



HARVARD Kennedy School

*Corporate Social
Responsibility Initiative*



Building the foundations for a long-term development partnership

The construction phase of the PNG LNG Project

Jane Nelson and Kara Valikai

ACKNOWLEDGEMENTS

The authors are grateful to the numerous people in Papua New Guinea and internationally, in government, business, academia, donor agencies, and civil society, and from ExxonMobil, who have generously shared their insights, experiences and time as we have researched and written this paper. We are especially grateful to Peter Graham, Managing Director of Esso Highlands Limited, ExxonMobil's affiliate in PNG, and his team, who hosted our field visit to PNG and provided information referenced in the report. We would also like to acknowledge the support and feedback of our colleagues at Harvard Kennedy School, especially John Ruggie, Scott Leland, Marli Porth, Peter Harrington, Beth Jenkins, Jennifer Nash, David Plumb, and Alison Beanland.

In 2014, Esso Highlands Ltd (EHL) changed its name to ExxonMobil PNG. This case study covers the period from March 2010 to June 2013 and retains the name EHL that was in use at that time.

Written by Jane Nelson and Kara Valikai

Designed by Alison Beanland

All photos provided by Esso Highlands Limited.

© 2014 by the CSR Initiative at the Harvard Kennedy School

The material in this publication is copyrighted. Quoting, copying, and/or reproducing portions or all of this work is permitted provided the following citation is used:

Nelson, Jane and Kara Valikai (2014). "Building the foundations for a long-term development partnership : The construction phase of the PNG LNG Project." Cambridge, MA: The CSR Initiative at the Harvard Kennedy School.

The views expressed in this paper are those of the authors and do not imply endorsement by the John F. Kennedy School of Government, Harvard University.

Building the foundations for a long-term development partnership

The construction phase of the PNG LNG Project

Executive Summary	4
<hr/>	
I Introduction: A shared leadership responsibility	11
1. PNG's development opportunities and constraints	12
2. Overview of the PNG LNG Project	15
3. Key messages and lessons	23
<hr/>	
II Commitment to rigorous risk management and accountability in PNG	25
1. Adapting internal corporate policies, standards and management systems	27
2. Applying international voluntary principles and standards	29
3. Undertaking systematic and participatory community engagement	31
4. Establishing a community grievance mechanism	34
5. Implementing a comprehensive biodiversity strategy	36
6. Facilitating independent advice, evaluation, monitoring and reporting	38
<hr/>	
III Investment in national content and capacity in PNG	41
1. Investing in local workforce and skills development	44
2. Developing local suppliers and enterprises	46
3. Building the capability and resilience of communities and households	48
4. Promoting women's empowerment	50
5. Strengthening health systems	53
6. Supporting infrastructure development	55
<hr/>	
IV Engagement in cross-sector partnerships and policy dialogue in PNG	57
1. Building strategic partnerships to leverage and sustain results	59
2. Participating in policy dialogue to support the PNG government in strengthening revenue management, development planning and delivery	61
<hr/>	
V Conclusion and recommendations	67
<hr/>	
Appendices	71
<hr/>	
Endnotes	81
<hr/>	
Methodology	83
<hr/>	
References	84
<hr/>	

Large-scale oil, gas and mining projects require substantial investment of financial resources, technology and skills. Such investment carries well-documented risks and benefits.¹ It has the potential to significantly improve economic growth and prosperity for a country and its citizens, while also creating value for project partners and investors. On the other hand, poor management and governance of such investment and of the resource revenues that it generates, can lead to increased macroeconomic instability, corruption, conflict and negative environmental and socio-economic impacts in host countries and communities as well as increased costs, delays and risks for project partners and investors. The core challenge for any government in developing its energy and mineral resources – and for the investors and project operators that it partners with – is to optimize project-related benefits and shared value while identifying, avoiding and mitigating risks and costs.

Primary responsibility for governing project-related benefits and risks rests with government, but investors and project operators play a crucial role in achieving responsible and economically viable natural resource development. This calls for an ability to identify and manage non-technical as well as technical risks. It requires the ability to simultaneously address different types and scale of risk and the interdependencies between them, at both a strategic planning level and through day-to-day implementation of rigorous policies and management systems. It requires a considered and comprehensive approach to engaging with, listening to, and creating shared value for different stakeholders who are contributing to or being affected by the project. Managing diverse risks, engaging with stakeholders and creating shared value depends in turn on the project operator's ability to execute effectively not only in terms of project management but also relationship management. It necessitates the application of international good practices and standards, while being responsive to and realistic about domestic capabilities and constraints.

The PNG LNG Project

The Papua New Guinea Liquefied Natural Gas (PNG LNG) Project provides a germane example of the shared leadership responsibilities, risks and opportunities of developing a complex, integrated project in a challenging context. The Project was approved by the PNG government in December 2009. Construction commenced in March 2010 and the Project is on schedule to start production in 2014. During the projected 30 year production life, it is forecast that over nine trillion cubic feet of gas will be produced and exported to Asian markets.

The Project is the largest capital investment and most complex engineering, construction and production venture undertaken in the country's history, ensuring intense scrutiny of its performance and impact by both supporters and critics. While there are larger and more technically sophisticated LNG projects elsewhere, relatively few have been constructed in such a challenging context or with the potential to have such a substantial impact on the host country's economic growth and long-term development options.

PNG is one of the world's most biologically and linguistically diverse countries, with a dualistic economy and high levels of poverty and inequality. It has been an independent nation for less than 40 years. The country's leaders face the governance challenge of needing to strengthen institutions and infrastructure at all levels – national, provincial and local. They also need to diversify the economy and substantially raise incomes and living standards for the majority of citizens, over 80 percent of whom live in remote rural communities with largely subsistence livelihoods.

The PNG LNG Project is a US\$19 billion capital investment, with the potential to double the country's GDP once operations begin. It spans over 700 kilometers of some of the world's most rugged terrain, and has required the construction of gas production

and processing facilities in PNG's remote Highlands region, onshore and offshore pipelines, liquefaction, storage and marine facilities near the capital of Port Moresby, and the building or reinforcement of physical and communications infrastructure. It has demanded extensive investments in local human capital and in local suppliers, and efforts to help strengthen domestic institutions at the community, provincial and national level.

The Project involves multi-faceted relationships between the PNG government and Esso Highlands Limited (EHL), the Project operator and a fully owned subsidiary of ExxonMobil, together with a variety of other stakeholders. The Project area includes some 60,000 landowners, living in diverse clans representing an estimated 14 different language groups, as well as provincial and local governments in five provinces and nine license areas.² Stakeholders also include some 200 domestic and foreign organizations. These include co-venture partners; engineering, procurement and construction (EPC) contractors; local landowner companies; international financial institutions; donor agencies; research institutes; universities; non-governmental organizations; and community groups.

Given the Project's scale, scope and complexity, the Project team has had to address and continues to face numerous leadership challenges. These have included the need to overcome complex engineering, design, construction, management and financial obstacles as well as tackling a variety of safety, security, human rights, environmental, social, economic and public policy issues. Both the PNG government and EHL are under a spotlight domestically and internationally. They face high expectations and pressure to demonstrate that they are effectively optimizing the Project's shared benefits and opportunities while managing its risks and negative externalities.

Objectives of the case study

The following case study focuses on the first three years of Project construction from March 2010 to June 2013. It reviews some of the internal management systems, stakeholder engagement mechanisms and cross-sector partnerships through which the Project team is implementing international practices and standards within the realities of the PNG context. It aims to provide a broad overview of some of the practical approaches that EHL and its partners have taken to manage Project risks and to create shared value. Most of these approaches are sufficiently complex to warrant a case study in their own right. A great deal of nuance and detail has been sacrificed in providing a broad overview, but the narrative illustrates the diverse and inter-related range of issues that a project operator has to address simultaneously to deliver responsible and economically viable performance. It is aimed primarily at students, practitioners and policy makers.

The case study recognizes that initial exploration work relating to the Project began over 33 years ago. Prior to government approval of the Project in December 2009, it also took several years for the public and private sector partners, funders and customers to negotiate ownership, financing, and sales and marketing agreements, and for the PNG government to negotiate benefit sharing agreements with relevant provincial and local governments and landowners according to PNG law. All of these processes have shaped the contractual, regulatory, political and socio-economic context within which construction is being undertaken. In certain cases they have also created a legacy of divergent expectations and disagreement on what constitutes a fair allocation of Project-related risks and benefits among various stakeholders. A number of research studies, impact assessments and community surveys analyzing these issues have been undertaken over the past decade and they provide useful background for this case study.³

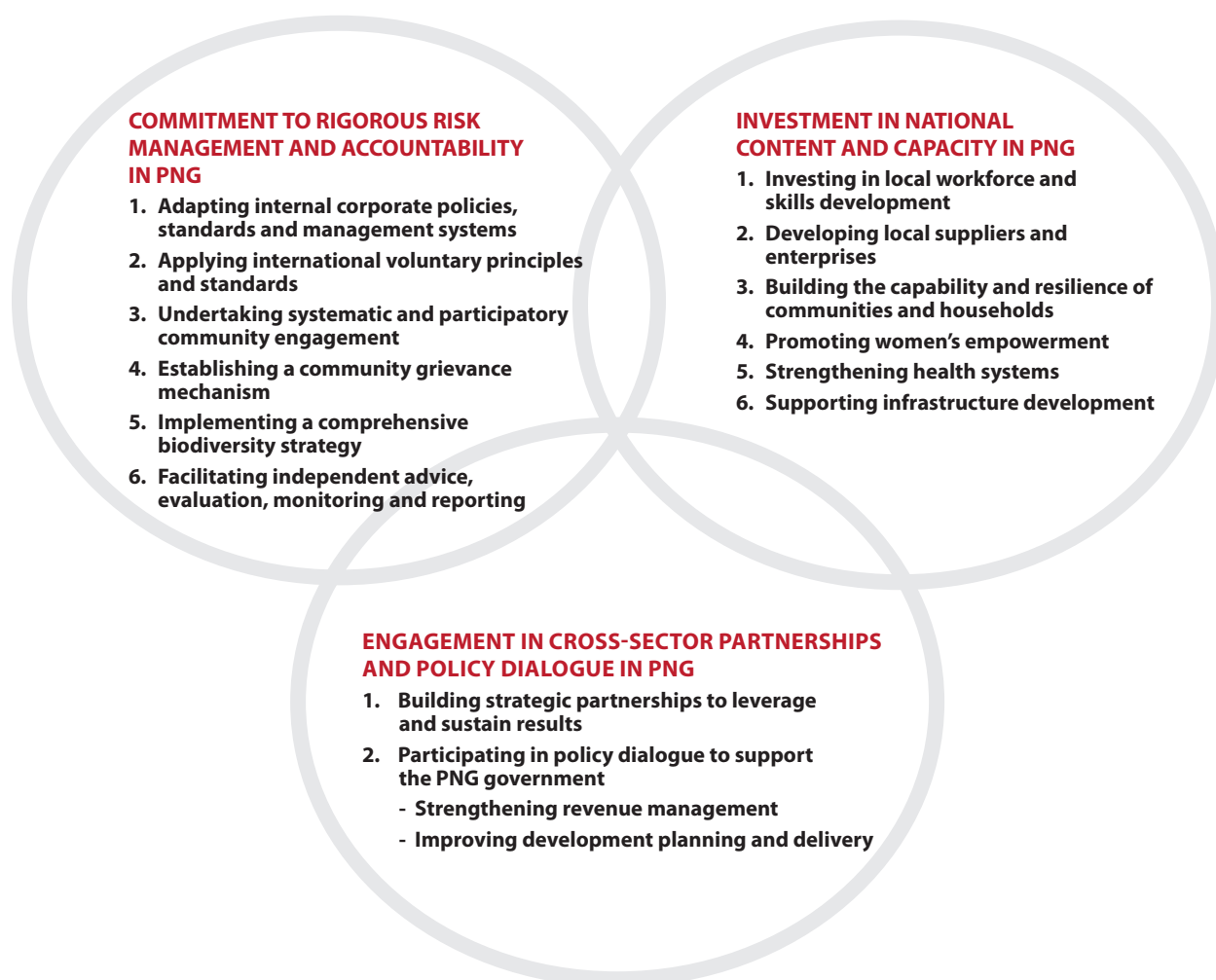
Key messages and lessons

The case study highlights three core messages and a series of underlying lessons or good practices demonstrated by the PNG LNG Project. None of the good practices are ‘new’ in the sense that most of them have become important elements of more responsible and inclusive extractive sector project management over the past two decades. However, being able to implement them effectively in an integrated and multi-dimensional manner within a highly challenging project setting remains a daunting leadership challenge.

The three core messages and some of their underlying lessons and good practices are summarized below and in Diagram 1. All of these messages and lessons require ongoing commitment and leadership by the PNG LNG Project team and by the PNG government as the Project transitions into its production phase. They also have relevance for other operators and policy makers around the world.

KEY MESSAGES		
Message #1 COMMITMENT TO RIGOROUS RISK MANAGEMENT AND ACCOUNTABILITY IN PNG	Message #2 INVESTMENT IN NATIONAL CONTENT AND CAPACITY IN PNG	Message #3 ENGAGEMENT IN CROSS-SECTOR PARTNERSHIPS AND POLICY DIALOGUE IN PNG
<p>The case study illustrates the mutually reinforcing approaches the PNG LNG Project has taken in adapting <i>internal</i> corporate policies, standards, and risk management systems to local context and culture, while also applying and complying with <i>external</i> principles and standards, such as the IFC Performance Standards that have become integral to most large-scale project finance agreements, in addition to host country regulations. It also highlights some models and lessons for achieving more participatory and accountable community engagement, and the value of learning from and working with independent experts and organizations to ensure greater rigor in decision-making and credibility in monitoring performance.</p> <p>The disciplined implementation of international good practices to identify, avoid and mitigate Project-related risks and to measure and report publicly on performance is an essential foundation for building trust with key stakeholders, ensuring accountability, and achieving responsible and economically viable project development. It can be especially important in strengthening local regulatory frameworks and raising business standards where capacity or enforcement is weak.</p>	<p>The case study explores some of the ways in which the PNG LNG Project is enhancing local vocational and workforce skills; developing local suppliers and enterprises; strengthening the capacity of domestic non-governmental organizations, research institutes, public sector institutions, community-based organizations and community leaders; promoting women’s empowerment; and supporting infrastructure development.</p> <p>Investment in local human capital, enterprise development and institutional capacity in host countries and communities is often essential for successful project construction. In addition to the public revenues that a project generates, it is also one of the most significant contributions a large-scale project can make to support longer-term development outcomes. Capital-intensive oil and gas projects do not create a large number of direct jobs once construction is completed, but through their core business operations and social investment programs they can play a valuable role in other aspects of building individual and institutional capacity.</p>	<p>One of the over-arching messages of the PNG LNG case study has been the importance of ongoing engagement and cooperation between EHL and its contractors, different government entities, community-based groups, NGOs, research institutions, other companies, financial institutions, international donor agencies, and the diplomatic community in PNG. In addition to the Project’s community engagement strategy and activities, the case study highlights two other key aspects of stakeholder engagement and cooperation. First, the benefits of building a few strategic cross-sector partnerships, often with non-traditional allies in the public and non-profit sector. Second, the need to participate with other stakeholders in policy dialogues and collective efforts to support the PNG government in improving resource revenue management and the quality of development planning and delivery.</p> <p>Effective trust-based relationship management is as critical as effective technically driven construction management to ensuring that projects are developed in a manner that is responsible and economically viable. This is the case in all major projects, but especially so when an investment is as complex and challenging as PNG LNG, and where there are large gaps in governance, skills, resources and trust between different stakeholders.</p>

Diagram 1: A business framework for responsible project development



Conclusion and recommendations

The PNG LNG Project is nearing completion of the construction phase and is commencing production on schedule in 2014. This is a major milestone and achievement for the Project partners and for PNG. Not surprisingly with an investment of this magnitude and complexity being undertaken in such a challenging context, there are ongoing opportunities for improvement and innovation in many of the areas of activity outlined in the case study. There have been some widely reported negative impacts from construction-related activities at the operational as well as at the macroeconomic level during the first three years of construction. These have included

local-level grievances, work stoppages and conflicts, and some negative macroeconomic impacts on the country's non-resource tradable sector. These, together with foreign exchange issues and higher than normal levels of rainfall, have been contributing factors to a cost increase and construction delays in some sections of the project. Despite these challenges, the Project team has resolved the majority of recorded community grievances and stayed on target for the overall construction schedule through effective re-sequencing work and disciplined project management. The Project team has also demonstrated measurable results in terms of risk management and

environmental and social compliance, as reported by the independent consultant appointed by the financial institutions that provided project financing. In particular, the independent consultant has cited the Project's worker safety, occupational health, and waste management programs as being examples of "best" practice.⁴ In addition, the Project has made numerous investments in local human capital and enterprise development, community investment, infrastructure, and institutional capacity building. After three years of construction the Project can point to significant achievements in managing shared risks, creating shared value and helping to build a foundation for the achievement of broader development benefits.

