture an accurate portrayal of national status through commonly-used development criteria.

Education

1.1) **Education index:** This index aggregates mean years of schooling and expected years of schooling. Both of these metrics come from the United Nations Development Programme (UNDP) analysis. In context of the SIDAT, education index serves as a proxy observation of a country's schooling infrastructure and educational attainment.

1.2) **Adult literacy rate, both sexes (% of population):** Obtained from the UNESCO (United Nations Educational, Scientific and Cultural Organization) Institute for Statistics, this percentage shows the percentage of the population aged 15 and older who are deemed literate (i.e. able to read and write a 'short, simple statement'). Literacy rate represents a clear objective to organizations aiming to improve education outcomes through facilitation of programmatic solutions and partnerships.

1.3) **Inequality-adjusted education index:** Based on data from the UNDP education index (Metric 1.1) and inequality in education, the metric assesses the distribution of years of schooling within the HDI groups. This index delivers a broad appraisal of advantages bestowed on students in highly-developed countries compared to those in countries with low rankings.

1.4) **Combined gross enrollment in education:** This percentage from UNESCO indicates the total student enrollment in all levels of education. High gross enrollment rates can provide the country with long-term societal benefits and is a good proxy for the capacity of a country's social development need in education.

1.5) **Expected years of schooling (of children):** Given the assumption that enrollment rates can be extrapolated throughout the schooling career of a child at entrance age, this amount from UNESCO measures the projected time a child will receive an education. Due to the association between educational outcomes and economic development, this data furnishes a simple conclusion on the policy and structural capacities of a country to provide long-term education to its youth.

1.6) **Mean years of schooling (adults):** Among people aged 25 and over, UNESCO measures the percentage of years of education received within a country. This data retroactively demonstrates how a country has performed in providing a secure learning environment for its citizens and offers a general judgment on governance priorities.

1.7) **Population with at least secondary education, female/male ratio:** A measure of gender equality in education provided by the Barro-Lee dataset of Educational Attainment, this ratio shows how accessible higher education is to all citizens—a value of 1 signifies an equal ratio. In development, ensuring all members of society can receive comprehensive academic or vocational training is crucial to modern and equitable economic conditions.

1.8) **Public expenditure on education (% of GDP):** This value obtained from the World Bank Development Indicators—shown as a percentage of Gross Domestic Product (GDP)—measures the public budget allocated toward education in a country. In addition to offering insight as to the proportion of national educational presence, this metric may provide a consideration of economic policies.

1.9) **Primary school teachers trained to teach:** Obtained from UNESCO, this metric is a percentage of teaching professionals at the primary level that have received the minimum level of formal training. In many ways, this data is thematically significant, as it can illustrate the following: vocational preparation, student access to adequate instruction, and opportunities for organizations to establish programs and certifications.

Economic

2.1) **GDP per capita (2011 PPP\$):** GDP per capita is perhaps the clearest metric in determining an individual's wealth, and the value of this metric has implications in determining the strength of the country's economy.

2.2) **Industry, value added (annual % growth):** This metric is defined by the World Bank and the International Standard Industrial Classification (ISIC) as the net output of the industrial sector. Industry includes, mining, manufacturing, construction, electricity, water, and gas. The net output is calculated without deducting value lost from the externalities associated with environmental degradation. The annual growth a country's industry serves as a proxy to indicate the structure and strength of the economy.

2.3) **GDP growth (annual % change):** Annual GDP percentage growth—the wealth of a nation--shows the trend in the productivity of a nation through time.

2.5) **Market capitalization of listed companies (% of GDP):** Also known as market value, market capitalization is defined as the share price times the number of shares outstanding of listed companies. Listed companies are domestically incorporated companies that reside on the country's stock exchange. This metric serves as a proxy determinate of the strength of a country's private sector engine.

2.6) **Remittance inflows (total compensation received, % GDP):** This metric is defined by the total earnings and material resources that people working outside of their home country send back to their country of origin. Not captured in GDP calculations above, remittance inflows can prove a substantial amount of a country's wealth and should be accounted for in economic qualification.

2.7) **Inflation, consumer prices (annual):** Inflation is measured by the consumer price index and reflects the annual percentage change in the cost of goods and services. Inflation indicates the purchasing power of a country's currency, and the annual increase can show the projected stability of a country's economy over time.

2.8) **Foreign direct investment, net inflows:** The sum of equity capital, reinvestment of earnings, long-term capital, and short-term capital invested by an enterprise working outside of a country is considered by the World Bank to be foreign direct investment.

2.9) **Household final consumption expenditure per capita growth (annual %):** The market value of all goods and services, and durable products purchased by households is the final consumption expenditure. Increased discretionary expenditure serves as a proxy to the wealth of the individual in the country of question.

Environment

3.1) **Carbon dioxide emissions per capita (tonnes):** Human-generated carbon dioxide emissions from the burning of fossil fuels, gas flaring & production of cement, and depletion of forested areas is divided by mid-year population. A country's carbon emissions per capita can indicate the carbon intensity of the grid as well as residential use preferences.

3.2) **Population living on degraded land:** Degradation of land is measured by the amount of biomass, soil health measurements, water quantity, and biodiversity levels. The percentage of the population living on this land for a given country is calculated. This metric is one indicator of a country's terrestrial environmental health.

3.3) **Plant species (higher), threatened:** This metric represents the number threatened species in a given country as determined by the International Union for the Conservation of Nature (IUCN). Classifications considered include the following: endangered, vulnerable, rare, indeterminate, out of danger, or insufficiently known. This serves as a primary measure of biodiversity in a country; threatened species can induce further ecological consequences.

3.4) **Bird species, threatened:** This metric represents the number threatened species in a given country as determined by the International Union for the Conservation of Nature (IUCN). Classifications considered include the following: endangered, vulnerable, rare, indeterminate, out of danger, or insufficiently known. This serves as a primary measure of biodiversity in a country; threatened species can induce further ecological consequences.

3.5) **Fish species, threatened:** Fish species are based on Froese, R. and Pauly, D. (eds). 2008. This metric represents the number threatened species in a given country as determined by the International Union for the Conservation of Nature (IUCN). Classifications considered include the following: endangered, vulnerable, rare, indeterminate,

out of danger, or insufficiently known. This serves as a primary measure of biodiversity in a country; threatened species can induce further ecological consequences.

3.6) **Mammal species, threatened:** Mammal species considered exclude whales and porpoises. This metric represents the number threatened species in a given country as determined by the International Union for the Conservation of Nature (IUCN).

Classifications considered include the following: endangered, vulnerable, rare, indeterminate, out of danger, or insufficiently known. This serves as a primary measure of biodiversity in a country; threatened species can induce further ecological consequences.