The Project's long-term impact on economic growth and development will depend largely on how the government of PNG manages the substantial resource revenues that will start to flow once production commences. This will require government bodies at all levels to dramatically improve their track record on resource revenue management and broader development planning and delivery. At the same time, EHL and its contractors will continue to face a high level of scrutiny and expectations in terms of their ability to effectively engage with stakeholders, manage Project-related risks, ensure accountability, and optimize local benefits and opportunities. These will be important as the Project transitions from construction to production and then throughout the anticipated 30 years of operation and ultimately during the decommissioning phase.

As with many other resource-rich countries, PNG's track record for effective resource revenue management has been mixed over past decades. As such, the Project is a test not just of whether large-scale projects can be mutually beneficial under challenging conditions, but also whether the country has learned from previous mistakes that have been made in developing and governing its natural resources. There are reasons to be cautiously optimistic. These include improvements

made by the PNG government in a number of areas over the past decade, such as greater fiscal discipline and commitment to revenue transparency, although well-documented challenges remain in the areas of revenue management, development planning and delivery. The growing number and effectiveness of multi-stakeholder dialogues and cross-sector partnerships is another reason to be optimistic. Robust dialogue and debate have long been a feature of PNG's society and culture, but more structured models of multi-stakeholder dialogue and partnerships are also emerging. They are being driven by a variety of public, private and civil society leaders, including the PNG LNG Project. They will remain essential to ensuring the longer-term success of the Project and its contribution to more inclusive and sustainable development in Papua New Guinea, as well as the development impact of the extractive sector more broadly.

The following recommendations draw on the experience and lessons of the Project to date, but are aimed to be relevant more broadly for project operators, contractors, governments, and intergovernmental development agencies around the world. They also remain highly relevant for PNG.

Almost all of these recommendations call for policy makers, corporate executives, and civil society leaders to operate in non-traditional ways, often working with non-traditional partners. Such approaches will be increasingly important to meet the business challenges, energy needs, and development imperatives of the future. The individuals and institutions that operate in or focus on the energy sector and on the benefits and risks of developing large-scale energy projects will play an increasingly vital leadership role in shaping the development prospects of resource-rich countries and communities. As Ban Ki-moon, the United Nations Secretary-General, has noted, "From job creation to economic development, from security concerns to the status of women, energy lies at the heart of all countries' core interests."⁵

RECOMMENDATIONS FOR PROJECT OPERATORS AND CONTRACTORS

1. CONTINUOUSLY IMPROVE RISK MANAGEMENT, ACCOUNTABILITY AND LOCAL CONTENT DEVELOPMENT

Continuously improve internal management systems to identify, avoid and mitigate risks

The core responsibility of project operators is to deliver projects safely, per specifications on budget and on schedule in a manner that avoids or mitigates project-related social, environmental, ethical and human rights risks to stakeholders. This requires implementation of corporate level policies and standards supported by operational-level management systems, training and incentive structures that embed the company's commitment across the entire organization. It requires rigorous data collection and evidence-based processes to establish credible baselines and to identify and assess actual and potential risks and negative externalities, management plans to integrate these findings into operations and decision-making processes, and mechanisms for tracking, monitoring and reporting on performance.

Establish early and transparent community engagement processes and grievance mechanisms

Effective community engagement processes and mechanisms are essential for identifying and mitigating risks, building trust and legitimacy and responding to and remediating community grievances before they escalate into conflict. Useful guidelines on effective community engagement and grievance mechanisms are available through IFC's CommDev program, IPIECA, ICMM and the Shift Project, among others.

Develop a strategy for building human capital and local content through core business activities and social investment

All major project operators should develop national or local content plans, which set explicit definitions and targets for how they can harness both their core business competencies and value chains and their social investment or philanthropic foundations to help build local human capital, promote women's empowerment, support local enterprise development, invest in infrastructure, and help governments and other development partners to strengthen institutional capacity in their host countries and communities.

Report publicly on progress and allow independent monitoring and evaluation

In addition to corporate-level corporate citizenship or sustainability reports, there will be increasing pressure on large companies to be more transparent in disclosing their socio-economic, environmental and human rights performance at a country level or even project level. The use of independent monitoring and/or assurance and verification can add further legitimacy and credibility to this process. An example of such reporting is the approach taken by the PNG LNG Project – in accordance with the loan requirements stipulated by the Lender Group – of producing a quarterly report itself, in addition to facilitating regular environmental and social compliance monitoring by an independent third-party appointed by the project lenders. This is becoming increasingly standard practice in major projects, but can be especially valuable in situations where public transparency and corporate disclosure are still relatively weak.

2. PARTNER WITH HOST GOVERNMENTS AND OTHER STAKEHOLDERS TO ENHANCE DEVELOPMENT PLANNING AND OUTCOMES

Invest in strategic development partnerships

There is enormous potential for project operators to identify a small number of strategic partners to help them leverage resources, increase legitimacy, scale impact, and improve development outcomes in programs that are strategically important to achieving the company's risk management and shared value objectives. These partners can range from NGOs to donor agencies and public entities. They can also include business-to-business partnerships. Oil, gas and mining companies, for example, could explore partnering with information technology and mobile banking companies or with healthcare and agribusiness companies to be more effective in implementing their community investment and regional development projects.

Participate actively in multi-stakeholder platforms and collective action

Large-scale project operators should play an active and transparent role participating in country-level multi-stakeholder platforms, public policy dialogues and government advisory councils so that they can improve the broader enabling environment for both business and more inclusive and sustainable development. Where relevant, they should be advocates for the national implementation of global principles and standards such as the Extractive Industries Transparency Initiative; the Voluntary Principles on Security and Human Rights; the UN Guiding Principles on Business and Human Rights; and relevant industry-wide guidelines and technical standards on key social, environmental and ethical issues.

CONTINUED

RECOMMENDATIONS FOR PROJECT OPERATORS AND CONTRACTORS *continued***3. DEVELOP MULTI-DISCIPLINARY LEADERSHIP SKILLS****Train future leaders in all sectors who have a holistic view of how the private sector fits into and impacts a country's development agenda**

There is a growing need for engineers to also understand development challenges, for business leaders to be more politically savvy, and for financial executives to integrate non-financial risks and opportunities into their analysis and decision-making. Increasingly, large companies operating in complex industries and in challenging environments need cross-boundary leaders who are comfortable operating not only across cultural and national boundaries, but also across different sector and functional boundaries. Efforts should be made to identify and train such leaders at the corporate, country and project-level. In addition, by setting high standards of competency and professional conduct, companies can nurture the development of host government, local business and civil society leaders who can then more effectively articulate and implement a sound vision and strategy for inclusive and sustainable development.

RECOMMENDATIONS FOR GOVERNMENTS AND DONOR AGENCIES**1. STRENGTHEN RESOURCE REVENUE MANAGEMENT****Take a comprehensive approach to improve resource revenue management at the national, regional and local level**

The core responsibility of governments in resource-rich countries is to create an enabling environment for rule of law, sound macroeconomic policies, and anti-corruption efforts broadly, and effective oil, gas and mining legislation, inclusive benefit sharing agreements, and transparent, effective and accountable resource revenue management more specifically. Resource-rich governments should set ambitious goals to improve revenue management and report publicly on progress, starting at the national level, but also focusing on regional and local government. In addition to adhering to their international legal obligations (including under human rights treaties and anti-corruption conventions they have ratified), governments should also make explicit public commitments to adhere to relevant international voluntary principles and standards. Examples include the Extractive Industries Transparency Initiative, the Voluntary Principles for Security and Human Rights, and the UN Guiding Principles on Business and Human Rights.

Work with donor agencies and NGOs to build knowledge and capacity

Donor agencies and research and training institutions can do more to support governments in building their analytical and management capacity to improve resource governance. Useful guidelines and benchmarks are available through initiatives such as the Natural Resource Charter, the Resource Governance Index and Revenue Watch, the Chatham House project on oil governance, and the Norwegian Government's Oil for Development Initiative.

2. WORK WITH THE PRIVATE SECTOR TO IMPROVE DEVELOPMENT OUTCOMES**Support public-private partnerships targeted at specific development challenges**

Governments and donors should create platforms and partnerships at a national or sector level that bring together leading companies, NGOs, foundations, research institutes and donors that have a shared interest in improved resource revenue management and/or better development planning and execution. The creation of multi-stakeholder structures in some countries to shape and implement the Extractive Industries Transparency Initiative offers a useful model. In a growing number of countries, there are also public-private partnerships focused on tackling specific development challenges such as vocational training; women's empowerment; support for small and micro-enterprise development; access to education; improved access to health and nutrition; and anti-corruption efforts. Project operators often need to invest significantly in these areas upfront, but should have plans in place from the outset to work closely with and to build the capacity of host governments and other domestic partners to deliver over the longer term.

Promote gender equality in the extractive sector

There is growing evidence that greater gender equality is essential for tackling some of the negative social and economic impacts of large-scale projects, and for driving more inclusive and sustainable growth more broadly. Governments should partner with companies and business associations in the extractive sector, and with donors and NGOs that have experience and programs in this area (such as the World Bank, the Australian, Canadian and Norwegian bilateral development agencies, regional development banks, Oxfam and CARE) to support research and projects aimed at improving women's empowerment, including access to education and livelihood opportunities.



I Introduction: A shared leadership responsibility

Introduction: A shared leadership responsibility

The development of large-scale energy projects has a major impact on the economies, natural environments, and social as well as political contexts of resource-rich countries and communities. This impact can be immensely positive or negative, depending on how these projects are governed and implemented. The opportunities and risks are particularly notable in developing countries where governance institutions, public sector delivery capacity, and local skills and management capabilities are often weak, and where a growing number of oil and gas projects are being undertaken, often in remote and undeveloped regions of the country. The governments, operators and financial institutions that implement these large-scale projects share a core leadership challenge: *How to develop and govern energy resources in a manner that drives more inclusive and sustained economic opportunity and social progress for the country's citizens, especially those people living in project areas, while respecting human rights and avoiding or mitigating macroeconomic instability, corruption, increased rent-seeking, poverty, conflict, and environmental damage that can result directly and indirectly from large-scale projects.*

Governments have primary responsibility for the manner in which their nation's energy resources are developed and governed. At the same time, project operators and funders play a crucial role in mitigating shared risks and creating shared value. As the Natural Resource Charter states: "...[T]he most important decisions rest with the governments of resource-rich countries, since they have both the sovereign right and the moral responsibility to harness natural wealth for the benefit of their peoples. Nonetheless, resource companies, their home governments, and financial centers do play a critical role in supporting or weakening effective policy."⁶

The Papua New Guinea Liquefied Natural Gas (PNG LNG) Project provides a germane example of the shared leadership responsibilities, risks and opportunities

of developing a complex, integrated project in a challenging operating context. The following case study focuses on the first three years of Project construction. It highlights three key messages for policy makers and project partners around the world, and identifies lessons and areas of good practice that have growing relevance for all major energy projects. Underpinning these messages and lessons is the importance of stakeholder engagement, dialogue, and cross-sector partnership among the Project operator, its contractors and financiers, different levels of government, local communities, independent consultants and research institutes, and non-governmental organizations. Visible and sustained individual leadership by senior executives and policy makers is also an essential factor in driving progress and building trust and credibility among Project partners, key stakeholders and the general public.

This section outlines some of PNG's key development opportunities and constraints. It provides a brief overview of the PNG LNG Project, and introduces a 'Business Framework for Responsible Project Development'. The framework is then used in subsequent sections of the report to review some of the ways in which the Project team is taking a disciplined approach to implement international practices and standards within the realities and constraints of the PNG operating context.

1. PNG's development opportunities and constraints

Papua New Guinea is located in proximity to some of the world's fastest growing economies and emerging middle class populations and is home to a diverse and rich natural resource base capable of supporting multiple industries. Yet, after almost 40 years of independence and despite high levels of commodity-driven economic growth and exports over the past decade alongside long-term donor assistance, PNG languishes in the bottom quartile of the 2013 United Nations Human Development Index, the 2013

Resource Governance Index, the World Bank's 2013 Doing Business report, and the 2012 Transparency International Corruption Perceptions Index. It has one of the highest poverty rates in the Asia Pacific region and is one of a few countries that is not on track to meet any of the Millennium Development Goals.⁷

PNG's development challenges have been well documented. They can be summarized as high levels of complexity, duality and inequality underpinned or exacerbated by lack of individual, institutional and infrastructure capacity in both the public and private sector.

High levels of complexity, duality and inequality

There are few countries in the world, especially of equivalent landmass and population size, that can match the geographical, ecological, linguistic and cultural complexity of Papua New Guinea.

A complex natural environment: In a landmass of some 178,473 square miles, PNG has some of the most rugged, seismically active, densely vegetated, difficult to traverse, and unexplored terrain still in existence on earth. It is home to between five and ten percent of the world's plant and animal species on less than one percent of its land surface, and is part of the world's third largest block of unbroken tropical rainforest. The country also has widespread deposits of oil, gas, copper, gold, nickel and other minerals, with high exploration and development potential, and good conditions for agriculture, fisheries, forestry and tourism, all of which are currently untapped or underdeveloped due to a combination of political risk, weak law and order, and inadequate human capital, infrastructure and institutional capacity. A key development challenge is how to commercially develop these rich and often remotely located natural resources without destroying the country's equally rich biodiversity and ecosystems services, and to do so in a way that transforms the resulting revenues into improved standards of living and opportunities for PNG's citizens, not only a small elite.

A complex cultural context: The country's seven million citizens speak more than 840 distinct languages (this accounts for about ten percent of the world's languages). They retain strong identity and kinship ties to a similar number of small clans and kinship (*wontok*) networks, each with their own long-standing traditions, close connection to the land, and constitutional rights in PNG's National Constitution. More than 97 percent of land is under customary ownership. The strong kinship ties have played an important role traditionally in building social capital and resilience within many communities. They have also been an underlying cause of chronic low-level conflict between communities in certain regions of the country, including some of the provinces where the Project is being developed. This, together with lack of formal land registration and inadequate social mapping makes the acquisition of and compensation for land a time-consuming, costly and often contested process.

A dualistic economy: The World Bank states, "PNG's economy is dualistic along several dimensions: there is a sharp rural-urban divide, the extractives economy dominates the small non-minerals formal sector, and the contribution and productivity of women is sharply constrained compared to men."⁸ Some 80 percent of the population still lives in remote rural areas and in a largely informal and subsistence agricultural economy based on food production and petty trade. At the same time, the country's formal economy, driven mainly by capital-intensive mining, oil and gas projects, labor-intensive commercial agriculture, and a small manufacturing, services and retail sector, has recorded some of the world's highest economic growth rates over the past decade, although these are slowing. A key challenge is managing public expectations of job creation and livelihood opportunities in the high-profile extractive sector, which offers large capital investments and public revenues but low labor intensity, especially in the case of petroleum projects once the relatively short project construction period is complete.

An unequal society: This dualistic economic system combined with weak public service delivery and capacity sustains high levels of inequality between urban and rural areas and among men, women and youth. Women in particular suffer from poor access to healthcare, education, training, credit, economic opportunities and legal protection. Gender inequality and the patriarchal nature of PNG's political and economic power structures are a serious impediment to development in many parts of country, including the areas where the Project is being developed. They retard inclusive growth, undermine human capital, increase demographic burdens and perpetuate various behaviors that are highly problematic, including violence against women and conflict more broadly. A growing youth bulge is creating further pressures in terms of the need to provide adequate access to social services and to employment and livelihood opportunities. Inequality is also exacerbated by corruption and by the patronage system that characterizes almost all aspects of the country's politics and government spending.

Low levels of individual, institutional and infrastructure capacity

Lack of human capital and weak planning and implementation capacity are major impediments to overcoming the geographic, cultural and structural challenges outlined above. This includes lack of capacity at the level of both individuals and institutions, as well as in physical and communications infrastructure. Capacity constraints are a particular challenge in several of the provinces where the Project is being developed. Southern Highlands, for example, has faced a longstanding challenge of having weak governance and in some cases no effective functioning provincial government. This in turn has exacerbated problems of inadequate public service delivery, weak law and order, contested election results, and conflict in the province. Governance structures have improved in recent years, but serious capacity constraints persist and are a major impediment to effective decentralization and benefit sharing between national and provincial government.

Drawing on an extensive consultative process undertaken in 2011 and 2012, the Asian Development Bank provides a useful framework and set of policy options for categorizing and tackling some of the country's most serious and systemic capacity constraints.⁹ These can be summarized as follows:

- Addressing weaknesses in governance and institutions, particularly relating to delivery of public services, maintaining law and order, controlling corruption, and managing land and land titles;
- Improving infrastructure and infrastructure services, particularly in the case of transport, electricity and water supply;
- Overcoming shortages of skilled human capital, and poor and unequal access to affordable and quality education;
- Tackling the lack of and unequal access to affordable and quality health services.

Overcoming PNG's development constraints is first and foremost the responsibility of its government at all levels, with support from development agencies and donors. The World Bank has prioritized three strategic pillars for action: 1) increased and more gender equitable access to physical and financial infrastructure; 2) gender-equitable improvements in lives and livelihoods; and 3) increasingly prudent management of revenues and benefits, especially from oil, gas and mining. The Australian Aid Programme, the largest bilateral donor to PNG, has agreed the following priorities with the government: 1) education; 2) health and HIV/AIDS; 3) law and justice; and 4) transport infrastructure.

At the same time, there is a compelling business case for pro-active engagement by corporate leaders, especially those leading large companies and resource projects in oil, gas, mining and agriculture. As the largest capital investment in the country's history, the PNG LNG Project has a particularly important, high-profile and challenging leadership role to play.

Diagram 2: Overview of PNG LNG Project area



- Hides, Angore and Juha gas fields anchor the development
- Gas blowdown from existing Agogo, Kutubu and Gobe oil fields
- Additional phases including booster compression and Juha production
- Gas conditioning plant at Hides, 960 Mscf/d capacity
- 292 km onshore and 407 km offshore gas pipeline
- Condensate exported via existing Kutubu crude oil export system
- 6.9 MTA LNG Plant 20 km from Port Moresby, 2 processing trains

2. Overview of the PNG LNG Project

The Papua New Guinean government approved the PNG LNG Project in December 2009. Construction commenced in March 2010, and the Project is starting production in 2014. During the projected 30 year production life, it is forecast that over nine trillion cubic feet of gas will be produced and exported to Asian markets.

A large-scale and complex integrated investment

There are larger and more technically sophisticated liquefied natural gas projects elsewhere in the world, but there are few that have been developed in such a complex and challenging operating environment or with the potential to have such a substantial impact on the host country's economic growth and long-term development options. As ExxonMobil has stated, "Papua New Guinea is one of the least explored countries on earth, largely due to its rugged, mountainous terrain and dense vegetation. It is also a nation of rich biodiversity and distinctive

cultures of people who are closely linked to the natural environment. This environment, as well as the complexity, scale and scope of the PNG LNG Project, make it one of the most challenging projects ever undertaken in our industry."¹⁰

The Project involves a US\$19 billion capital investment, with the potential to double the country's GDP once operations begin. It spans over 700 kilometers of some of the world's most rugged terrain from the remote, densely vegetated, high rainfall and mountainous Highlands region in central PNG to the coast, 20 kilometers outside the country's capital city, Port Moresby. It operates across five different political provinces (Western, Southern Highlands, Hela, Gulf, and Central Provinces), ten local level government jurisdictions, and a diverse range of economic, cultural, topographical, climatic and ecological conditions. As illustrated in Diagram 2, it has included the construction of:

- Production and gas processing facilities
- Onshore and offshore pipelines

- Liquefaction, storage and marine offloading facilities
- Infrastructure to support construction.

Although the four-year construction phase is short relative to the overall life of the Project, the manner in which it is managed is crucial to determining long-term success. This is clearly the case in terms of achieving the engineering and design specifications required for operational excellence and high levels of production safety and productivity. It is also important in terms of building stakeholder relationships and trust, establishing robust local management systems, standards and corporate culture, and developing the capacity of Papua New Guinean individuals and institutions to ensure a solid foundation for future operations.

Diverse partners and stakeholders

The PNG LNG Project involves a multi-faceted set of relationships. At its core is the relationship between the government of Papua New Guinea and Esso Highlands Limited (EHL), together with local and provincial government entities spanning five different provinces. Other relationships vital to safe and successful project execution include a diverse array of public and private co-venture partners; public and commercial project finance institutions; multinational engineering, procurement and construction contractors; landowners; and several hundred national and foreign organizations that include public sector entities, private enterprises, and civil society organizations. Key groups of stakeholders include:

- **Co-Venture Partners:** The Project is being developed by a group of seven public and private, national and foreign co-venture partners. The Project partners are as follows, with their ownership share provided in parentheses: Esso Highlands Limited, a subsidiary of ExxonMobil Corporation (33.2%); Oil Search Limited (29.0%); National Petroleum Company of PNG (Kroton) Limited (16.6%); Santos

Limited (13.5%); JX Nippon Oil and Gas Exploration Corporation (4.7%); Mineral Resource Development Company Limited (2.8%); and Petromin PNG Holdings Limited (0.2%).

- **Project area stakeholders:** There are some 60,000 landowners living in the Project area in diverse clans representing an estimated 14 different language groups. There are also local and provincial governments spanning five politically and economically diverse Provinces and nine License Areas. All of these groups (landowners, provincial and local-level governments) are represented in the PNG LNG Project Benefit Sharing Agreements (BSAs) that have been negotiated by the national government according to PNG Law. Neither the Project consortium or EHL is a signatory to or participant in these agreements.
- **Lender Group:** A public-private Lender Group consisting of ExxonMobil, six public sector export credit agencies (ECAs), and 17 commercial banks from Australia, China, Italy, Japan, Norway, the United Kingdom and the United States is providing project finance. At the time of its completion in late 2009, during the height of the global financial crisis, the original project financing agreement of US\$15.7 billion was the world's largest ever project finance deal in the energy sector. It was recognized in a number of international capital markets and project finance awards for the manner in which it was negotiated and structured. The Lender Group has appointed the engineering and scientific consulting firm D'Appolonia S.p.A. to carry out independent environmental and social compliance monitoring of the Project's performance.¹¹

- **Contractors:** The Project team has appointed eight engineering, procurement and construction (EPC) contractors, all of which are either large national or multinational companies or joint ventures from seven different countries. Several of these companies have more than 50 years of operating experience. In addition to meeting the safety, health, social and environmental standards and the national content requirements stipulated by EHL, the EPC contractors also have their own policies, standards, and management systems to address these issues. This offers potential opportunities for shared learning and continuous improvement, as well as different levels of risk management.
- **Local suppliers and landowner companies (Lancos):** The Project has helped to establish an independently run Enterprise Centre in association with the PNG Institute of Banking and Business Management. The center has interacted with more than 15,200 entrepreneurs and provided capacity building support for more than 1,500 local businesses to be registered as suppliers. The PNG LNG Project is also working with and helping to build the capacity of two umbrella Landowner Companies (Lancos), which supply about 70 percent of the local workforce to the Project and provide other products and services. Lancos are registered business entities that represent individuals or groups of landowners living in designated resource project areas in PNG. They provide a mechanism for local entrepreneurs and businesses to compete for direct and indirect employment opportunities and for income-generating activities associated with resource development projects.
- **Workforce:** At the height of construction in late 2012, the workforce reached 21,220 people. Some 40 percent were PNG citizens, with a number of them entering the formal employment sector for the first time. The fulltime workforce, including expatriates and PNG staff, is projected to be 1,200 once the asset enters production. A priority for the PNG government and Project partners is to manage the economic and social implications of this job transition by exploring other formal sector options for newly trained construction workers.
- **Civil society:** During the past three years, the Project team has engaged with more than 200 local, regional, national and international civil society organizations. These include research institutes and universities, business associations, faith groups, non-governmental organizations, and community-based networks, especially women's and youth groups. Engagement with civil society has ranged from informal meetings to formal consultation processes, training and capacity building programs, partnership agreements, and the establishment of an operational-level community grievance mechanism.
- **Future customers:** Once operations commence in 2014, the PNG LNG Project will be supplying gas to four major LNG customers in Asia: China Petroleum and Chemical Corporation (Sinopec), The Tokyo Electric Power Company Inc., Osaka Gas Company Limited, and the Chinese Petroleum Company from Taiwan. Sales and marketing agreements were signed with these customers at the outset of the Project.

This diverse ecosystem of Project stakeholders creates a dynamic and interactive set of checks and balances on the Project's economic, social and environmental performance, in addition to the regulatory environment. It also creates a community of existing and potential partners that can help to leverage resources, and to scale and sustain the development impact of the Project.

Substantial benefits, risks and leadership challenges

Construction activities of the Project have provided benefits in a number of areas, with the future return on Project investments poised to yield significant benefits for PNG, the provinces and communities within which the Project is located, destination markets, and financial and co-venture partners. The Project also faces numerous risks and leadership challenges. These have ranged from the need to overcome complex engineering, design, construction, management and financial obstacles to tackling a variety of safety, security, human rights, environmental, social, microeconomic, macroeconomic and public policy issues. Many, though not all, of these risks have been addressed by the Project team over the past five to six years through disciplined implementation of internal corporate risk management policies, standards and systems by the Project operator and its eight EPC contractors; compliance with government regulations and international lender requirements; and ongoing stakeholder engagement and extensive investments in local human capital, corporate culture and institutions.

Table 1 provides a broad overview of existing and potential Project benefits, risks and challenges. There is much debate over which stakeholders are likely to gain the greatest benefits and bear the greatest risks, both within PNG and externally. For example:

- The economic impact study carried out by ACIL Tasman for the Project in 2008, concluded: "... [T]he LNG Project will have a profound effect on the PNG economy. A project of such size (relative to the economy as a whole) will inevitably create some stresses and strains across the economy. However the net benefits arising from the project will be very large provided the potential adverse pressures on some sectors of the economy are properly managed. Responsible government expenditure policies and strong governance will be required to ensure that the large economic gains from the project translate

into equivalent socio-economic development for the nation as a whole."¹²

- A subsequent 2010 academic study published by the Economic Society of Australia concluded, "While the LNG Project is highly significant for the PNG economy, care must be taken not to exaggerate its effects and create false expectations. In popular discussions, emphasis is often placed on gross domestic product (GDP) effects. ...Attention should be concentrated on the effects on gross national product (GNP) and the consequent potential for increases in public and private consumption."¹³
- A 2012 report by Jubilee Australia concluded: "...the context, the timing, and the negotiation processes surrounding PNG LNG have resulted in the greatest risks of this Project being borne by the people of PNG. The greatest benefits will be accrued by the foreign actors who are developing these gas reserves for their own ends."¹⁴

Three years into construction of what will likely be a 30 year production life, it is still too early to draw definite conclusions. There will continue to be differing views on the allocation of Project risks and benefits. Not surprisingly with an investment of this magnitude and complexity being undertaken in such a challenging context, there are ongoing opportunities for improvement and innovation in most of the areas of activity outlined in the case study. There have also been some well-reported negative impacts from construction-related activities at the operational as well as at the macroeconomic level. At the same time, the Project operator can point to significant achievements in risk management and value creation over the past three years, and in helping to create a foundation for long-term development benefits. Going forward, much will depend on how the PNG government manages the public revenues that will start to flow once production commences. This will require it to dramatically improve its track record on resource revenue management and broader development planning and delivery.

Table 1: Overview of existing and potential benefits and risks from the construction phase of the PNG LNG Project (As of June 2013)

EXISTING AND POTENTIAL BENEFITS RESULTING FROM THE PROJECT	
Capital investment, taxes, royalties, equity dividends, export revenues	The largest financial flows and benefits associated with the Project derive from the capital investment of US\$19 billion and the production revenues (royalties, development levies, equity benefits, and project grants) that will be generated once operations commence. The manner in which the risks and returns associated with these investments and revenues are distributed between domestic and foreign project partners, project finance institutions, and national, provincial and local-level governments and landowners in the Project area will be crucial in determining long-term development gains. It is estimated that some PNG Kina (PGK) 20 to 30 billion (about US\$9 to 13.7 billion at June 2013 exchange rates) will accrue to the national government over the projected 30-year production life, to be allocated according to government-negotiated Benefit Sharing Agreements.
Employment	As a capital intensive project, once the employment associated with construction is over (peaking at 21,220 workers in 2012, of which 40 percent were Papua New Guinean), the direct formal sector jobs created by the Project once production commences will be positive but relatively low. The total number of expatriate and local staff during production operations is estimated to be 1,200 persons, plus third party contractor support. At the same time, the up-skilling of the thousands of PNG citizens who have worked on different aspects of the construction should enhance their employability and help many of them to gain employment with other projects if the economy continues to grow. Managing this transition will be a major test to the government and Project partners.
Workplace safety	As of June 2013, over 1,300 workers had graduated as Project Safety Champions and about 13,000 workers had undertaken training through the Incident and Injury Free® program at the LNG Plant. The Project had achieved a total of over 140 million work-hours since the beginning of construction with over 55 million hours Lost-Time Incident-free since September 2012, which was a record for ExxonMobil Development Company operated projects globally.
Workforce-based human capital and skills development	The Project delivered close to 1.9 million hours of workforce training; offered over 10,600 training activities from basic skills to world-class operations management and engineering. 1,700 Papua New Guineans have been trained to meet international standards and certifications; with over 10,000 Papua New Guineans having completed Project-provided training courses.
Supplier and enterprise development	The Project-funded Enterprise Centre has interacted with over 15,200 PNG entrepreneurs, providing a combination of training and business advice, including the equivalent of more than 8,300 training days and over 1,200 advisory and mentoring days to PNG businesses. Over 1,500 local businesses were registered as suppliers on the Enterprise Centre database. As of June 2013, total in-country spend on local products and services was over PGK9 billion (about US\$4 billion at June 2013 exchange rate), with more than PGK2 billion being spent directly with Landowner companies. By comparison, the total net Official Development Assistance (foreign aid) disbursed to PNG during 2012 (the most recent year for which public data is available) was US\$664.84 million; during 2011, US\$610.99 million; and during 2010, US\$511.41 million. ¹⁵
Spreading international norms, standards and best practices	Through a combination of EHL's internal risk management systems and standards, the risk management systems of the Project's eight EPC contractors, and risk management requirements included in project agreements with the PNG government and Lender Group, the PNG LNG Project has implemented wide ranging management systems, training programs, and monitoring and evaluation efforts to improve operational-level performance in health and safety, ethics and anti-corruption, quality control, security, social and environmental management, and business processes more broadly.