3.7) **Marine protected areas (% of territorial waters):** Protected areas have been set aside by law or an institution for conservation. While the efficacy of MPAs is being discussed in the literature, the percentage of protected areas can indicate a country's political, social, and economic dedication to conservation.

3.8) **Terrestrial protected areas (% of total land area):** Protected areas have been set aside by law or an institution for conservation. These areas must have at least 1,000 hectares in reserve. The percentage of protected areas can indicate a country's political, social, and economic dedication to conservation.

3.9) **CO2 intensity (kg per kg of oil equivalent energy use):** Oil equivalent energy use is the energy use before transformation to end-use fuels, and it represents the carbon intensity of the country's grid.

Health

4.1) **Depth of food deficit:** This metric is an aggregate estimate of caloric intake necessary to increase the malnourished population to the average dietary energy requirement as stated by the Food and Agriculture Organization (FAO). In the context of development, food deficit represents a dimension of food security.

4.2) **Expenditure on health, total:** The World Bank incorporates health services and activities—from nutrition to emergency—into the percentage of national GDP. This data

shows the portion of public and private health spending relative to overall economic development.

4.3) **Life expectancy at birth:** Gathered by the United Nations Department of Economic and Social Affairs, this data reveals how old a newborn can expect to live if current patterns of mortality rates within a country remain constant throughout the lifespan. Nations with high development offer standards of living and healthcare sufficient to ensure long lives; inversely, developing nations are more at risk to disease and less access to medical services, reducing life expectancy.

4.4) **Maternal mortality ratio:** Measured in deaths per 100,000 live births, the UN, WHO, UNICEF, and World Bank measured the probability of mothers dying as a consequence of childbirth. The rate of maternal mortality among all countries has been dropping, but not enough to reach the target established in the Millennium Development Goals.

4.5) **Mortality rate, under age five:** This metric from the World Bank is the likelihood of 1,000 live births that a newborn baby will die before reaching five years of age. In terms of development, infant mortality is a key indicator of how a nation is equipped to safeguard the health of its youth—this rate can also capture if subpopulations are vulnerable according to socioeconomic criteria and even gender.

4.6) **Tuberculosis treatment success rate:** A disease largely rendered irrelevant in developed nations, this World Bank data shows the percentage of successfully completed treatments of new tuberculosis cases noted in a nation during the past year. Given that tuberculosis remains a primary cause of death in the developing world, this data can offer specific insight as to domestic health services and advances in treatment.

4.8) **Improved sanitation facilities (% of population):** Collected by the World Bank, this metric accounts for the percentage of population with access to modern sanitation infrastructure, including piped sewer systems and composting toilets. Due to the common practice of open defecation in the developing world, and the assertion of proper sanitation as a human right, the provision of these facilities is significant in improving health outcomes in low-income countries.

4.9) **Prevalence of HIV, ages 15-49 (% of population)**: This data from the World Bank refers to the current proportion of the population who are infected with the HIV virus. Despite progress in awareness and availability of pharmaceutical products that can slow the spread, HIV is a major health concern in developing nations with inadequate health services and poor information relating to safe behavior.

Society

5.1) **Access to non-solid fuel (% of population)**: Gathered from the World Bank and WHO Global Household Energy database, this percentage measures how much of the population can feasibly use energy sources that are not 'solid,' such as biomass. This represents a dual issue: environmental due to the harmful and often localized release of pollutants and economic due to the composition of the residential energy market and ability to acquire safer, reliable forms of energy.

5.2) **Homicide rate**: This metric from the UNDP is based on the number of unlawful deaths occurring among every 100,000 people in a country. A high homicide rate can indicate a variety of problems within a society: inadequate law enforcement, poor economic conditions, cultural or religious conflicts, and restive activity.

5.3) **Proportion of seats held by women in national parliaments**: The World Bank, in conjunction with the Inter-Parliamentary Union, produced this data on the percentage of female elected officials in a chamber of national government. In addition to providing an opportunity for equal representation, a high percentage can affect society due to policymaking processes that incorporate the rights and priorities of women.

5.4) **Labour force participation rate (female/male ratio)**: Presented as a female-to-male ratio, this UNDP data shows the proportion of the population from age 15 and older that is either actively seeking work or engaged in work. While this percentage does not account for comparative advantages and the overall economic profile of a country, high employment is generally correlated with positive economic outcomes, as well as auxiliary benefits such as lower crime rates.

5.5) **Prison population:** This metric from the International Centre for Prison Studies reflects the number of total prisoners—juvenile and adult—per 100,000 people in a country. The nature and severity of crimes, institutional structure of legal systems, and rule of law are not integrated into this measure and serves to broadly outline the prevalence of criminal activity.

5.6) **Access to electricity:** Based on World Bank and Sustainable Energy for All (SE4ALL) data, this metric shows the percentage of households able to receive energy. In developing countries, reliable electricity is vital for economic growth, as businesses and individuals need to use technology in some fashion. Governments prioritize electricity, particularly if energy poverty is posing an obstacle to sustained growth.

5.7) **Internet users:** Measured per 100 people, this metric from the World Bank and International Telecommunication Union reports the availability of access to the worldwide network. Due to the complete pervasion of internet services in every component of modern life, internet access is sometimes referred to in development circles as a fundamental human right.

5.8) **Corruption index:** Obtained from Transparency International, this index measures the perceived levels of public sector bribery and graft through an opinion survey administered worldwide. Scores range from 0—meaning that a country is perceived as highly corrupt—to 100—meaning that a country is perceived as very clean. Countries with developing economies and high corruption often do not maintain institutions that aim to serve the needs of its citizens, necessitating a clear framework for openness in public sector activities.

5.9) **Mobile cellular subscriptions:** Measured per 100 people, this metric from the World Bank and International Telecommunication Union reports the access to telephone services using cellular technology. Similar to internet access, the interconnected nature of the globalized economy all but mandates people have the capacity to share information through direct communication in virtually any location.

Water

6.1) Improved water source, rural (% of rural population with access): This data, sourced from the WHO/UNICEF Joint Monitoring Program for Water Supply and Sanitation, calculates the proportion of people able to use an improved source of drinking water (in a number of forms, such as piped water, public taps, and rainwater collection). Access to clean water is a clear development imperative, as contaminated water supplies are a major cause of illness and death.

6.2) Improved water source, urban (% of urban population with access): Similar to metric 6.1 (please refer to above), this percentage represents the availability of fresh drinking water to urban residents within a country. According to the World Bank, nearly eight of ten urban residents have access to piped water connections; on the contrary, only three of ten rural residents have access, exemplifying the need for separate data collection.

6.3) Annual freshwater withdrawals, agriculture (% of total freshwater withdrawal): Derived from the FAO, this data shows the percentage of water withdrawn for agricultural purposes—defined as irrigation and livestock production. Due to population growth and the reliance on the agricultural sector in many developing nations, exhausting the water supply can lead to adverse economic impacts and requires prudent planning and management.

6.4) Annual freshwater withdrawals, domestic (% of total freshwater withdrawal): Similar to metric 6.3 above, this data from the FAO is a percentage of water used for drinking purposes, public services, commercial operations, and homes. This percentage is a broad proxy for public demand on water supplies, revealing the disparity between developed and developing countries (some of which can provide only five to fifteen gallons per citizen per day).

6.5) Annual freshwater withdrawals, industry (% of total freshwater withdrawal): Similar to metrics 6.3 and 6.4 above, this percentage represents the industrial consumption of water supplies, including any industrial use and cooling thermoelectric plants. According to UNESCO, industrial uses of water account for “about 20 percent of global freshwater withdrawals. Of this, 57-69 percent is used for hydropower and nuclear power generation, 30-40 percent for industrial processes, and 0.5-3 percent for thermal power generation.”

6.6) **Annual freshwater withdrawals, total (% of internal resources):** From the FAO, this data includes all of the categories in metrics 6.3, 6.4, and 6.5, comprising an overall percentage of the water withdrawals to the amount of water available in the country. The most common sources of water are visible bodies such as lakes, reservoirs, and rivers; the data also captures water available from aquifers and recharge of groundwater. Seasonal and geographic variability can be significant, however, necessitating a comprehensive view of water availability within a country and attendant optimal times and uses.

6.7) **Renewable internal freshwater resources per capita (cubic meters):** This FAO data refers to the total internal renewable resources from groundwater from rainfall and internal river flows. Non-renewable sources of water, such as from ice and aquifers, are considered 'stock' and not 'flows.' A country with a high amount of freshwater resources per capita is more resilient to adverse weather events that could stress supplies and affect both the economy and environment.

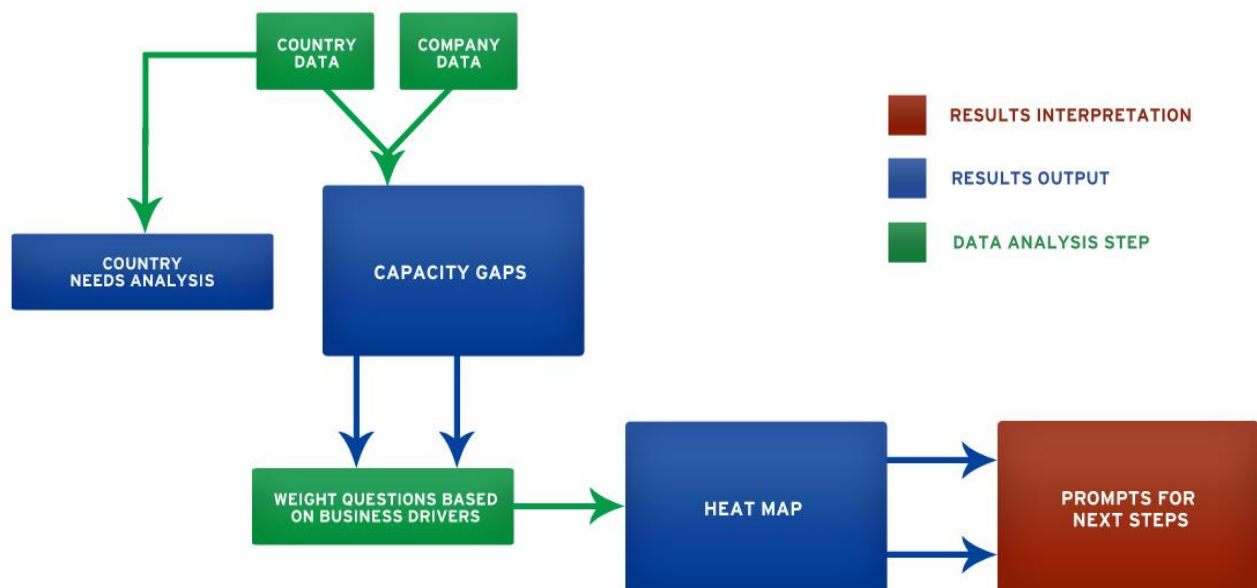
4. User Guide

The following section is an adapted version of the User Guide included in the Social Investment Decision Analysis Tool. The User Guide provides instructions for use of the tool and information as to the outputs produced through the data analysis.

Section 1. Tool Introduction

The Hess Social Investment Decision Analysis Tool is comprised of seven stages. First, three data input stages—1) country data, 2) company data, and 3) business driver ranking—are completed by the user. Next, three result outputs are generated based on the input data. Finally, a table with specific prompts for next steps is used based on resulting outputs. This user guide offers step-by-step instructions for data input and interpretation of resulting outputs. (Please refer to Figure 1 for a visual representation of the seven stages).

Figure 1. Flow diagram of Social Investment Decision Analysis Tool structure



Section 2. User Inputs

Step 1: Input Country Characteristics

The Country Characteristics Input Box is located at the top of the Country Metrics tab. The user enters the name of the country in question as well as the country’s most recent Human Development Index (HDI) Score as shown in Figure 2. The HDI score can be easily obtained by following the link provided—labeled Get HDI Score—and searching for the country in question. Once completed, the resulting HDI category will automatically populate the cell to the right of the Input Box.

Note: The HDI score should be between 0 and 1.

Figure 2. Completed Country Characteristics Input Box

Country Characteristics	
What is the country's name?	Equatorial Guinea
What is the country's most recent HDI score?	0.556 Medium

Step 2: Input Country Data

Six Country Data Input Boxes are located on the Country Metrics tab. Each box corresponds to one of the six social investment categories and is comprised of seven to nine metrics. The user enters data for each of the cells in the value column of all six categories as shown in Figure 3. This data—from the most recent year available—is obtained by following the links provided in the indicator column and searching for the specific country. The value column will shade green as values are input and, from these values, the Overall score will populate automatically.

Note: Values should be entered as shown on corresponding link. If data is unavailable for the country in question, input **n/a**. Reset buttons may be used to clear corresponding Input Boxes.

Figure 3. Completed Country Data Input Box

3. Environment				Reset
Question ID	Value	Unit	Indicator	
3.1	6.7	tonnes	Carbon dioxide emissions per capita (tonnes)	
3.2	n/a	%	Population living on degraded land	
3.3	69		Plant species, threatened	
3.4	5		Bird species, threatened	
3.5	29		Fish species, threatened	
3.6	19		Mammal species, threatened	
3.7	2.8	%	Marine protected areas (of territorial waters)	
3.8	20.6	%	Terrestrial protected areas (of total land area)	
3.9	n/a		CO2 intensity (kg per kg of oil equivalent energy use)	
Overall				59%

Analytical Methods

Data for each metric for all countries was obtained from the United Nations or World Bank data websites and downloaded into an ancillary data analysis tool. This tool automatically sorted the country data into the four HDI cohorts and calculated data count, mean, median, and standard deviation for each. This tool also generated a reference table with +/- 2 standard deviations from the median—calculated at .5 standard deviation intervals—matched with a scoring system ranging from -9 to 9 at multiples of 2 as shown in Figure 4. Reference tables for all metrics were imported into the final model.