CONTINUED

Table 1: Overview of existing and potential benefits and risks from the construction phase of the PNG LNG Project
(As of June 2013) continued

EXISTING AND POTENTIAL BENEFITS RESULTING FROM THE PROJECT continued	
Supporting investment in infrastructure	The Project constructed a 3.2 km runway at Komo; worked with government to maintain the 700 km Highlands Highway (strengthening durability, reliability, safety); built and operated two residential training facilities; developed the Hides Waste Management Area facility; co-invested with other companies and government to install a 700 km plus fiber optic cable along the pipeline, opening up a backbone for better national and intra-provincial communications; and supported community-led refurbishment of clinics and schools.
Environmental impact management and conservation	The Project has implemented a variety of international best practices in areas such as biodiversity, waste management and recycling, and invasive weeds and pest control. The Project's Biodiversity Strategy and Biodiversity Offset Delivery Plan are the most ambitious of their kind to date in PNG, and draw on evolving international best practice with a strong focus on ensuring a grass-roots community-based approach to the implementation and strengthening of local and national environmental NGOs and research capacity. Innovative waste management and recycling solutions include: relocatable modular Waste Management Areas; ecoflex tire reuse as part of erosion control measures; wood packaging reuse by local communities; a bio-digester at the LNG Plant site for dealing with wastewater treatment plant sludge, paper, cardboard and food waste composting; and a process enabling thermal desorption of drilling cuttings and associated wastes, with the oil being reused in the drilling process and water being used as dust suppression on drill cuttings prior to transport to landfill.
Community security, health and safety	The Project encouraged the PNG government and The International Committee of the Red Cross to enhance the human rights training curriculum for government police and security forces, including training on the Voluntary Principles on Security and Human Rights. It supported efforts to strengthen and build the capacity of village court systems and the creation of Community Issues Committees to address both Project-related and other issues and potential conflicts. It worked with the PNG Institute for Medical Research (IMR), Population Services International and others to develop and expand the Integrated Health and Demographic Surveillance System to monitor rates of births, deaths and migration over time, provide training for local scientists in epidemiology, diagnostic capabilities and demography, and support a wide variety of community-based health interventions. It also partnered with IMR and University of PNG to establish and equip a National Infectious Disease Diagnostic and Research Laboratory to provide high-quality service facilities and medical training. It sponsored implementation of the National Road Safety Council's Road Safety Awareness campaign for the Highlands Highway, with some 50,000 participants.
Supporting community agriculture and nutrition	To support longer-term food security in local communities, collaborative agricultural programs have been implemented including: support for the development of a community-led Agricultural Development Plan in the LNG plant site communities; training on enhanced farming and animal husbandry techniques; support for research and extension on more productive and nutritious varieties of selected food crops, pigs, chickens and ducks; development of nurseries and model farm activities; a food processing and nutrition education program training women how to prepare nutritious meals from local ingredients and how to bake and sell goods in local markets; and support for other rural-based small enterprise development.
Other strategic community investments	Over 1,300 people in local communities have participated in the Project's Personal Viability Training program, an innovative personal development and empowerment program that can accommodate people with diverse backgrounds and education levels. The Project has also supported women's and youth groups with a focus on activities to improve skills and livelihood opportunities, raise awareness on child and maternal health and nutrition, and tackle domestic violence and sexually transmitted diseases; supported national research and advocacy on gender equality in PNG and in the extractive sector; and sponsored 17 PNG women leaders to participate in ExxonMobil's Global Women in Management program. It has also supported nearly 140 schools (mostly primary and elementary level); launched a targeted <i>Support to Schools</i> program including infrastructure development, improving quality of education services, training for teachers and school boards, and enhancing extracurricular activities for students; funded a teacher needs assessment undertaken by the PNG National Research Institute; and worked with 26 schools on a nationally-recognized writing and drawing competition to promote the country and its national identity.

Table 1: Overview of existing and potential benefits and risks from the construction phase of the PNG LNG Project
(As of June 2013) continued

EXISTING AND POTENTIAL BENEFITS RESULTING FROM THE PROJECT continued	
Strengthening public sector research and institutional capacity	<p>The Project has worked with government ministries and public sector research institutes and authorities to develop national capacity to address a range of economic, social and environmental challenges. This has been important in helping the Project achieve its own risk avoidance and mitigation commitments, while at the same time has helped to strengthen national skills, standards and capabilities for tackling these issues on an ongoing basis more broadly in PNG. A few examples among many include: joint activities with the PNG Institute for Medical Research aimed at mitigating community health risks associated with the Project while also improving public health systems' capacity more broadly; support to the National Agriculture Quarantine and Inspection Authority (NAQIA) providing data and technical input to assist its implementation of new fumigation procedures and controls to minimize the risks of invasive weeds and pest species entering PNG; supporting PNG's Department of Environment and Conservation to develop a protected area system in the area surrounding Project operations (the Kikori River Basin) and at the national level in enhancing implementation of the country's commitments under the Convention on Biological Diversity; and working with the PNG Department of Works on a number of upgrading and maintenance activities on the Highlands Highway and other key regional infrastructure. These and other examples are all aimed to meet the Project's needs, but also offer broader and longer-term benefits to the public.</p>
Production of safe and affordable products	<p>An estimated 9 trillion cubic feet of natural gas, which is lower cost and burns more efficiently and with lower emissions than oil, will be produced and exported to Asian markets over the projected 30-year production life of the PNG LNG Project.</p>
EXISTING AND POTENTIAL RISKS AND CHALLENGES ASSOCIATED WITH THE PROJECT	
Technical engineering and execution risks and challenges	<p>These have included the challenging physical conditions and location of the Project area – remote, extremely rugged terrain and the need to navigate mountains, deep valleys, rivers, dense vegetation; high and unpredictable levels of rainfall; no or unreliable infrastructure resulting in challenging logistics to transport heavy equipment and construction materials on-site; and lack of existing local technical and managerial skills at all levels.</p>
Workforce and community safety and health risks and challenges	<p>The challenge of ensuring high safety standards in a large-scale construction project is a difficult undertaking anywhere in the world, given the thousands of pieces of heavy equipment and moving vehicles, tight project deadlines, and with thousands of workers often coming from widely diverse cultures and languages. It is even more so in a country such as PNG, where many of the local workers are having their first exposure to formal sector construction and engineering jobs; where locally-owned contractors and landowner companies don't have the same level of safety systems as the international project operator and its EPC contractors; where there are challenging weather conditions, rugged terrain and remote operating sites; where road safety conditions are particularly bad; where other health threats such as malaria, TB, HIV/AIDS and community-based and gender-based violence are high; and where there are some 60,000 people living in local communities in proximity to the operations.</p>
Environmental and social risks and challenges	<p>These include: operating in one of the world's most pristine and highest biodiversity natural environments; working with enormous cultural complexity and diversity with over 800 languages and traditional clan structures (many of the nation's languages have no written form, so oral tradition passes the culture of people from generation to generation); operating in remote and isolated rural locations where communities have highly limited access to public services; managing high levels of community expectations and desire for jobs in what is a capital intensive project; effectively responding to real and perceived community grievances; achieving compliance with national regulations, international norms and standards, and internal policies and management systems; and going beyond compliance to improve environmental, social and economic conditions. Another major challenge has been the need to effectively resettle and compensate households that have been displaced by construction activities. As of June 2013 the Project has needed to resettle and restore the livelihoods of about 700 households that have been either physically displaced, economically displaced or both, by construction activities along the 292 kilometer corridor that encompasses the onshore pipeline and key facilities.</p>

Table 1: Overview of existing and potential benefits and risks from the construction phase of the PNG LNG Project
(As of June 2013) continued

EXISTING AND POTENTIAL RISKS AND CHALLENGES ASSOCIATED WITH THE PROJECT continued	
<p>Environmental and social risks and challenges continued</p>	<p>Extensive community consultation efforts, comprehensive evidence-based impact studies, environmental and social management plans, and implementation of a resettlement program, as well as the establishment of grievance mechanisms for workers and local communities, have been key approaches to identifying, avoiding and mitigating these environmental and social risks. For example:</p> <ul style="list-style-type: none"> - The PNG LNG Environmental Impact Statement (EIS) was supported by 5,700 social surveys involving more than 24,000 interviews with people in local communities, representing more than 40 percent of the households in the Project area. - The EIS was underpinned by biodiversity studies for 78 sites, which produced nearly 4,000 records for fauna species and identified more than 1,000 species of plants. Some 80 species of vertebrate fauna and higher plants that were new to science were identified by the studies. - Over 200 risk assessments and 100 loss prevention studies have been conducted by the Project to review safety, security, health, socio-economic and environmental risks during the Project’s design and construction phases, as well as more than 300 pre-construction surveys at different worksites, resulting in some 3,500 site-specific mitigation measures. - A Community Grievance mechanism was implemented in the third quarter of 2010 and as of June 2013 had received a total of 1,282 Project-related grievances and resolved 1,265 of these related mainly to economic concerns about employment and livelihoods, land and social issues. - As of June 2013 more than 1,250 formal community engagements had been undertaken with communities in the Project area with more than 29,500 recorded participants.
<p>Political, regulatory, fiscal and public capacity risks and challenges</p>	<p>These have included: gaining political approval and necessary permits and licenses in a timely manner; country reputation and bankability to raise necessary financing; weak law and order; political uncertainty associated with potential changes in government, changes in negotiated agreements, and changes in fiscal regimes; potential of growing resource nationalism; customary land tenure and lack of clarity and high complexity of land title and ownership; and managing the legacy of poor resource governance in the past. Another challenge has been communicating the appropriate roles and responsibilities of the Project team relative to different levels of government when it comes to addressing community needs and grievances. While the Project’s grievance management team relays non-Project issues to government for handling, communities persist in attempts to use the mechanism to address what are government-related responsibilities. Concerns typically relate to ongoing governance gaps with respect to basic service delivery, law and order, and infrastructure development. They also relate to the government’s responsiveness to community requests for its involvement in specific cases of conflict resolution and incident investigation. The response to the fatal Tumbi Quarry landslide in January 2012 is one widely reported example. While the government provided targeted relief and issued an initial incident report, affected communities and NGOs point to the fact that there has been no official inquiry into potential causes of this incident.</p> <p>Future risks and challenges related to governance include the need for better resource revenue transparency and management; effective implementation of the Benefit Sharing Agreements; balanced allocation of resource revenues between investment and consumption; establishment of an effective Sovereign Wealth Fund; and ongoing efforts to mitigate ‘Dutch Disease’ impacts on other parts of the economy.</p>
<p>Access to affordable and reliable energy for low-income and remote rural communities</p>	<p>Given the country’s growing ability to export LNG and other sources of energy, a key challenge for the government (and reputational challenge for oil and gas companies operating in PNG) will be the need to invest in the country’s domestic energy infrastructure in order to improve urban and rural access to affordable and reliable energy.</p>

Sources: Unless otherwise stated the statistics in Table 1 are sourced from: the PNG LNG Quarterly Environmental and Social Reports (2010-13); correspondence with EHL; ExxonMobil’s Annual and Corporate Citizenship Reports; reports of the Independent Environmental and Social Compliance Consultant (2010-13); and the PNG LNG Economic Impact Case Study by ACIL Tasman (2008).

3. Key messages and lessons

In recent decades, there has been growing consensus among policymakers, industry and financial executives, and civil society leaders on the types of opportunities and risks associated with large-scale oil, gas and mining projects. There has also been growing agreement on the lessons and ‘good practices’ that are needed to ensure better identification, mitigation and sharing of the risks and better identification, creation and sharing of the benefits that arise from these projects. The Project offers a useful lens through which to explore some of these opportunities and risks, as well as emerging good practices of responsible resource development.

The case study focuses on three key aspects of international best practice in achieving more responsible and inclusive project construction, highlighting a number of lessons in each area demonstrated by the PNG LNG Project. All of these practices and lessons require ongoing commitment and leadership by the Project team and the PNG government as the Project transitions into its production phase. They also have relevance for other operators and policy makers around the world.

Message #1 COMMITMENT TO RIGOROUS RISK MANAGEMENT AND ACCOUNTABILITY IN PNG	Message #2 INVESTMENT IN NATIONAL CONTENT AND CAPACITY IN PNG	Message #3 ENGAGEMENT IN CROSS-SECTOR PARTNERSHIPS AND POLICY DIALOGUE IN PNG
<p>The case study illustrates the mutually reinforcing approaches the PNG LNG Project has taken in adapting <i>internal</i> corporate policies, standards, and risk management systems to local context and culture, while also applying and complying with <i>external</i> principles and standards, such as the IFC Performance Standards that have become integral to most large-scale project finance agreements, in addition to host country regulations. It also highlights some models and lessons for achieving more participatory and accountable community engagement, and the value of learning from and working with independent experts and organizations to ensure greater rigor in decision-making and credibility in monitoring performance.</p> <p>The disciplined implementation of international good practices to identify, avoid and mitigate Project-related risks and to measure and report publicly on performance is an essential foundation for building trust with key stakeholders, ensuring accountability, and achieving responsible and economically viable project development. It can be especially important in strengthening local regulatory frameworks and raising business standards where capacity or enforcement is weak.</p>	<p>The case study explores some of the ways in which the PNG LNG Project is enhancing local vocational and workforce skills; developing local suppliers and enterprises; strengthening the capacity of domestic non-governmental organizations, research institutes, public sector institutions, community-based organizations and community leaders; promoting women’s empowerment; and supporting infrastructure development.</p> <p>Investment in local human capital, enterprise development and institutional capacity in host countries and communities is often essential for successful project construction. In addition to the public revenues that a project generates, it is also one of the most significant contributions a large-scale project can make to support longer-term development outcomes. Capital-intensive oil and gas projects do not create a large number of direct jobs once construction is completed, but through their core business operations and social investment programs they can play a valuable role in other aspects of building individual and institutional capacity.</p>	<p>One of the over-arching messages of the PNG LNG case study has been the importance of ongoing engagement and cooperation between EHL and its contractors, different government entities, community-based groups, NGOs, research institutions, other companies, financial institutions, international donor agencies, and the diplomatic community in PNG. In addition to the Project’s community engagement strategy and activities, the case study highlights two other key aspects of stakeholder engagement and cooperation. First, the benefits of building a few strategic cross-sector partnerships, often with non-traditional allies in the public and non-profit sector. Second, the need to participate with other stakeholders in policy dialogues and collective efforts to support the PNG government in improving resource revenue management and the quality of development planning and delivery.</p> <p>Effective trust-based relationship management is as critical as effective technically driven construction management to ensuring that projects are developed in a manner that is responsible and economically viable. This is the case in all major projects, but especially so when an investment is as complex and challenging as PNG LNG, and where there are large gaps in governance, skills, resources and trust between different stakeholders.</p>

Diagram 1: A business framework for responsible project development





|| Commitment to rigorous risk management and accountability in PNG

The PNG LNG Project illustrates one of the most important corporate responsibility trends over the past two decades – a growing commitment to more rigorous non-technical risk management and accountability. Large-scale project developers and funders are taking a more strategic and comprehensive approach to identify, avoid and mitigate environmental risks, and increasingly the socio-economic and human rights risks associated with their activities. This trend has been driven by a combination of internal and external factors. They include more effective and organized community activism and NGO campaigns; more demanding government regulations, resource development agreements and project lenders' requirements; and greater understanding by corporate executives of the reputational damage and increased financial costs, project delays and litigation faced by projects and companies that fail to manage these risks.

Major project developers have used environmental impact assessments (EIAs) as a technical tool since the 1960s, but their scope has grown dramatically to include a broader range of ecological issues, as well as socio-economic, political and human rights risks and impacts. While a rigorous scientific and data-based approach to

project risk assessment and risk management remains essential, they now also require application of social sciences and other disciplines, methodologies and skill sets. These include anthropology, political economy, stakeholder mapping, consultation and participatory appraisal methods. They have also become integrated into more systematic and strategic approaches to non-financial risk management, performance monitoring and public disclosure at both the enterprise level and project level. While this increasingly comprehensive and integrated approach reduces uncertainty in determining and addressing risks, the assessment process still requires and will likely always require a significant element of professional judgment. This reinforces the need for highly qualified professionals at both the corporate and project level who have an appropriate balance of so-called 'hard-skills' and 'soft-skills.'

The PNG LNG Project illustrates the advances that have been made in this area and some of the ongoing challenges of achieving rigorous risk management, due diligence, transparency and accountability in a difficult operating environment. The six areas of good practice listed below are explored in more detail in the following pages.

#1	Adapting internal corporate policies, standards and management systems
#2	Applying international voluntary principles and standards
#3	Undertaking systematic and participatory community engagement
#4	Establishing a community grievance mechanism
#5	Implementing a comprehensive biodiversity strategy
#6	Facilitating independent advice, evaluation, monitoring and reporting

1 **Adapting internal corporate policies, standards and management systems**

The disciplined day-to-day implementation of internal corporate policies, management systems and operating standards, underpinned by an enabling corporate culture and appropriate skills, is a fundamental foundation to achieving responsible project development. This is particularly important when internal standards are higher or more developed than those of a host country. In such cases they not only provide local managers with a common framework for achieving consistent performance with the company's operations globally, but can also make a valuable contribution to raising the baseline for domestic regulators and transferring good practice. The following illustration of how the PNG LNG Project is implementing ExxonMobil's Operations Integrity Management System (OIMS) in Papua New Guinea highlights some key lessons. Appendix I provides a broad overview of how OIMS relates to some of the company's other global policies and standards aimed at ensuring operational integrity.