As values are entered into the Country Data Input Boxes, the tool references these tables based on the HDI cohort determined in step 1 and selects the corresponding score. Figure 5 is a visual representation of the initial scoring system for a metric where a higher score is more desirable, such as literacy rate. There is an alternative scoring scheme for metrics where a lower value is desirable—such as carbon intensity—with the scores over the distribution reversed across the axis.

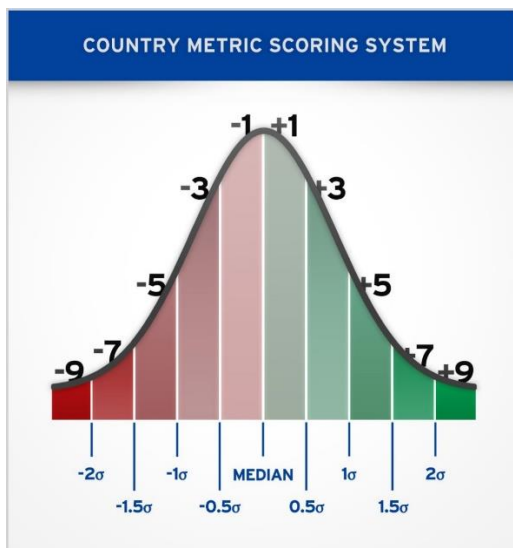
Each metric has a unique number of possible scores for each HDI cohort. For example, adult literacy rate—shown in Figure 4—has seven possible scores for Very High and eight for Medium. In this case, this is due to some values ranging above 100 percent or below 0 percent. These possible score counts act as denominators for each metric. The tool then determines where in

this range the actual value lies and calculates a percentage for each metric with available data. These percentages are weighted evenly and averaged to determine the overall category score.

Figure 4. Reference table example

1.2 Adult Literacy Rate, Both Sexes Age 15 and Over								
	Very High		High		Medium		Low	
-4SD	84.38	-9	71.78	-9	30.63	-9	-9.09	-9
-2SD	91.14	-7	83.44	-7	57.82	-7	25.20	-7
-1.5SD	92.83	-5	86.35	-5	64.61	-5	33.78	-5
-1SD	94.52	-3	89.27	-3	71.41	-3	42.35	-3
-.5SD	96.21	-1	92.18	-1	78.20	-1	50.93	-1
Median	97.90	1	95.10	1	85.00	1	59.50	1
+.5SD	99.59	3	98.02	3	91.80	3	68.07	3
+1SD	101.28	5	100.93	5	98.59	5	76.65	5
+1.5SD	102.97	7	103.85	7	105.39	7	85.22	7
+2SD	104.66	9	106.76	9	112.18	9	93.80	9

Figure 5. Initial metric scoring system



Step 3: Input Company Data

Six Company Data Input Boxes are located on the *Hess Metrics* tab. Each box corresponds to one of the six social investment categories and is comprised of five uniform questions applicable to each category. The user selects a score from the drop-down menus—ranging from 1 to 5—for each question the six categories as shown in Figure 4. A company Question Score Key is located to the right of the Input Boxes to guide responses for each question by defining the 1-to-5 scale scores (refer to Appendix D). As scores are entered, the overall score for the category

will populate. The overall score is calculated by dividing the sum of the responses by the total possible score of 25 to yield a percentage.

Note: Reset buttons may be used to clear corresponding Input Boxes.

Figure 4. Completed Company Data Input Box

1. Education		Reset
Question ID	Question	
1.1	Have projects in education been completed as/or better than initially planned?	5
1.2	Have projects in education been completed on budget?	4
1.3	Have projects in education reached their goal metric?	3
1.4	Have projects in education been completed with local stakeholder satisfaction?	4
1.5	Rate the social impact of projects in education.	3
Overall		76%

Step 4: Rank Business Drivers

The Business Driver Importance Rank Input Box is located at the bottom of the *Hess Metrics* tab. From the drop-down menus, the user ranks the five business drivers with **5 being MOST important and 1 being LEAST important** to activities in the specific country as shown in Figure 5.

Figure 5. Completed Business Driver Importance Rank Input Box

Business Driver Importance Rank		Reset
ID	Question	
1	Minimized risk	4
2	Access to land & resources	3
3	Cost reduction	5
4	Human capital	1
5	Brand value and reputation	2

Section 3. Results and Interpretation

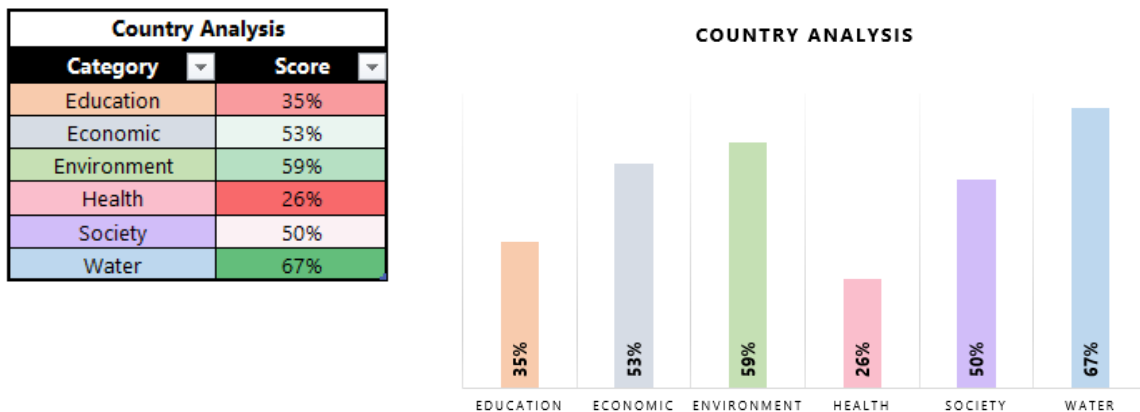
Once the four user input steps are completed, the three-stage analysis results are generated on the 3-Tier Analysis Results tab.

Note: The user may view first-level results after completing steps 1 and 2, second-level results after completing steps 1-3, and third level results after completion of steps 1-4; however, it is recommended that the user complete all steps before viewing the 3-Tier Analysis Results tab.

First Level: Country Analysis

Country Analysis results are located on the 3-Tier Analysis Results tab. Overall scores from the Country Data Input Boxes are represented in table and graph form illustrating the comparison between each category as shown in Figure 6. These results indicate the development (and potential need) of the specific country in each of the six categories relative to peer countries. A lower category score represents less development; a higher category score represents more development.

Figure 6. Country Analysis completed results display

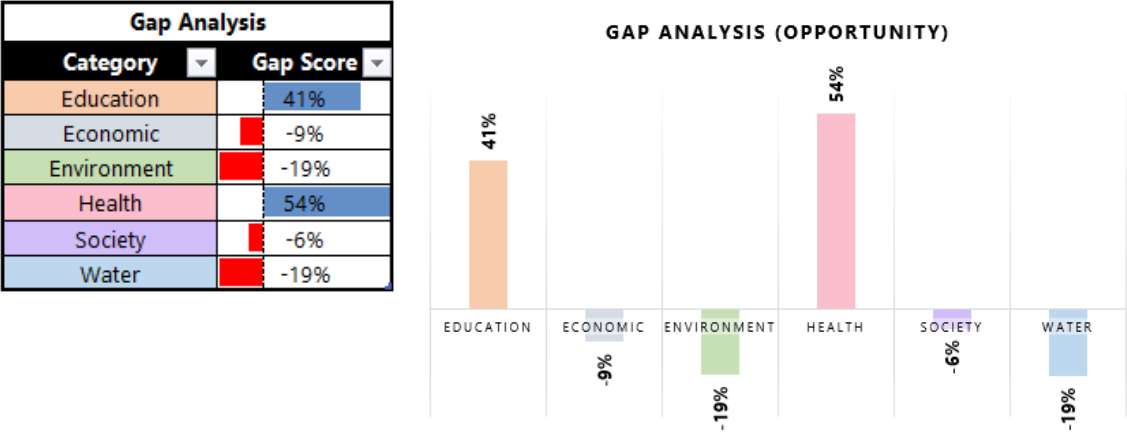


Second Level: Gap Analysis

Gap Analysis results are located on the 3-Tier Analysis Results tab. Overall scores from the Country Data Input Boxes are subtracted from overall scores from the corresponding Company Data Input Boxes to yield a Gap Score. These results are represented in table and graph form to illustrate the comparison between each category as shown in Figure 7. A positive Gap Score indicates that the specific country's development in that category is less than Hess' experience

and expertise in social investment in that category. Conversely, a negative Gap Score indicates that the specific country’s development in that category is greater than Hess’ experience and expertise in that category. Therefore, potential projects in categories with greater positive scores may align well with country-level needs and pre-existing capabilities of Hess.

Figure 7. Gap Analysis completed results display



Third Level: Business Driver Analysis

Business Driver Analysis results are located on the 3-Tier Analysis Results tab. This analysis is visualized with a heat map as shown in Figure 8. The vertical axis is comprised of the ranked business drivers with the lowest-ranked business driver at the top and the highest-ranked business driver at the bottom. The horizontal axis is comprised of the social investment categories, arranged according to Gap Score rankings, with the lowest rank on the left and highest rank on the right. Gap Analysis base scores are normalized to zero for the lowest scoring category and plotted along the top column of the heat map. These scores are scaled linearly with Business Driver importance to populate the table. Higher scores within the heat map indicate Business Driver-Category combinations that may be prioritized for social investment, clustered at the bottom right of the map.

Figure 8. Business Driver Analysis completed results display

		Water	Environment	Economic	Society	Education	Health
Business Driver	Human capital	0.00	0.00	0.09	0.13	0.60	0.73
	Brand value and reputation	0.00	0.00	0.19	0.26	1.20	1.45
	Access to land & resources	0.00	0.00	0.28	0.39	1.80	2.18
	Minimized risk	0.00	0.01	0.37	0.52	2.39	2.91
	Cost reduction	0.00	0.01	0.47	0.65	2.99	3.63

Using the Prompts for Next Steps Table

The Prompts for Next Steps Table is located on the *BD Link* tab. The user sorts the Major Objectives and Social Investment Category columns—highlighted in yellow—based on the high scoring Business Driver-Category combinations yielded from the heat map as shown in Figure 9. Within the table, higher and lower-level objectives relevant to business operations are included. The user identifies a potential opportunity whose outcome may be positively impacted through social investment; as a result, the Direct Investment and Partnership outputs convey guiding prompts and questions. The Direct Investment prompt for a particular opportunity may inform the process in evaluating necessary internal and external conditions, while the Partnership prompt offers potential insight into organizations and institutions with capacity in this area.

Figure 9. Prompts for Next Steps Table with sorting columns highlighted in yellow

Business Drivers			Social Investment Link		Prompts for Developing a Social Investment Strategy	
Major objectives	Higher level objectives	Lower level objectives	Social Investment Category	Social Investment Opportunities	Direct Investment	Partnership
↓ Minimized risk	Stable social environment	Minimal community dependence on operation	↓ Education	Education level achieved	How can citizens become aware of opportunities for higher education? What methods exist for effectively disseminating this information? In terms of culture, is there a perception that educational attainment is incongruous to identity?	Established trade schools and universities; collaborate with international organizations to bring in new programs

Appendices

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B. Summary Statistic Outputs Per Metric

1. Education

1.1	Education index			
HDI Cohort	Very High	High	Medium	Low
Count	49	53	40	42
Std. Dev.	0.07	0.06	0.08	0.08
Mean	0.80	0.68	0.56	0.38
Median	0.81	0.68	0.56	0.37
*Data from UN (2013)				

1.2	Adult literacy rate, both sexes age 15 and older			
HDI Cohort	Very High	High	Medium	Low
Count	23	43	39	40
Std. Dev.	3.38	5.83	13.59	17.15
Mean	96.81	93.96	83.39	58.38
Median	97.90	95.10	85.00	59.50
*Data from UN (2012)				

1.3	Inequality-adjusted education index			
HDI Cohort	Very High	High	Medium	Low
Count	38	37	37	40
Std. Dev.	0.08	0.10	0.12	0.08
Mean	0.77	0.60	0.42	0.25
Median	0.79	0.62	0.39	0.24
*Data from UN (2013)				

1.4	Combined gross enrolment in education			
HDI Cohort	Very High	High	Medium	Low
Count	43	39	31	36
Std. Dev.	8.15	8.00	6.89	11.76
Mean	92.67	80.90	71.84	57.81
Median	92.00	81.00	71.00	58.50
*Data from UN (2012)				

1.5	Expected years of schooling (of children)			
HDI Cohort	Very High	High	Medium	Low
Count	49	53	42	43
Std. Dev.	1.52	1.24	1.16	1.90
Mean	15.90	13.67	11.80	9.21
Median	15.80	13.60	11.70	9.10
*Data from UN (2013)				
1.6	Mean years of schooling (of adults)			
HDI Cohort	Very High	High	Medium	Low
Count	49	53	42	43
Std. Dev.	1.35	1.47	2.06	1.47
Mean	10.95	9.10	6.99	3.84
Median	11.30	8.90	6.55	3.70
*Data from UN (2013)				