Implementing the Operations Integrity Management System (OIMS) in PNG¹⁶

The OIMS Framework was developed by ExxonMobil in the 1990s, following the Exxon Valdez oil spill and recognition of the need to establish common worldwide expectations and standards for addressing safety, security, health, environmental and social risk in all the company's activities. OIMS consists of 11 elements that address key aspects of management associated with a specific business, project or facility.¹⁷ There are 65 expectations for performance underpinning these 11 elements, which are the same for all the company's employees and contractors regardless of where they operate or in what type of activity. Over time OIMS has evolved to provide a more systematic and disciplined approach to enable the company to measure progress and track accountability across its diverse business lines, projects and facilities.

The aim of OIMS is not just to provide oversight and drive compliance with internal standards and contractual commitments, although these are vitally important objectives. It also aims to drive continuous improvement in the operational integrity of the company's diverse activities by shaping individual and team behaviors and corporate culture, and by monitoring, benchmarking, measuring, disclosing and accounting for performance. According to the company, corporate culture is as important as compliance. ExxonMobil's Chairman and CEO, Rex Tillerson, has stated, "The answer is not found only in written rules, standards and procedures. While these are important and necessary, they alone are not enough. The answer is ultimately found in a company's culture – the unwritten standards and norms that shape mindsets, attitudes and behaviors."¹⁸ The following examples focus on a few elements of OIMS to illustrate how the system is being implemented within the PNG context.

Visible leadership and accountability

Effective project leadership and accountability drive all the other elements of OIMS. In PNG, where many local workers have no or limited experience of working on a large-scale construction project, the need for visible leadership has been particularly important. Such leadership has been crucial in setting clear expectations and establishing transparent targets and accountability mechanisms for managing safety, security, health, environmental and social risk. It has also been key for developing a supportive corporate culture for safety and effective risk management within the local PNG workforce.

Engaging workers and contractors to embed risk management into daily activities

Visible leadership by senior managers is necessary but not sufficient in a project the size and complexity of PNG LNG. The Project team has therefore placed a major emphasis on providing workers and contractors with sufficient knowledge, skills and empowerment to take personal responsibility for risk management in relation

to their own activities, those of their co-workers, and their local communities. Key expectations are made clear to new personnel on mobilization, with all construction workers required to participate in structured induction and other orientation processes. This is followed by ongoing formal and informal communications, constant safety interactions, simulation exercises, workshops, drama and arts projects, posters, radio, social media initiatives, the use of both leading and lagging performance indicators, and other activities aimed at developing a culture of proactive problem solving, innovation and excellence. The Project team also holds daily toolbox meetings at the start of each work day during which employees update each other on key operations, safety, security, sustainability and human resource issues.

Undertaking and disclosing Project-level risk assessments and risk management plans

One of the key requirements stipulated by OIMS for all new projects is the generation of safety, security, environmental, social and human rights risk assessments or impact studies, and associated management plans to avoid and mitigate risks. The financial institutions that have provided project finance also require these studies, as does the PNG government prior to issuing project development and operating permits, although the government's capacity for monitoring and evaluation is often limited. In turn, these studies have led to detailed project and site-specific implementation plans. Compliance against these plans is then monitored by a combination of internal corporate review processes and independent external evaluation. These processes form the basis for accountability to senior management, government entities, funders, local communities, and other stakeholders. The two core publicly available documents that the Project and its stakeholders are using to identify and assess environmental and socio-economic risks and impacts, and to develop plans to avoid, mitigate and/or offset or compensate for these risks are The Environmental Impact Statement (EIS) and the Environmental and Social Management Plan (ESMP).

The ESMP consists of 19 Environmental Plans and 11 Social Management Plans, which provide specific requirements that the Project aims to meet and is assessed against in all its activities. These are provided at www.pnglng.com, and are summarized in Appendix II and III.

Investing in community consultation, emergency preparedness and grievance procedures

OIMS requires that the PNG LNG Project provide communities in the Project area with clear, factual and regular communications on hazards and risks. As detailed in the section on community engagement, these are provided as part of the Project's overall community engagement strategy through a wide variety of channels and media. Community-based training is also provided for emergency response teams within the Project area and advanced world-class monitoring and emergency shutdown and response systems have been built into all key facilities. Theater has been used to good effect in raising community awareness about emergency preparedness and is a good example of communications techniques that have been adapted to suit local culture. As outlined in a later section, a grievance mechanism has also been established to systematically receive and resolve community grievances.

Mechanisms to support continuous assessment and improvement

Element 11 of OIMS focuses on the need for continuous evaluation of what is working and what is not working at a particular site or project, and developing plans for improvement. Every year, about 50 to 70 formal OIMS assessments are conducted around the world. A key lesson has been the establishment of cross-functional and cross-regional teams to carry out the assessments. This achieves a dual objective of bringing diverse perspectives and experiences to bear on the evaluation itself, as well as providing a conduit for new ideas and knowledge to be spread across the company when the team members return to their usual jobs.

#2 Applying international voluntary principles and standards

The following international voluntary principles and standards have been important in the PNG LNG Project in terms of enhancing project risk management, due diligence, and accountability. The creation of such principles and standards aimed at improving the management and disclosure of environmental, social, and human rights risks across the private sector has been a major advance over the last decade. Most of these initiatives have been created through a process of multi-stakeholder consultation, and are governed by multi-stakeholder boards with support from technical advisory committees at global, national or sector levels.

Frameworks to integrate environmental and social risk management into project finance

The IFC's Performance Standards, the OECD Common Approaches, and the Equator Principles provide international finance institutions, export credit agencies, and commercial banks with a framework to incorporate social and environmental requirements into their credit risk assessments and lending criteria. Once a lending institution voluntarily adopts any of these standards, projects that are subsequently funded by that institution are contractually required to conform to social and environmental performance criteria as part of the financing agreement.

The Lender Group for the PNG LNG Project not only undertook extensive due diligence, but also integrated rigorous social and environmental performance requirements into the original US\$15.7 billion project finance agreement (increased to US\$19 billion as of June 2013), and appointed an independent consultant to undertake compliance monitoring. This adds an extra set of checks and balances on Project performance and helps to hold the Project to account as well as providing it with independent assurance and credibility.

Multi-stakeholder initiatives to improve resource revenue transparency and tackle corruption

Over the past decade, major oil, gas, mining and construction companies have been participants alongside governments and NGOs in establishing global voluntary initiatives such as the Extractive Industries Transparency Initiative (EITI) and the Partnering Against Corruption Initiative (PACI), which aim to improve the transparency and integrity of resource revenue management. ExxonMobil was an early signatory of EITI at the global level and has had a presence on the EITI board since its inception. As outlined on page 62, during the first three years of construction of the PNG LNG Project, EHL has worked with the PNG Department of Treasury, civil society organizations, other resource companies, international donor agencies and the diplomatic community to provide encouragement and technical support to the PNG government regarding EITI. The company is also an active participant in a number of national anti-corruption efforts in PNG, including corporate membership in Transparency International's local PNG chapter and sponsorship of some of its activities.

Global principles to guide companies on the responsibility to respect human rights

The United Nations Human Rights Council endorsed the *UN Guiding Principles on Business and Human Rights* in June 2011, following a six-year process of multi-stakeholder consultation and research led by Professor John Ruggie. *The Guiding Principles* provide a three-pillared 'Protect, Respect, Remedy' framework, which recognizes the state duty to protect human rights, the corporate responsibility to respect human rights, and the need to provide access to remedy.¹⁹ The corporate responsibility to respect human rights requires businesses to 'know and show' that they are respecting human rights throughout their operations. Companies are called on to:

- Establish a high-level policy commitment to respect human rights, supported by operational-level policies, processes, training and incentive

Box 1: Applying the Voluntary Principles on Security and Human Rights in PNG

Established in 2000, the Voluntary Principles on Security and Human Rights – to which ExxonMobil is a signatory – are designed to guide companies in maintaining the safety and security of their operations within an operating framework that encourages respect for human rights.²⁰ The PNG LNG strategy to implement the VPs includes:

Community-level engagement to respect human rights and enhance security: Ongoing efforts by the PNG LNG Project team to engage with local communities are the foundation on which its human rights and security efforts rest. This includes regular communications and consultation activities; a community grievance mechanism; support to strengthen locally-led Community Issues Committees, which can play an important role in helping to discuss and resolve issues before they flare into conflicts within the community; and activities to strengthen village courts and magistrates, which are vital to resolving conflicts when they do occur.

Requirements and training for private contractors on security and human rights: All private security personnel hired directly by the PNG LNG Project and its EPC contractors receive training on the Voluntary Principles. Locally hired

security personnel have been sent on training programs in PNG and Australia to improve their skills in a range of areas related to security contingency planning and management, and to conflict and incident prevention and response. It is worth noting that none of EHL's or the Project's security staff or contractors carry firearms. In addition, the Project requires that all subcontractor Landowner companies provide evidence that their guard force members have been trained on human rights in accordance with the VPs.

Government engagement and capacity building on security and human rights: In 2010, EHL signed a Memorandum of Understanding (MoU) with the Royal Papua New Guinea Constabulary. The agreement explicitly states that security forces assigned by the PNG government to provide security in and around the Project area are to act in a manner that respects human rights and complies with all applicable laws. The International Committee of the Red Cross has jointly developed a human rights training pamphlet with the Royal Papua New Guinea Constabulary, and EHL has obtained their permission to distribute this to security personnel operating in the Project area.

structures that embed the commitment across the entire organization.

- Undertake human rights due diligence: a) Assess the actual and potential impacts of human rights that arise from the company's own activities and through its business relationships; b) Integrate the findings of these assessments into the company's decision-making processes to prevent or mitigate adverse impacts; c) Track the effectiveness of the efforts to address human rights impacts; and d) Communicate these efforts to relevant stakeholders in appropriate fashion.
- Provide or cooperate in legitimate processes to remediate human rights harms that the company has caused or contributed to, including through operational-level grievance mechanisms.

ExxonMobil has publicly endorsed the *UN Guiding Principles* at the corporate level. Internally, the company is reviewing alignment between its management systems and the *UN Guiding Principles*, especially their emphasis on operational due diligence. It is conducting human rights training for relevant employees at its operating sites, including in PNG, and integrating appropriate rights-based language into agreements with contractors.

The Voluntary Principles on Security and Human Rights (VPs) are another example of international voluntary principles and standards that are being applied by the PNG LNG Project. Some of the activities and lessons learned from the VPs are summarized in Box 1.

Global industry-wide guidelines and technical standards to improve management of specific environmental and social risks

ExxonMobil is participating in technical advisory groups and pilot projects supported by a variety of industry-wide initiatives to improve social and environmental risk management in specific areas. Many of these have applicability for PNG LNG and in some cases are drawing direct lessons and good practices from the Project. Examples include a variety of technical standards that have been developed by the International Oil and Gas Producers Association (OGP), the Oil and Gas Industry Association for Environmental and Social Issues (IPIECA), the Society of Petroleum Engineers, and the Business and Biodiversity Offsets Programme.

#3 Undertaking systematic and participatory community engagement

More systematic and participatory community engagement, as part of a broader stakeholder engagement strategy, has been essential in addressing almost every major risk facing the PNG LNG Project. Apart from the government, which gives the Project its 'legal license to operate', there is no more important group of stakeholders than local communities, which give the Project its 'social license to operate'. The influence of local communities is especially strong in a country like PNG, where 97 percent of the country's land is owned and managed under customary tenure, where communities are largely dependent on the land and natural resources for their livelihoods, where there are strong kinship ties and cultural and spiritual connections to the land, where landowners' rights are legally recognized by Benefit Sharing Agreements, and where there is an open media and well-organized NGO sector. Key lessons and practices from the first three years of construction include:

Investing in a dedicated and professionally skilled community engagement team

Given the strategic importance of building good community relationships, almost all the Project staff and contractors (about 40 percent of whom live in or come from local communities) receive various levels of training regarding the need to work effectively with these communities. EHL has also established a dedicated and well-resourced Land and Community Affairs (L&CA) team to lead community engagement. As of June 2013, 96 percent of the team were PNG Nationals. EHL's Public and Government Affairs (P&GA) group provides strategy development and implementation support and assists in the coordination and linkage of community-level activities with provincial and national-level government and other stakeholders. The Project team has developed community engagement principles to guide its work, which are outlined in Appendix IV.

Setting clear goals and implementation plans

The Project's Environmental and Social Management Plan (ESMP) guides community engagement strategy and implementation. Specific priorities and projects are evaluated and revised on an ongoing basis in response to community feedback. The key goals of the community engagement strategy are to: build trust, legitimacy and mutual respect; avoid, mitigate or compensate for negative impacts on local livelihoods and lifestyles, especially those of vulnerable or excluded groups; honor the social commitments that the Project has made while also managing expectations in terms of what the Project can and cannot deliver; comply with relevant government policies, laws and regulations, as well as ExxonMobil's own global corporate policies and the requirements stipulated by the Lender Group; try to prevent communal unrest, work stoppages and violence, whether related to the Project or not; develop the capacity and capabilities of individual community leaders and community-based organizations, especially women's and youth groups; and empower community leaders in developing a shared vision for the Project area's longer-term development.

Providing accessible, accurate and regular information

The Project's day-to-day communication activities are crucial to keeping communities informed of what is happening with the Project and its impact on them; raising awareness of safety, security and health issues; ensuring that people know about economic and other opportunities and benefits available to them; managing their expectations on what the Project can and cannot deliver relative to the government, churches or NGOs; and making sure that emergency preparedness plans are in place and understood. The Project team uses a wide variety of engagement models and communication tools to achieve these goals. These include formal consultation processes and meetings, daily interactions between the L&CA team and individual community members and households, and the use of a variety of media from radio, posters, grievance cards and other written materials to the use of local theatre and cultural traditions.

Listening to the community

The Project's consultation processes aim not only to inform or raise awareness, but explicitly to listen to and learn from community input and concerns about Project plans and activities, and to provide feedback on how the Project is responding. Specific procedures and tracking mechanisms have been put in place to facilitate this. Effective consultation involves building consensus and reconciling different views and expectations not only between the Project and a particular community, but also between and even within communities themselves. Due to severe gender inequalities in PNG, the Project has hired and trained employees and developed programs that facilitate direct consultation with women and other excluded groups to ensure their voices are heard while also ensuring that engagement does not place women from local communities, the L&CA team or the broader Project workforce at risk.

Another challenge has been translating the concept of Free, Prior and Informed Consent (FPIC) into practice. ExxonMobil, along with other major oil, gas and mining companies, has made an explicit public commitment to implementing a process of free, prior and informed consultation, with the goal of gaining the consent of local communities and other key stakeholders, including indigenous peoples, regarding its operations. In practice, whether in PNG or other locations, efforts are made to achieve and demonstrate broad consensus among stakeholders while recognizing that any process to consult and build consensus must fit local contexts, particularly socio-cultural practices. The establishment of a community grievance mechanism for the Project has been a key element of this process, as explored in the next section.

Providing transparent resettlement, compensation and livelihood restoration options

The scale of the Project and the customary land tenure in PNG have presented significant challenges in terms of managing and compensating people for physical and economic displacement. From the outset, the

primary objective was to avoid such displacement through careful siting of pipelines and other Project infrastructure, and through re-alignment and design modifications wherever possible. Where displacement was necessary, the L&CA team undertook community dialogues and meetings with affected households to ensure transparency and a systematic process of negotiation, fair compensation, appropriate support (such as relocation assistance, provision of rations, and livelihood restoration support), and ongoing monitoring and evaluation.

Landowner clans receive compensation for damage and deprivation caused by the Project in accordance with requirements of the *PNG Oil and Gas Act 1998*. The program's overriding objective – and obligation – has been to provide all displaced people with compensation and specific options to restore their livelihoods and standards of living to an equal or better level by reestablishing the same or creating new, stable sources of income. The impacts of physical and economic displacement are monitored through standard of living indicators and livelihood restoration indicators respectively. As of June 2013, the Project has needed to resettle and restore the livelihoods of about 700 households that have been either physically or economically displaced, or both, by construction activities along the 292 kilometers that encompasses the onshore pipeline and key facilities. EHL retained the Environmental Law Centre, a local, nonprofit community legal center, to act as an independent advocate on behalf of displaced people and to ensure that they are fully informed about the resettlement process as well as their rights and obligations.

After initial challenges, the resettlement program has become more effective and efficient. Speculative housing, for example, was an issue at the outset, with people migrating into the Project area with the goal of being able to benefit from Project-related programs. The Project team incorporated lessons learned during the early phases of the program to improve the way that

legitimate landowners and their assets are assessed, and how the expectations of people who are not entitled to compensation and benefits are managed. The L&CA team has also worked with affected households to design, implement, and, over time adapt agricultural and enterprise development projects to increase participation rates and the positive impact from these programs.