1.7	Population with at least secondary education, f/m ratio			
HDI Cohort	Very High	High	Medium	Low
Count	48	46	33	34
Std. Dev.	0.06	0.13	0.22	0.25
Mean	0.98	0.95	0.86	0.55
Median	0.99	0.97	0.90	0.47
*Data from UN (2013)				

1.8	Expenditure on education as a percent of GDP			
HDI Cohort	Very High	High	Medium	Low
Count	47	41	32	37
Std. Dev.	1.80	1.37	2.15	2.34
Mean	5.36	4.26	5.13	4.54
Median	5.40	4.20	5.15	4.60
*Data from UN (2012)				

1.9	Percent primary school teachers trained to teach			
HDI Cohort	Very High	High	Medium	Low
Count	11	31	28	37
Std. Dev.	15.27	20.78	19.58	18.64
Mean	88.91	83.10	84.32	77.32
Median	94.00	90.00	94.50	79.00
*Data from UN (2012)				

2. Economic

2.1	GDP per capita (2011 PPP\$)			
HDI Cohort	Very High	High	Medium	Low
Count	45	51	40	41
Std. Dev.	21327.92	5072.70	6235.33	1462.56
Mean	41541.20	14050.57	7232.65	2082.88
Median	38104.00	13586.00	5640.50	1586.00
*Data from UN (2012)				

2.2	Industry, value added (annual % growth)			
HDI Cohort	Very High	High	Medium	Low
Count	35	43	31	28
Std. Dev.	3.28	5.89	6.39	5.83
Mean	-0.43	2.70	6.29	6.54
Median	-0.32	3.13	5.43	5.53
*Data from WB (2013)				

2.3	GDP growth (annual change)			
HDI Cohort	Very High	High	Medium	Low
Count	45	51	39	42
Std. Dev.	2.37	3.06	3.83	6.88
Mean	1.34	2.47	4.96	3.74
Median	1.63	2.60	5.12	4.74
*Data from WB (2013)				

2.4	Net bilateral aid inflows from DAC donors			
HDI Cohort	Very High	High	Medium	Low
Count	3	45	41	43
Std. Dev.	54774266	528091852	567006823	1018910796
Mean	114503333	311608888	432229268	792554186
Median	113340000	130500000	227600000	466120000
*Data from WB (2012)				

2.5	Market capitalization of listed companies (of GDP)			
HDI Cohort	Very High	High	Medium	Low
Count	45	34	18	10
Std. Dev.	67.75	36.63	40.63	27.47
Mean	64.07	39.17	36.33	33.53
Median	50.87	28.36	21.28	25.27
*Data from WB (2012)				

2.6	Remittance inflows (total compensation received, % GDP)			
HDI Cohort	Very High	High	Medium	Low
Count	40	50	33	33
Std. Dev.	0.98	5.00	10.10	7.27
Mean	0.83	4.33	8.26	5.46
Median	0.41	2.42	4.36	2.00
*Data from UN (2011)				

2.7	Inflation, consumer prices (annual)			
HDI Cohort	Very High	High	Medium	Low
Count	45	51	36	42
Std. Dev.	1.13	7.84	3.03	6.04
Mean	1.53	4.95	5.19	5.99
Median	1.43	2.78	5.66	5.43
*Data from WB (2013)				

2.8	Foreign direct investment, net inflows			
HDI Cohort	Very High	High	Medium	Low
Count	46	53	40	43
Std. Dev.	46901580859	49354702093	5732125517	1809058685
Mean	19974729825	12655715535	2794816710	582325007
Median	3330230497	1599700000	986404067	298256720
*Data from WB (2013)				

2.9	Household final consumption expenditure per capita growth			
HDI Cohort	Very High	High	Medium	Low
Count	37	27	26	22
Std. Dev.	2.41	5.30	34.81	7.75
Mean	0.60	2.65	11.27	2.38
Median	0.29	2.74	3.58	2.13
*Data from WB (2013)				

3. Environment

3.1	Carbon dioxide emissions per capita (tonnes)			
HDI Cohort	Very High	High	Medium	Low
Count	48	53	42	43
Std. Dev.	7.40	5.91	2.24	0.33
Mean	10.34	5.43	1.89	0.31
Median	7.95	4.10	1.05	0.20

*Data from UN (2010)

3.2	Population living on degraded land			
HDI Cohort	Very High	High	Medium	Low
Count	40	38	30	36
Std. Dev.	5.11	8.81	11.98	21.35
Mean	5.09	8.98	13.77	21.85
Median	2.80	5.95	10.10	17.05

*Data from UN (2010)

3.3	Plant species, threatened			
HDI Cohort	Very High	High	Medium	Low
Count	49	53	41	43
Std. Dev.	57.42	284.05	89.45	110.17
Mean	30.39	119.70	56.20	63.70
Median	6.00	16.00	19.00	17.00

*Data from WB (2014)

3.4	Bird species, threatened			
HDI Cohort	Very High	High	Medium	Low
Count	49	53	41	43
Std. Dev.	15.86	30.63	21.77	9.86
Mean	12.65	21.51	19.24	16.93
Median	7.00	10.00	12.00	14.00

*Data from WB (2014)

3.5	Fish species, threatened			
HDI Cohort	Very High	High	Medium	Low
Count	49	53	41	43
Std. Dev.	37.72	30.85	40.49	35.73
Mean	28.31	34.11	33.39	36.44
Median	18.00	22.00	20.00	24.00

*Data from WB (2014)

3.6	Mammal species, threatened			
HDI Cohort	Very High	High	Medium	Low
Count	49	53	41	43
Std. Dev.	11.11	22.96	31.20	18.04
Mean	9.00	17.83	20.56	19.51
Median	5.00	9.00	11.00	13.00
*Data from WB (2014)				

3.7	Marine protected areas (of territorial waters)			
HDI Cohort	Very High	High	Medium	Low
Count	38	37	28	35
Std. Dev.	19.70	17.80	27.44	15.83
Mean	11.86	10.25	15.07	11.98
Median	3.00	2.98	4.08	2.66
*Data from WB (2012)				

3.8	Terrestrial protected areas (of total area)			
HDI Cohort	Very High	High	Medium	Low
Count	49	52	39	42
Std. Dev.	12.00	11.39	11.65	8.83
Mean	22.46	14.20	14.48	11.91
Median	19.86	12.12	10.91	11.22
*Data from WB (2012)				

3.9	CO2 intensity (kg per kg of oil equivalent energy use)			
HDI Cohort	Very High	High	Medium	Low
Count	47	38	29	20
Std. Dev.	0.66	0.68	0.80	0.72
Mean	2.28	2.62	1.98	0.96
Median	2.35	2.56	2.05	0.69
*Data from WB (2010)				