Supporting mechanisms to share Project benefits

Local communities stand to benefit directly and indirectly from the Project, both during the four year construction phase and over the anticipated 30 years of production. The statutory Benefit Sharing Agreements signed between the government of PNG, landowners, provincial and district governments in the Project area (to which neither the Project nor EHL is a party) provide a framework for determining the flow of project benefits once production commences. Other government regulations and agreements stipulate that the Project must maximize local job creation and business contracts, but do not set specific targets. The Project has developed a PNG National Content Plan to support local workforce development, suppliers, and strategic community investments. This plan is based on ExxonMobil's own policies and standards for national content, as well as the Project's statutory obligation to report to the PNG government on its national content performance in areas such as job creation, training and skills development, and spend on local suppliers.

Building local capacity for long-term development

Underpinning the Project's approaches to community engagement is its ongoing work to build the capacity of individual community leaders and community-based organizations to improve their ability to organize and negotiate effectively as well as their longer-term development options and opportunities. The L&CA team is also working with a variety of local and national NGOs and the Project-supported Enterprise Centre to promote women's economic empowerment. As outlined in a later section, the Community Development Support team focuses on three core elements of long-term

development: 1) strengthening social resilience; 2) local economic development; and 3) community capacity building.

Challenges remain in managing community engagement and expectations. A major issue is the ongoing need to manage unrealistic expectations about the number of jobs and enterprise opportunities that the Project will be able to sustain once the four year construction phase transitions to the 30 year production phase. Another is the emerging challenge of ensuring that the cash benefits accruing to households in the Project area once production revenues start to flow don't exacerbate pre-existing community tensions and security concerns. These challenges are heightened by the transitional socio-economic nature and changing patterns of behavior in much of PNG society, both urban and rural. This evolution has been occurring over decades, but has been further complicated and intensified in the Project area by the financial and demographic implications of such a large-scale investment.

While these issues are the responsibility of government to address, EHL and its community teams are often on the frontline of dealing with expectations and concerns. This is why the Project places a strong focus on working with and strengthening government institutions and community organizations wherever possible, rather than assuming a public service delivery role which could undermine state development capacity even further. The Project team is making concerted efforts to provide ongoing support to help affected communities overcome difficulties associated with their remoteness from many public services and their unfamiliarity with an increasingly cash-based economy. Efforts include education and awareness programs and evolving work with microfinance institutions, community banking and mobile money providers to support households that are transitioning to a cash-based economy due to Project-related employment and business opportunities or the receipt of monies from the Benefit Sharing Agreements once production commences.

#4 Establishing a community grievance mechanism

What often starts as a relatively small community complaint can quickly escalate into a major grievance that causes work stoppages, project delays and mistrust between a project operator and local communities if not addressed in a timely and acceptable manner or if community members feel they are not being listened to, respected or taken seriously by the operator and its contractors. The *UN Guiding Principles on Business and Human Rights*, as well as lessons from decades of community disputes with projects in PNG and elsewhere, point to the need for formal community grievance mechanisms. These mechanisms are an increasingly critical component of a broader commitment to stakeholder engagement and trust building. They are being developed in addition to more common workplace grievance mechanisms.

Understanding the grievance-conflict spectrum

Proactive community grievance management is especially crucial in a high risk, high profile and capital intensive project such as PNG LNG, where some people have been displaced from their homes and livelihoods, where heavy construction activities are taking place in close proximity to other peoples' homes and livelihoods, and where there are unmet expectations due to the relatively low number of direct jobs and business opportunities with the Project. Despite ongoing efforts to avoid and mitigate risks, there have also been specific incidents where communities have been negatively impacted, or perceive they have been impacted, by problems related or perceived to relate to the Project. These include water contamination, increased competition for water and land resources, escalation in local prices of basic goods, negative health impacts, and increased road accidents due to the high number of vehicles. The challenge is exacerbated even more so in PNG, where there is longstanding experience of inter-clan warfare and the use of violence to solve local disputes, and where law and order is often weak.

Establishing a clearly communicated formal grievance procedure with independent oversight

In 2010, in accordance with Lender Group requirements, the PNG LNG Project prioritized the establishment of a community grievance mechanism to serve as a vehicle for receiving, responding to and resolving community grievances. This was neither a legal requirement nationally nor common practice within PNG at the time. The L&CA team has primary responsibility for community grievance management, with specific training provided to its staff on key objectives and procedures. The processes and outcomes are independently monitored through the third-party compliance assessments led by D'Appolonia. People in the community also have access to the Environmental Law Centre, retained by EHL to provide independent advice to community members on issues related to resettlement. At the heart of the grievance management process is a dedicated third-party computer-based Information Management System, which allows for systematic recording, tracking, management, analysis and reporting on grievances. The procedure consists of five steps:

- Step 1: Publicize to communities
- Step 2: Receive and register grievances
- Step 3: Categorize and investigate grievances
- Step 4: Develop resolutions
- Step 5: Monitor, evaluate, analyze and improve.

Monitoring and publicly reporting on grievances and the Project's response

Since the community grievance procedure was formally implemented in the third quarter of 2010 through to the end of June 2013, the Project team has received a total of 1,282 Project-related grievances and resolved 1,265 of these grievances. A grievance is defined by the Project team as a complaint lodged by an individual, group or community alleging damage, impact, or dissatisfaction specifically resulting from Project actions or a lack of action. It is usually submitted in expectation of a corrective action, compensation or both. In the second quarter of 2013, 82.5 percent of

all grievances were closed in less than 30 days. Out of a total of 12,394 broader stakeholder issues registered, 897 cases were related to government. Stakeholder issues are defined by the Project team as questions, comments, concerns, suggestions or observations that are presented to the Project. They include matters that are out of the Project control, such as government-related grievances related to benefit distributions, legacy issues and issues from other projects located in the vicinity of Project activities.

A high number of recorded grievances are not necessarily a sign of serious or unresolved problems, especially in the early stages of such a process. They can demonstrate that community members have been well informed by the Project and by their peers about the process, that they are using it, and that the Project is responding to those concerns that are its responsibility to address. Not surprisingly, the number of grievances tend to track the level and stage of activity in the construction process. The types of grievance have also shifted over the course of construction, although the most common ones overall have remained consistent. They have been as follows:

- **Economic:** Due to high expectations and perceptions of insufficient access to Project-related business development and jobs
- **Land:** Grievances related to land compensation and land ownership
- **Environment:** Covering a range of real and perceived environmental impacts but mostly related to water, such as water access, requests for community water projects, and concerns about water quality, and sediment control
- **Social:** Grievances related to nature of community engagement, Project impacts on local culture, preservation of sacred sites, and general safety and health concerns
- **Misinformation:** Grievances where community members feel they have received information that is inaccurate.

While successful in general, the community grievance mechanism has not resolved every concern related to the multi-dimensional relationships between the Project and local communities. As with most large scale projects, balancing divergent and often strongly-held stakeholder views and interests, and achieving broad consensus among these, remains an ongoing challenge. Having said that, the Project's own public reporting and analysis of community grievances tracks the findings of several independent academic and NGO studies. The 2011 *Oxfam Listening Project* focused on communities near the LNG plant.²¹ It identified concerns about the distribution of Project-related jobs and training; changes in livelihoods and community life; social issues; outsiders coming in; environmental issues; promises and expectations; distribution of Benefit Sharing Agreements; and land issues. Another independent survey published in 2012 focused on community feedback in the Hela Province.²² It identified concerns relating to community awareness and access to information; landowner issues; benefit sharing; employment and business opportunities; social change and impacts; and Project resettlement.

Some of these concerns, most notably the nature of Benefit Sharing Agreements, are the responsibility of the PNG government to resolve, but their impact is still felt by the Project, whether directly through work stoppages and conflicts or indirectly through reputation damage and mistrust. It is likely that grievances will increase when the high level of benefits start flowing from production revenues. This will be a key issue for the production team to focus on once the transition from construction is completed.

#5 Implementing a comprehensive biodiversity strategy

As a major project in an area of high biodiversity and conservation value, PNG LNG has to balance a number of expectations and challenges. First is the challenge of integrating environmental conservation with the need to support and sustain viable local livelihoods and cultural traditions. Second is the need to ensure that site-specific environmental risks are identified and mitigated and that project-level performance standards are met, while also supporting more comprehensive sustainable development plans for the broader watersheds and conservation areas in which the Project is located. This calls for both risk management and capacity building, and for both shorter-term, site-level or project-level risk mitigation solutions as well as longer-term, regional and national-level conservation strategies.

Developing a Biodiversity Offset Delivery Plan relevant for PNG

Based on extensive engagement with relevant organizations, including local and international NGOs and the PNG Department of Environment and Conservation (PNG DEC), the biodiversity strategy applies an internationally recognized hierarchy of 1) identify, 2) avoid, 3) mitigate and 4) offset. In 2011, the Project team began developing a *Biodiversity Offset Delivery Plan* to offset residual impacts that could not be avoided or mitigated. Although the concept of biodiversity offsets has been around for over a decade, the implementation of offset programs is still an evolving field of practice. The Business and Biodiversity Offsets Programme defines them as follows: "Biodiversity offsets are measurable conservation outcomes resulting from actions designed to compensate for significant residual adverse biodiversity impacts arising from construction after appropriate prevention and mitigation measures have been taken. The goal of biodiversity offsets is to achieve no net loss and preferably a net gain of biodiversity on the ground with respect to species composition, habitat structure, ecosystem function

and people's use and cultural values associated with biodiversity."²³

The *PNG LNG Biodiversity Offset Delivery Plan* is based on a set of guiding principles in line with the IFC Performance Standards. The Project's approach aims to promote transparency, accountability, local and national capacity building and partnerships. The offset program includes several components. On-the-ground conservation gains are planned through a combination of strengthening existing protected areas and establishing new protected areas. These activities are supplemented by work at the regional level to support PNG DEC in developing a protected area system in the area surrounding Project operations (the Kikori River Basin), and work at the national level to support PNG DEC in enhancing implementation of the country's commitments under the Convention on Biological Diversity. The program also includes a capacity building component to deliver a skills base of qualified and experienced professionals who can contribute directly to the program and also benefit the practice of conservation in PNG more broadly.

Committing to work with and learn from technical experts and community leaders

Some components of the program will be delivered in the short term, while others will take longer. EHL has made a commitment to the program for the life of the PNG LNG Project, and progress will be subject to ongoing reviews and both internal and independent performance monitoring. Given the evolving nature of biodiversity offset programs and lack of longstanding global experience to draw on, the Project team has put systematic processes in place to consult with, learn from, and, where relevant, partner with international and Papua New Guinean environmental experts as well as local community leaders. It is drawing on the expertise and experience of, while also helping to strengthen capacity and networks among academics, government officials in PNG DEC and some of ExxonMobil's own leading environmental experts from around the world.

Creating strategic partnerships to enhance and sustain results

The Project team is developing partnerships with international and national conservation NGOs and other organizations to develop and implement the biodiversity offset program. To date, strategic partnerships have been formed with Conservation International, which helped EHL in developing the offset program, and Mama Graun Conservation Trust Fund, which is leading the conservation capacity building program. The partnerships are summarized in Box 2.

Further partnerships are being formed as the offset program is taken forward. The PNG LNG Project team

is partnering with other organizations to leverage financial, technical and logistical resources to help study and improve scientific knowledge about the region's biodiversity and ecosystem services; better understand and strengthen the links between biodiversity and the livelihoods and cultures of local communities; and build the capacity of government officials, local environmental experts, NGOs and community-based groups. Ultimately, it is hoped that this collaborative approach will help to promote a more coordinated platform for conservation activity in PNG more broadly, in addition to achieving the specific objectives of the Project's own Biodiversity Strategy and Biodiversity Offset Delivery Plan.

Box 2: Strategic partnerships to design and implement the biodiversity strategy

Conservation International (CI) Established in 1987, CI has pioneered a collaborative approach to conservation models that focus on both people and the environment. It has played a leadership role in the emerging field of defining and managing ecosystem services and biodiversity offsets, as well as innovative conservation financing mechanisms. It was one of the first major environmental NGOs to work with, as well as continuing to challenge, mining and energy companies to improve their environmental performance and to support market-based approaches to achieving conservation goals.

In the case of the PNG LNG Project, CI signed a collaboration agreement with EHL in 2011 to provide independent review of and technical advice on the Project's biodiversity strategy and offset plan. CI's international team and local PNG office have worked with EHL to:

- support consultations with government officials and with local environmental and community organizations;
- develop a technical rationale for offset selection;
- scope potential offset areas, activities and partners; and
- assess the feasibility of different implementation options.

Mama Graun Conservation Trust is a regional organization established in 2000. It provides long-term funding and support to community-based groups, NGOs, academic institutions and government agencies that are promoting biodiversity conservation in PNG and the Melanesia region. In the case of the PNG LNG Project, Mama Graun has signed an agreement with EHL to support conservation education and technical capacity building. EHL will support Mama Graun in its ongoing efforts to implement the Enhancing Conservation Capacity Program, with Mama Graun serving as the program manager, designer, and supervisor.

The program will be delivered in partnership with the University of Papua New Guinea. It will support a conservation management course with eight modules at the post-graduate level. Despite the advanced level, the course is also flexible and adaptable to meet the capacity building needs of communities with varying degrees of conservation education, literacy and expertise. In addition, Mama Graun will provide and administer scholarships for conservation courses at the university. Students will also receive practical experience through field-based work placements with PNG's Institute of Biological Resources and other NGOs, and opportunities to gain mentoring and technical advice from industry experts. To promote the Project's commitment to achieving operational and financial sustainability, Mama Graun will also assist in establishing a sustainable source of funding and monitoring after construction ends.

#6 Facilitating independent advice, evaluation, monitoring and reporting

The value of using credible and independent expertise to help identify, manage, monitor, and publicly disclose the many risks and benefits of a project as large, complex and high profile as PNG LNG in an operating context as challenging as Papua New Guinea cannot be over emphasized. This is the case regardless of the impressive range of technical, managerial and financial resources and skills that a global company such as ExxonMobil and its experienced EPC contractors can bring to the Project.

There is more and more evidence, both in the PNG LNG Project as well as others in similarly challenging environments that independent insight, advice, disclosure, and, where relevant, governance by respected third-party experts is essential to credibility and success. Formal and structured interventions by third-party experts or institutions not only provide additional expertise to enhance the quality of internal risk management systems, standards and decision-making, but can also help to build trust and legitimacy with stakeholders and to complement legal and regulatory oversight and lender requirements.

The PNG LNG Project demonstrates the use of third-party validation and assurance in a variety of models and types of intervention. It should be emphasized from the outset that such models can only ever be a complement, not a substitute, to sound government regulation and oversight. They are an important complement, however, especially in a situation such as PNG where government resources are constrained, and where the government itself is a project funder and equity partner in the Project. The approaches used by or influencing the PNG LNG Project include the following.

Baseline studies, surveys and impact assessments commissioned with independent researchers

EHL has made extensive use of consultants and domestic and international research institutes to undertake the data collection, baseline studies, scientific surveys and stakeholder consultations that underlie the Project's official environmental and economic impact studies, the Environmental and Social Management Plan (ESMP), pre-construction surveys, and other socio-economic and environmental risk assessments, strategies and plans that provide the foundation for day-to-day project management decisions and actions. While not totally 'independent' in the sense that the company pays for these services, the selection of internationally recognized experts who have their own reputations and professional credibility to protect, helps to add an additional level of assurance and accountability beyond what the company's most respected and technically experienced domain experts could offer on their own.

The Project also provided funding for independent international experts to support the PNG government in reviewing and evaluating the Environmental Impact Statement (EIS) to ensure that government officials had access to good technical support and advice as needed. As such, the PNG Department of Environment and Conservation engaged Cardno Acil Pty Ltd. to conduct an independent review of the EIS after it was submitted. The purpose of the review was to determine the adequacy of the assessments and associated documents; determine whether there were any issues not covered or adequately addressed, particularly from the perspective of developing permit conditions for the Project; and make recommendations.

Third-party environmental and social compliance monitoring and reporting

Most important in terms of third-party oversight of the Project's compliance and performance is the role of D'Appolonia, the independent environmental and social consultant appointed by the Lender Group and paid for by the Project. D'Appolonia has been providing engineering, scientific and construction-related services to industrial and government clients for over 50 years. In the case of the PNG LNG Project, D'Appolonia's mandate is "to assess and report to the Lender Group on the Project's compliance with the environmental and social provisions contained within the ESMP, the associated Lender Environmental and Social Requirements (LESR) document, and the Environmental and Social Milestones Schedule, prepared as Appendix H3 to the Common Terms Agreement."²⁴ D'Appolonia's team made three trips to PNG and the Project area before the close of the Project finance agreement in 2009 and generated a report for each of these visits. As of August 2013, an additional nine reports have been generated post the financial close, all of which are publicly available.

Although not subject to the same level of legal reporting requirements and liability, this process of independent environmental and social compliance is analogous to the longstanding practice of financial auditing and assurance. As with financial auditing, ongoing vigilance is required to maintain the appropriate balance between the compliance consultant getting to know the project in detail and working closely with project personnel, with the benefits this in-depth knowledge brings to the quality of insight and advice on areas for improvement, and maintaining necessary independence to assure external stakeholders that the process is legitimate and credible.

Independent advice and monitoring on resettlement programs

Given the high level of expectations, scale of impact, and community and NGO concerns associated with physical and economic displacement of households due to the Project, EHL retained the Environmental Law Centre (ELC) to act as an independent advocate on behalf of displaced people and to ensure that they are fully informed about the resettlement process and aware of their rights and obligations. ELC is a local, nonprofit community legal advice organization specializing in public interest environmental law issues. Its team includes well-respected professionals with a wealth of experience in complex land issues in PNG, including a former Chief Commissioner of the PNG Lands Title Commission and a former magistrate. ELC's role helps to provide assurance to the Lender Group and other external stakeholders with respect to the Project's resettlement performance, its observance of the rights of landowners, and its compliance with PNG legislation and lender requirements. EHL will continue to provide this type of support to landowners and assurance to stakeholders into the production phase.

Formal stakeholder consultations

In addition to an estimated 1,250 formal engagements with communities in the Project area (as of June 2013), EHL has also had more than 500 registered local and international NGO engagements in both Port Moresby and Project areas. In addition it has hosted a number of multi-stakeholder dialogues in Port Moresby with national and international NGOs, government and donor agencies to discuss specific social and environmental challenges and opportunities. Examples include formal consultations during development of the Biodiversity Offset Delivery Plan and hosting dialogues associated with the Extractive Industries Transparency Initiative.

Use of technical advisory committees

EHL has established a number of formal advisory structures, often consisting of a combination of internal experts and external advisers. Examples include its technical advisory committee for the Biodiversity Strategy and its Community Health Advisory Committee, both of which include internationally renowned academics and domain experts.

Cooperating with non-commissioned academic and NGO studies

It is important to note the role of non-commissioned academic, think tank, donor agency and NGO surveys and research studies in influencing good practice and promoting greater accountability. In a project that has the strategic importance of PNG LNG, these add an additional layer of exposure, debate and oversight of the Project's existing and potential impact and performance. As such, they can help to hold the government and the Project operator to account and also provide a basis for dialogue between different stakeholders. Endnote 3 lists some of these research studies and reports to date, all of which are publicly available. Although their findings vary, most of them highlight the following three core areas of concern and risk, as well as opportunity, associated with the PNG LNG Project:

- 1) The risks of such a large-scale project in a country with weak governance generally, and especially weak 'resource governance';
- 2) The challenge of managing 'Dutch Disease' and the need for government and international development agencies to be more proactive in addressing this;²⁵
- 3) The need for the PNG government and EHL to publicly identify, avoid and mitigate the Project's risks and negative impacts and to maximize its benefits and micro-economic contributions.

Linked to these challenges, several NGO surveys have highlighted the need to build the negotiating and organizing capacity of local community groups so that they are better able to engage and negotiate effectively in determining how Project-related risks and benefits are shared.

Even if they don't always agree with the findings and recommendations of these studies, it is fair to say that EHL and other Project partners fully recognize the need to address the above imperatives, and the value of engaging with and providing information to researchers undertaking these independent reviews.



Investment in national content and capacity in PNG

Lack of domestic capacity is one of PNG's major impediments to overcoming some of the complex structural development challenges that the country faces. This includes lack of capacity and capabilities at the level of both individuals and institutions, as well as in physical infrastructure. It includes capacity challenges in every sector – public, private and civil society – and at the national, provincial, district and community level.

The PNG LNG Project's major contribution to the country's development over the long-term will be through the production revenues that it generates. The manner in which the PNG national, provincial and local governments allocate and manage these revenues will be crucial in determining whether the opportunity presented by the Project provides lasting benefit to PNG's broader population. The challenge of resource revenue management is explored in more depth in the following section. This section focuses on six other contributions that the PNG LNG Project is making to ensure more inclusive and sustainable development in Papua New Guinea.

At their core, all of these Project contributions involve building the capacity and capabilities of individual PNG citizens and domestic institutions in the country's public, private and civil society sectors. They also aim to

increase the level of local or national content. This can be defined as the level of investment and value creation that stays within host communities in the Project area and within the country more broadly, and that directly and indirectly helps to increase the socio-economic choice, voice and opportunities for PNG citizens.

The PNG LNG Project team is taking a systematic and disciplined approach to each of these six areas. Its activities include initiatives that are at the heart of the Project's core business and that are essential to its operational, financial and risk management processes, while at the same time contributing directly to development in PNG – what is increasingly termed 'shared value'. Activities also include strategic social investments and philanthropy, and employee engagement programs. New models of stakeholder engagement and strategic partnerships with the government, community-based organizations, NGOs and donor agencies are proving to be essential to achieving effective results.

Prior to reviewing how the Project team is addressing each of these areas in PNG, Box 3 provides a brief overview of ExxonMobil's global National Content Strategy. This global strategy serves as a key foundation for the implementation of national content programs at the project level, including in PNG.

#1	Investing in local workforce and skills development
#2	Developing local suppliers and enterprises
#3	Building the capability and resilience of communities and households
#4	Promoting women's empowerment
#5	Strengthening health systems
#6	Supporting infrastructure development

Box 3: Applying ExxonMobil's global National Content Strategy to PNG

ExxonMobil's global National Content strategy was created to provide a more consistent and systematic framework for implementing the company's socio-economic development projects and building human, social and economic capital in the diverse locations where it operates around the world. This strategy was one of the first of its kind in the extractive sector to be formalized at the corporate level, and given significant resources for implementation.

The strategy has three core components, all of which are relevant for different national and community circumstances, needs and challenges, and for different stages in the project lifecycle. They are especially important in the construction phase. These include:

- 1) **Workforce Development:** The recruitment and development of qualified nationals/local employees for employment during the project construction phase and to support ongoing operations
- 2) **Supplier Development:** Developing and purchasing goods and services from local companies and building local enterprise capacity to form a more competitive industrial base
- 3) **Strategic Community Investments:** Investments in health, education, agriculture, women's empowerment and infrastructure that assist in the development of local capabilities and help to support sustainable socio-economic development in host countries and communities.

In addition to the company's own global policies and national content strategy, there are growing demands and statutory requirements from host governments that project operators maximize the employment of local nationals and use local companies for the supply of goods and services whenever they are competitive with foreign-sourced goods and services. There is also growing interest on the part of donor agencies and development finance banks to support large companies in implementing national content strategies.

PNG LNG's National Content Plan²⁶

The PNG LNG National Content Plan was approved in January 2009. The plan determines existing local capacity; quantifies Project needs for labor and suppliers; develops a strategy to address identified gaps and develop local potential; sets goals and targets; and outlines a stewardship process. The latter includes the creation of a national content steering committee, a system for monitoring and reporting performance against targets, and a public awareness

agenda to keep government and other key stakeholders informed of the Project's national content performance against its commitments. The mandate of the national content committee is to provide strategic direction, monitor performance of the Project operator and its contractors in meeting their responsibilities, and continue to develop and enhance National Content throughout the Project's construction and production phases without sacrificing safety, environment, quality, cost or schedule. The PNG LNG National Content Plan identified 11 core objectives, against which performance is monitored and publicly reported. These are summarized in Appendix V. Once production commences, there will be separate plans for Training and Vocational Education and for Procurement and Supplier Development.

Challenges in implementing the National Content Plan in PNG

EHL has had to tackle a number of challenges in implementing its National Content Plan in PNG. Most of these are relevant in all large-scale projects, but they are intensified by the operating context in PNG and the high profile and expectations associated with the PNG LNG Project. They have included:

- Expectation management, given the high, often unrealistic expectations associated with the investment
- Managing the decline in jobs between the construction and production phases
- Lack of existing local training facilities and certifications for necessary vocational and business skills
- Managing issues with supplier integrity and quality, which is especially challenging given that many local suppliers have never worked with such a large and complex project before
- Fairly allocating jobs and business opportunities among diverse groups, given PNG's high level of cultural diversity and inter-clan tensions
- Addressing considerable gender inequality, ensuring that women are included and empowered
- Promoting a culture of entrepreneurship, given that over 80 percent of people live in rural areas, with livelihoods based primarily on subsistence agriculture and barter economies. There is also a challenge of building the necessary economic institutions to support small, medium and micro-enterprises, including financial and business support services, and building a culture of entrepreneurship.

1 Investing in local workforce and skills development

PNG's skills shortage is well documented. It is especially severe in areas such as engineering, mining, geoscience, procurement and project management, and is a problem at all levels, from basic trades and construction skills to college and university-level qualifications. Research by the Institute of National Affairs also points to the lack of behavioral and workplace competencies among local workers, such as leadership, literacy, numeracy, self-motivation, teamwork, information technology, and time consciousness.²⁷

The PNG LNG Project has invested in dedicated education, training, capacity building and mentoring programs in order to meet its public commitments to maximize local employment opportunities during the construction and production phases of the Project, while at the same time working to deliver the Project safely and per required specifications on schedule and on budget. The Project's workforce development and skills program ranges from basic trade skills to graduate-level programs, and from classroom learning to a wide variety of experiential and on-the-job learning opportunities, both in PNG and abroad. The program has also covered the full lifecycle of the Project, from construction to production, operations and maintenance. Particular attention has been paid to being more inclusive of women in both employment and skills training opportunities.

The Project team has invested in physical and institutional infrastructure to support training and education, as well as supporting over 10,000 individuals through a variety of full-time degrees and courses, internships, workshops and on-the-job training options. Examples of good practice and lessons learned include the following.

Training local construction workers to international standards

In order to train large numbers of PNG nationals for the construction phase of the Project, EHL invested at the outset to build and manage two dedicated and fully equipped training facilities. In addition to providing internationally-certified courses to PNG nationals, the Project team also invested in training local instructors. Training of workers and instructors was based on the Australian Quality Training Framework (AQTF) – a demand-driven, industry-led set of standards and processes. Trainees graduate with Technical and Further Education (TAFE) Australia awards, at different levels of attainment or certification.²⁸

Contributing to longer-term individual and institutional capacity

Investing in an internationally-recognized training framework has been important to meet the Project's own technical and safety requirements. It is also contributing to PNG's longer-term foundation for vocational training and to the economic opportunities available to the workers who have gained certifications. At an individual level, such certification gives workers the opportunity to get good jobs within PNG or to work outside the country if there are not enough formal sector jobs available locally once the construction phase is completed.

The two training centers were established to serve only the PNG LNG Project, but it is envisaged that once construction is completed both the physical facilities and the local instructors will form the basis for a public-private partnership with the PNG government, donor agencies and other private sector organizations to support ongoing vocational and technical training in PNG.

Developing technicians with a balance of academic, technical and social skills

About 150 young Papua New Guineans have been selected on a competitive basis from over 9,000 applicants across PNG to be trained to international standards as operations and management technicians. They represent a new generation of potential national and industry leaders. Having succeeded through a rigorous selection process, the training program offers students a foundation for academic, technical and personal development, as well as a variety of opportunities for team-building and leadership across their diverse cultures and exposure to international best practices in either Canada or Malaysia.

Benchmark testing across academic subjects, such as physics, mathematics, chemistry, and computing, has shown that of the two intakes selected both are achieving an academic average of over 90 percent. They have also met or exceeded ExxonMobil's English language skills requirements. After an initial period of academic and basic skills training in the oil and gas industry, the trainees select options for advanced skills training in specific crafts such as process operations, mechanical, instrumentation, and electrical applications. They are also exposed to intensive training on personal and process safety issues; operations excellence and integrity; ExxonMobil's corporate values and business standards; and ongoing leadership and team-building opportunities. All of the trainees have been given non-binding job offers to work at the PNG LNG Project once they complete their studies, but are not required to take up these offers.

Investing in Papua New Guinean graduate engineers and managers

Another core pillar of the Project's strategy for local workforce and skills development is the ongoing support that EHL provides to PNG graduates. Over the past three years almost 40 graduates in engineering and other disciplines have participated in the company's graduate development program, which mirrors similar

programs that the company operates around the world. Among other commitments, the program places PNG graduates in ExxonMobil operations in Melbourne and Sydney, as well as Port Moresby. By the time operations commence in 2014, the Project operator will have supported further education and experiential training opportunities for 16 engineering graduates from PNG, in addition to the programs supported by EPC contractors and other training outlined above.

Leveraging investments in training through EPC contractors

The Project's EPC contractors have also invested in diverse training opportunities for PNG nationals, both within PNG and internationally, and at all skill levels. In the case of the larger EPC contractors, this commitment fulfills the national content requirements laid out in their contracts with EHL, but is also a feature of their own corporate social responsibility programs. Over the past three years it is estimated that contractors have offered thousands of workplace-based and classroom training opportunities for local workers focused on the required construction and technical skills within their scope of work, as well as safety and personal development skills. Analysis by EHL in 2011 identified different types and levels of training funded by EPC contractors across a broad spectrum of topics and expertise domains. Examples have ranged from basic first aid to advanced safety and risk management; from basic construction, electrical and welding skills to the use of complex equipment; from basic driving capabilities and road safety awareness to the ability to operate large cranes and bulldozers; and from personal health awareness to broader environmental management capabilities.

#2 Developing local suppliers and enterprises

The PNG LNG Project has implemented an integrated strategy to develop local suppliers to provide goods and services during the Project's construction and production phases and to promote enterprise development more broadly in PNG. This strategy is driven in part to meet the requirements of the *PNG Oil and Gas Act 1998* to, "optimize the participation of PNG suppliers – especially Representative Lancos, and to stimulate capacity building in selected PNG business segments where sustainable activity is expected." The strategy is also driven and guided by the requirements of ExxonMobil's own corporate policies and global National Content Strategy.

The foundation of PNG LNG's supplier development strategy has been the establishment of an independent Enterprise Centre, operated by the PNG Institute of Banking and Business Management (IBBM), which was officially opened in April 2010. In addition, the PNG LNG Project has directly supported extensive capacity building, governance advice and institutional strengthening for Lancos operating in the Project area. By mid-2013, the Enterprise Centre had assisted more than 15,200 entrepreneurs through its various programs. The Centre had also provided the equivalent of more than 8,300 training days and over 1,200 advisory and mentoring days to Papua New Guinean businesses. Key lessons are outlined below.

Strengthening a trusted local institution with international expertise and accreditation

IBBM was selected to serve as the independent host and manager of the Enterprise Centre through a competitive bid process. Created in 1965, IBBM is the longest established private sector training organization in Papua New Guinea. It operates on a not-for-profit commercial basis, earning most of its revenue from the organizations and entrepreneurs that use its services. This model helps to ensure that it remains

demand-driven and adapts to the changing business landscape in PNG. Its vision is to become a fully-fledged management college serving PNG's evolving private-sector capacity building needs. In addition to being a well-established and respected institution within the country, IBBM is also able to offer a range of internationally accredited vocational qualifications in banking, accounting, financial planning and analysis, and business management. Almost all of its senior managers and instructors have some international management or education experience. The Project's approach of strengthening existing institutional capacity within PNG through IBBM, while increasing international linkages and accreditation, offers high potential for long-term sustainability if additional support can be leveraged in future from other large corporations in PNG and donor agencies.