4. Health

4.1	Depth of food deficit (kilocalories per person per day)			
HDI Cohort	Very High	High	Medium	Low
Count	8	39	37	38
Std. Dev.	9.25	41.58	84.02	142.07
Mean	13.25	48.62	105.65	188.45
Median	11.50	40.00	66.00	159.50
*Data from WB (2013)				

4.2	Expenditure on health, total (% of GDP)			
HDI Cohort	Very High	High	Medium	Low
Count	47	53	41	42
Std. Dev.	2.92	1.99	2.51	3.59
Mean	8.32	6.23	6.02	6.92
Median	8.90	5.90	5.40	6.15
*Data from UN (2011)				

4.3	Life expectancy at birth			
HDI Cohort	Very High	High	Medium	Low
Count	49	53	42	43
Std. Dev.	2.86	2.71	5.28	5.75
Mean	79.43	74.08	68.43	58.27
Median	80.50	74.30	68.80	59.30
*Data from UN (2013)				

4.4	Maternal mortality ratio			
HDI Cohort	Very High	High	Medium	Low
Count	46	48	41	43
Std. Dev.	15.05	33.76	125.62	227.17
Mean	13.54	50.06	162.93	460.77
Median	8.00	44.50	100.00	400.00
*Data from UN (2010)				

4.5	Mortality rate under-five (per 1,000 live births)			
HDI Cohort	Very High	High	Medium	Low
Count	47	53	41	43
Std. Dev.	2.77	5.70	19.79	31.29
Mean	5.21	14.53	39.22	85.64
Median	4.20	14.30	36.40	82.90
*Data from WB (2013)				

4.6	Tuberculosis treatment success rate (% of new cases)			
HDI Cohort	Very High	High	Medium	Low
Count	41	52	38	43
Std. Dev.	18.17	11.97	9.96	11.97
Mean	69.95	81.87	83.00	80.35
Median	75.00	84.00	86.00	84.00
*Data from WB (2012)				

4.7	Under-five mortality rate			
HDI Cohort	Very High	High	Medium	Low
Count	47	53	41	43
Std. Dev.	2.77	5.70	19.79	31.29
Mean	5.21	14.53	39.22	85.64
Median	4.20	14.30	36.40	82.90
*Data from WB (2013)				

4.8	Improved sanitation facilities (population with access)			
HDI Cohort	Very High	High	Medium	Low
Count	42	44	40	41
Std. Dev.	1.65	8.24	23.89	17.75
Mean	99.29	89.54	64.73	31.36
Median	100	91.35	64.75	26.70
*Data from UN (2013)				

4.9	Prevalence of HIV, total of population (15-49)			
HDI Cohort	Very High	High	Medium	Low
Count	11	33	31	40
Std. Dev.	0.33	0.66	5.78	5.94
Mean	0.35	0.62	2.73	3.78
Median	0.30	0.40	0.50	1.40
*Data from WB (2013)				

5. Society

5.1	Access to non-solid fuel (% of households)			
HDI Cohort	Very High	High	Medium	Low
Count	47	53	41	43
Std. Dev.	1.16	15.71	28.82	18.94
Mean	94.65	85.37	54.33	19.45
Median	95.00	94.48	50.86	9.15

*Data from WB (2010)

5.2	Homicide rate			
HDI Cohort	Very High	High	Medium	Low
Count	46	49	37	41
Std. Dev.	1.49	12.90	19.15	10.98
Mean	1.65	11.70	12.38	14.63
Median	1.10	4.80	5.40	12.20

*Data from UN (2011)

5.3	Proportion of seats held by women in national parliament (%)			
HDI Cohort	Very High	High	Medium	Low
Count	47	52	40	42
Std. Dev.	11.77	10.76	10.10	13.37
Mean	26.06	17.43	18.83	19.67
Median	25.00	14.60	18.70	19.00

*Data from UN (2014)

5.4	Labor force participation rate			
HDI Cohort	Very High	High	Medium	Low
Count	47	45	40	43
Std. Dev.	0.13	0.19	0.21	0.23
Mean	0.75	0.64	0.67	0.76
Median	0.79	0.69	0.69	0.86

*Data from UN (2012)

5.5	Prison population per 100,000			
HDI Cohort	Very High	High	Medium	Low
Count	49	53	41	41
Std. Dev.	120.75	147.73	87.72	80.57
Mean	155.67	262.11	148.49	82.10
Median	122.00	210.00	130.00	64.00
*Data from UN (2013)				

5.6	Access to electricity (% of population)			
HDI Cohort	Very High	High	Medium	Low
Count	49	53	41	43
Std. Dev.	5.85	13.18	24.87	20.03
Mean	97.90	93.22	73.74	29.32
Median	100.00	99.11	80.98	23.00
*Data from WB (2010)				

5.7	Internet users (per 100 inhabitants)			
HDI Cohort	Very High	High	Medium	Low
Count	49	52	41	43
Std. Dev.	13.53	14.21	14.36	9.25
Mean	77.74	48.79	23.32	9.13
Median	80.00	48.03	17.70	5.40
*Data from WB (2013)				

5.8	Corruption index			
HDI Cohort	Very High	High	Medium	Low
Count	46	45	36	41
Std. Dev.	15.23	13.06	12.13	8.76
Mean	66.78	41.33	34.86	28.29
Median	69.00	38.00	34.50	28.00
*Data from Corruption Index Site (2014)				

5.9	Mobile cellular subscriptions (per 100 people)			
HDI Cohort	Very High	High	Medium	Low
Count	49	53	40	43
Std. Dev.	34.24	27.91	39.23	25.99
Mean	127.53	117.79	101.35	60.51
Median	119.03	115.60	104.10	62.53
*Data from WB (2013)				

6. Water

6.1	Improved water source, rural (population with access)			
HDI Cohort	Very High	High	Medium	Low
Count	44	47	40	42
Std. Dev.	3.32	8.14	15.65	17.36
Mean	98.45	92.03	78.85	59.12
Median	100.00	94.90	82.85	55.80
*Data from WB (2012)				

6.2	Improved water source, urban (population with access)			
HDI Cohort	Very High	High	Medium	Low
Count	46	51	40	41
Std. Dev.	0.71	3.63	4.28	10.45
Mean	99.73	97.42	95.25	86.89
Median	100.00	98.40	96.65	90.90
*Data from WB (2012)				

6.3	Annual freshwater withdrawals, agriculture (% of total withdrawals)			
HDI Cohort	Very High	High	Medium	Low
Count	45	44	36	42
Std. Dev.	31.75	28.80	28.74	31.72
Mean	33.39	53.75	70.84	63.54
Median	28.75	61.20	82.05	76.75
*Data from WB (2013)				

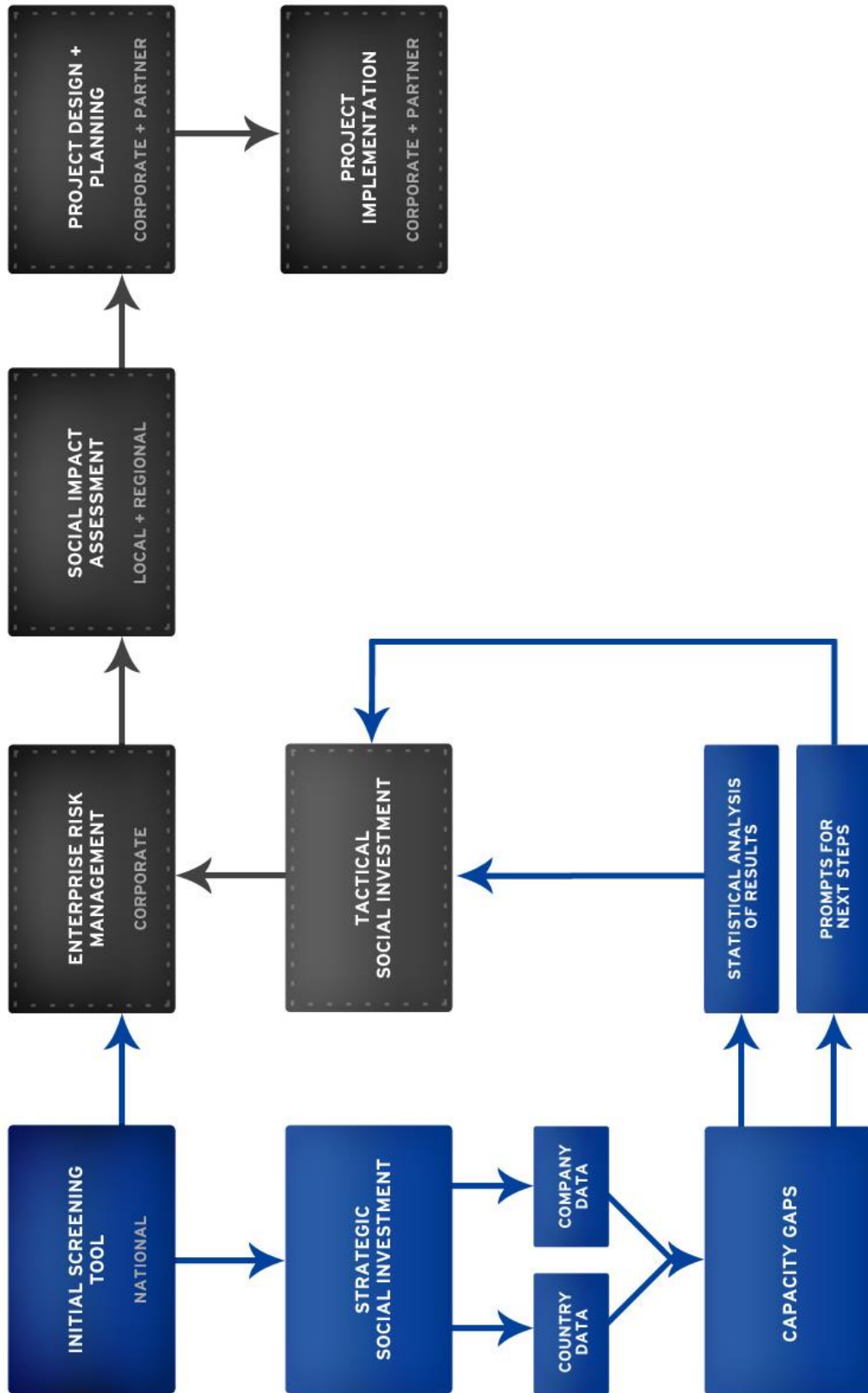
6.4	Annual freshwater withdrawals, domestic (% of total withdrawals)			
HDI Cohort	Very High	High	Medium	Low
Count	44	45	36	42
Std. Dev.	19.02	17.13	22.55	23.02
Mean	28.20	24.70	19.46	26.73
Median	20.76	21.11	9.93	17.98
*Data from WB (2013)				

6.5	Annual freshwater withdrawals, industry (% of total withdrawals)			
HDI Cohort	Very High	High	Medium	Low
Count	44	45	36	42
Std. Dev.	31.78	21.91	14.92	12.24
Mean	37.78	21.58	9.69	9.73
Median	34.38	14.83	4.98	3.70
*Data from WB (2013)				

6.6	Annual freshwater withdrawals, total (% of internal resources)			
HDI Cohort	Very High	High	Medium	Low
Count	45	43	37	42
Std. Dev.	1381.93	97.33	692.54	124.67
Mean	320.45	41.86	188.69	42.72
Median	14.13	17.67	7.33	4.67
*Data from WB (2013)				

6.7	Renewable internal freshwater resources per capita			
HDI Cohort	Very High	High	Medium	Low
Count	47	45	37	43
Std. Dev.	77713.44	29684.58	52995.50	21418.77
Mean	21458.03	14753.88	21523.98	10090.70
Median	3376.82	2890.53	5516.33	1632.84
*Data from WB (2013)				

C. Corporate Structure Flow Diagram



D. Company Question Score Key

COMPANY QUESTION SCORE KEY	
Q1	Have projects in <i>[bracket]</i> been completed as/or better than initially planned? 1 No, projects were not completed 2 No, projects have been completed but with a temporary scope 3 No, projects have been completed but with a reduced scope 4 Yes, projects have been completed as planned with no change in scope 5 Yes, projects have been completed with increased scope from initial plan
Q2	Have projects in <i>[bracket]</i> been completed on budget? 1 No, planned projects started but not completed due to prohibitively high costs 2 No, planned projects started but not completed 3 Yes, planned projects completed but with higher than expected costs 4 Yes, planned projects completed close to expected costs 5 Yes, planned projects completed with lower than expected costs
Q3	Have projects in <i>[bracket]</i> reached their goal metric? 1 No goals were established for the project 2 No, projects have not seen any impact in goal metric 3 No, projects have seen impact in goal metric but not met goal 4 Yes, projects have produced positive impact in goal metric at or near goal 5 Yes, projects have produced positive impact in goal metric exceeding expectations
Q4	Have projects in <i>[bracket]</i> been completed with local stakeholder satisfaction? 1 No, projects not completed and local stakeholders not satisfied or there is no mechanism for stakeholder feedback 2 No, project not completed but no local stakeholder problems 3 Yes, project completed but with some local stakeholder problems or insufficient feedback mechanisms 4 Yes, projects completed with no local stakeholder problems 5 Yes, projects completed with high stakeholder participation and outward approval
Q5	Rate the social impact of projects in <i>[bracket]</i> . 1 No procedure to assess impact 2 Negative impact 3 No impact 4 Positive impact 5 Equal to or exceeding expected goals