Providing resources for a comprehensive and flexible suite of business support services

By selecting a well-established local institution to serve as the coordinator for the Enterprise Centre, the PNG LNG Project was able to ensure that its own local suppliers had immediate and reliable access to an existing range of core business support services. At the same time, EHL has provided additional resources for IBBM to enhance the quality and expand the range of its services, which benefits the Project's own local suppliers as well as small and medium enterprises in PNG more broadly. The modular approach to service provision adopted by IBBM also makes it easier for resource-strapped local enterprises to focus on meeting their specific needs. Services range from the basic provision of information on new business opportunities and potential contracts to the delivery of business training and networking opportunities through a combination of accredited courses, workshops, seminars and events. They also include dedicated business consulting, advisory and mentoring services for more advanced individual enterprises and entrepreneurs.

Supporting the creation of a rigorous business assessment service

The Project has supported the Enterprise Centre, both financially and technically, to establish a Business Assessment service. This service helps local enterprises to qualify for contracts not only with PNG LNG but also with other companies and government. The service draws lessons from ExxonMobil's global supplier management system and uses a proven methodology to evaluate PNG enterprises against eight core elements of effective business. These are: 1) organization and governance; 2) business management; 3) financial management; 4) personnel management; 5) safety, health and environment; 6) quality control; 7) inventory management; and 8) citizenship and reputation. The assessment provides participating companies with a 'gap analysis' of areas they need to improve and with a clear business improvement plan and support to do so. It also provides a credible and consistent basis for classifying local companies in terms of their performance and capability. This in turn gives assurance to other large companies, projects or government entities that are looking to procure local goods and services. It also provides a level playing field and element of transparency to minimize conflict among local companies competing for business opportunities.

Enabling the establishment of a PNG supplier database

Once local companies have met a certain level of performance criteria they are eligible for registration on the supplier database that has been created by the Enterprise Centre for PNG LNG. Within three years, this has become PNG's largest structured and independently validated database of local suppliers. The database can be accessed by other companies, contractors and government entities looking for local PNG-based suppliers and vendors, thereby helping to build private sector capacity more broadly within PNG in addition to meeting the Project's own direct needs.

Facilitating access to finance

Drawing on its extensive training contacts and networks in the banking sector, IBBM is well placed to facilitate access to banking and other financial services for the enterprises it advises and assesses. Although this service is at an early stage it could play a valuable role in combination with other business support services to tackle the problem of the 'missing middle' – the fact that many small and medium enterprises in PNG, as elsewhere, are too large to access microfinance but too small and high risk to qualify for commercial bank loans.

Strengthening governance and capacity of Lancos

Lancos are an essential component of PNG's business landscape. They have become a key partner and source of both workers and suppliers for the PNG LNG Project. From the outset, the Project team has supported a multi-faceted approach to building their capacity. In addition to provision of advisory and mentoring services from the Enterprise Centre and targeted training for Lanco Directors and Board Members, EHL has established a dedicated Business Development team to work with the Lancos. It has also funded training, mentoring and the provision of technical support, and helped selected Lancos to establish Joint Ventures with experienced regional or international partners to help build their capacity and their business scope.

There is great potential for the work of the Enterprise Centre to be enhanced and expanded in the future with support from other large companies and donor agencies. If additional support for the center is made available it can serve more domestic enterprises and drive increased efforts to build a more diversified, gender-balanced and locally-skilled private sector in Papua New Guinea.

#3 Building the capability and resilience of communities and households

The PNG LNG Project is implementing a proactive community development support plan in addition to its ongoing activities to identify, avoid, mitigate and compensate for negative impacts on local communities and households. This plan aims to provide community-based organizations and individual community leaders and households with tools to define and drive their longer-term development and prosperity. This is no easy task. Community needs are great, especially in the Highlands, while the quantity and quality of government services are low. Church groups and NGOs, while often effective, also lack resources. As previously outlined, the PNG LNG Project has to manage expectations and avoid becoming the *de facto* public service provider while still demonstrating its commitment to supporting the valid development needs and aspirations of its community neighbors.

After consultation with the communities in question, and the commissioning of evidence-based research on existing community assets, capabilities and needs, the Project team identified the following three priority areas for engagement and investment:

- 1) **Strengthening social resilience** – projects that focus on enabling individuals and communities to more effectively prepare and organize themselves to respond to Project impacts, and to capitalize on Project opportunities that might improve the quality of their lives. Key focus areas are education; improving the productivity, reliability and food security of subsistence agricultural production; and social strengthening through, for example, helping women's groups to organize, operate and negotiate effectively.
- 2) **Local economic development** – projects aimed at increasing income-earning opportunities and self-reliant livelihoods for communities, including though not only those households that have been resettled.
- 3) **Community capacity building** – projects to support other efforts of communities to identify and meet their development needs in a more effective and sustainable way.

Some of the lessons and emerging good practices from the first three years of implementing this community development support plan are as follows:

Working through and strengthening existing public and civil society organizations

Rather than establish its own community foundation, the PNG LNG Project has chosen initially to work with government, church groups, and other civil society organizations to try to strengthen the institutional capacity of existing service providers and of community-based organizations themselves. This approach is not mutually exclusive to creating a company foundation, as some other resource companies in PNG have done, but it relies more heavily on working in partnership with others to build the capacity of government-funded health systems, education systems and infrastructure, and of local NGOs and community-based organizations.²⁹

Investing the necessary time to facilitate community participation and decision-making

The Project's L&CA team emphasizes that compared to more traditional approaches to community development that focus on writing checks and building physical structures (although these remain useful in specific cases) the team has focused more on building the capability of individuals and institutions, and on supporting them to create their own development plans, priorities and projects that are both achievable and meaningful with respect to positive development outcomes. This is a process that takes a lot of time, patience and ongoing dialogue in order to build the necessary mutual trust and shared vision. Although the Project team supports short-term projects that can mobilize community leaders and demonstrate early outcomes and results, their focus is on developing

the type of local capacity and relationships that can serve as a foundation for more inclusive and sustained development over the long-term.

Strengthening community decision-making structures

Most communities within the Project area require support in creating and strengthening local leadership institutions. These can range from community-led decision-making bodies and conflict resolution mechanisms to women's and youth groups and local environmental and economic development organizations. In each community, the Project team has undertaken consultations with local leaders and, where possible, with relevant government agencies and other partners to identify key needs and what type of *institutional capacity* building can most effectively serve these. In the four communities surrounding the LNG Plant, for example, the team is supporting an ongoing effort to enhance the role, operational capabilities and governance of Village Development Committees. These are responsible for identifying community development priorities, but often lack management support and resources. In the communities in the Highlands, a major focus has been on helping to strengthen women's groups. Given the considerable gender inequality in PNG, it is hoped that these groups will play a role in strengthening the voice and choice available to women at the community level.

Building individual capacity, especially of women and youth

The Project team is also undertaking a variety of activities aimed at building *individual capacity* within its focus communities, ranging from education projects for school children to training women on income generating opportunities and raising their awareness of affordable family health and nutrition options. It has also partnered with the Entrepreneurial Development Training Centre (EDTC), a PNG company, to deliver a personal development program for people in local communities, called Personal Viability Training (PVT).

PVT is a multi-level education program that is relevant for all ages and education levels. It focuses on helping individuals to understand and improve their time and money management, to gain confidence for starting a business and become more self-reliant. Participants to date have ranged from teenagers to people in their 50s, and from youth leaders and the heads of women's groups to local pastors, microenterprise owners and community-based professionals such as teachers and healthcare workers. As of June 2013, over 1,300 people from the Hides, Komo, Kutubu, Moran, and LNG Plant site areas had participated in the training. EDTC has the ability to deliver a teach-the-teacher model, so that PVT graduates can become teachers and replicate the program within their communities.

Supporting agricultural research and extension

Given the central role that subsistence agriculture and food production play in the lives and livelihoods of many households living in the Project area, efforts to improve the productivity and nutritional value of selected crops and to improve farming techniques, extension services and agricultural development planning have been a growing focus for community development. These efforts include but go beyond support to resettled households. Among other activities, the Project has partnered with the National Agriculture Research Institute and PNG Cocoa and Coconut Institute to identify high-potential varieties of selected food crops, to procure planting materials, and to establish nurseries. One example has been the introduction of pathogen-tested sweet potato varieties. These have been cultivated and distributed via demonstration farms and agricultural extension programs and have the potential to yield three times more than local varieties. The Project has also identified and supported model farmers and encouraged the development of small enterprises that directly serve farmers and the rural economy.

#4 Promoting women's empowerment

There is growing recognition in Papua New Guinea of the need for much greater gender equality and support for women's empowerment. As the World Bank states: "Gender inequality is a significant development challenge in PNG. ... Women have substantially poorer access to health care services, and lower levels of educational attainment and literacy pose barriers to their equal participation in economic activity and political life. Most women lack access to credit, banking and markets. Gender based violence is reportedly very high, and women's access to justice and legal protection is low."³⁰ The importance of empowering women cannot be over-emphasized, both generally and within the extractive sector. Unless there is active empowerment of women as well as a sustained focus on job creation and effective benefit sharing, even the most successful projects will fail to achieve more inclusive development. As a result, a growing number of donor agencies, domestic and international NGOs, and some private sector companies are making gender equality and the empowerment of women and girls a priority.

The PNG LNG Project has demonstrated support for greater gender equality and women's empowerment through its own workplace policies, the implementation of the Project's Environmental and Social Management Plan, and through its support for a variety of strategic community investment Initiatives and research and advocacy work. Some of the lessons and good practices emerging from these activities are outlined below.

Serving as a corporate role model for women's leadership in the formal workforce

The PNG LNG leadership team is arguably one of the most gender diverse in PNG, especially in the extractive sector, and it has used this platform to demonstrate best practice in a proactive and high-profile manner. Both senior female and male executives serve as vocal advocates for women's leadership in a variety of forums

and as mentors within the company. Women hold two of the most senior positions in the Project: Decie Autin is the Upstream Project Executive for the PNG LNG Project, with overall responsibility for delivering the entire construction phase safely, per required specifications, on schedule and on budget; and Kim Hahn is Operations Superintendent for the Building the Producing Organization (BTPO), with a key role in managing the transition from construction to production. A number of leaders in important technical groups such as P&GA, L&CA and safety, health and environment are women. They are serving as important role models to women leaders at the national, provincial and local levels. The Project has also appointed female "women's champions/confidants" in the workplace to improve the treatment of female worker complaints as well as their comfort in the workplace.

Making explicit commitments to recruit and train more young women

One of the most important investments the company is making to develop the next generation of women leaders is its commitment to proactively include more women in its various graduate development and vocational and technical training programs. For the production operations and maintenance program, out of a total of 137 Papua New Guinean technician trainees (in two separate intakes), 38 were women. Meanwhile, some 526 of the 1,796 graduates from the Project's two construction training centers have been women. Although these statistics may appear to be low compared to OECD standards, they are encouraging in the context of PNG's significant level of gender inequality.

Supporting the development of women entrepreneurs in the supply chain

Another key vehicle for promoting women's empowerment in PNG has been the Project's local supplier development program, and especially the work of the Enterprise Centre. Sweta Sud, the Enterprise Centre's Executive Director, is a passionate advocate for women's economic empowerment and

has taken proactive measures to support women in business where possible. The Project's engagement with Lancos has also encouraged some women-owned and managed businesses. The shareholding nature of many Lancos provides groups of women with an opportunity to pool their often-limited resources and expertise in establishing a business enterprise. Although still the exception, there are a few emerging examples of this model in practice.

Identifying and investing in women community leaders

A key focus of the Community Development Support strategy has been to support and strengthen women's groups and individual women leaders at the community level. Being able to organize effectively enables women to leverage their economic resources and increase their voice and participation in decision-making. To date, the Project team has supported women's groups in sharing the costs and risks of increased access to business training, finance, technology, markets and income generating opportunities; undertaking joint efforts to advocate for improved access to health care and education for their families; and working together to tackle particularly difficult issues such as weak law and order, and gender-based violence. The Project team has also been proactive in recruiting women to participate in the Personal Viability Training Initiative. Of the more than 1,300 people who have participated to date, 649 have been women. The Project's food processing and nutrition education and train-the-trainer program, with some 650 graduates, has provided training to women on how to prepare nutritious foods from local ingredients and how to bake and sell goods for local markets. As outlined in Box 4, EHL has selected some outstanding women community leaders in PNG to participate in ExxonMobil's Global Women in Management Initiative.

Leveraging evidence-based research and public advocacy on gender equality

The Project has also supported several data collection and policy initiatives such as the *2011-2012 PNG Country Gender Assessment*, which was a collaborative effort

between the government, the World Bank, the United Nations, Oxfam, the National Council on Women, EHL, and other partners. Globally ExxonMobil has funded a project with the UN Foundation to assess the most effective interventions in empowering women, which will have relevance for PNG as well as other countries. There is great potential for increased corporate leadership and funding in such activities.

Jointly focusing on women's issues of relevance to the extractive sector

The Project, together with other companies in the extractive sector and the PNG Chamber of Mines and Petroleum, is working with the World Bank on a groundbreaking program called the *Women in the Extractives Industries Initiative*. One goal is to undertake policy advocacy focused on gender issues of particular relevance to the oil, gas and mining sector in PNG. To this end, the *2011-2012 PNG Country Gender Assessment* had a section focused specifically on gender issues related to extractives industries.

Although results have been mixed, most energy and mining projects in PNG now have explicit programs in place to avoid and mitigate negative social and economic impacts on women, and to strengthen women's groups and associations. Models are starting to emerge to ensure that women's interests are better represented in decision-making bodies and processes and that a certain percentage of revenues from oil, gas and mining projects go directly to women (with PNG's Ok Tedi mine being a pioneering example). Workplace and community grievance mechanism procedures are also being designed that are available only to women. The Project team is also supporting the World Bank's *Women's Self Reliance Program*, which is aimed at providing training and livelihood opportunities to women living in oil, gas and mining communities.

Box 4: Participation of PNG leaders in the ExxonMobil Global Women in Management Initiative

The Global Women in Management (GWIM) program is a cornerstone of ExxonMobil's program to help women fulfill their economic potential and to drive economic and social change in their communities. ExxonMobil partnered with the US-based Centre for Development and Population Activities (CEDPA), to establish GWIM in 2005. CEDPA itself was founded in 1975 with a mission to improve the lives of women and girls in developing countries.

The GWIM program provides an integrated and highly participatory approach to leadership development for mid-career women with 8 to 10 years of experience working at community, sub-national or national levels who are selected from non-governmental, community and faith-based organizations. Once selected, participants have access to a month-long capacity building workshop with women leaders from all of ExxonMobil's countries of focus. They also have opportunities to meet outstanding role models, access to a year-long coaching relationship with experienced CEDPA alumni, and are able to participate in ongoing national and global networks and support activities.

EHL has supported 17 women leaders from Papua New Guinea to become members of the GWIM program and alumni network. Many of them have been selected from communities and/or non-governmental organizations working in the PNG LNG Project area. Although relatively small in number, they are an inspiring group of leaders – both individually and collectively – who are having a demonstrable development impact back in their own organizations and communities.

A number of participants have reinvested the skills they gained in the GWIM program to offer training and mentoring to other women leaders within their own organizations and communities. Several have also established or scaled-up organizations and programs to directly support women and girls and to serve the public good more broadly. The following small sample illustrates their multiplier impact helping to improve the lives and opportunities of other women in PNG, both in terms of economic empowerment and social resilience:

Marilyn Peri attended the GWIM program in Washington DC in 2008. Building on her background in nursing, when she returned to PNG she established her own NGO, Hela Women's Development Foundation, which provides capacity building to local women in areas such as income-generation, health and nutrition. She has addressed the PNG Congress on the challenges she faces as a community health worker and become a vocal advocate for the role that women play as community leaders. In 2011, Marilyn partnered with another GWIM graduate, **Veronica Payawi**, who has a background in business, to mobilize about 200 women from the Hela region to buy a truck with the support of Larry Andagali, the founder of the Landowner trucking company Trans Wonderland Limited. Together they became the founders and co-owners of Upstream Hela Women Limited, which they define as an economic and social organization dedicated to women's empowerment. The organization has a team of 10 women directors, 207 individual shareholders, and five groups of shareholders, which have more than 10,000 members. In addition to now being part of the Trans Wonderland Trucking consortium, they have raised funds to carry out a feasibility study to establish a poultry business.

Cathy Alex from the Southern Highlands has built upon her background in agriculture and her experience in GWIM to promote and support women farmers. With a major in agricultural science, Cathy now works as the Senior Sustainable Livelihood Program Officer with the Community Development Initiative Foundation, which has been a pioneer in community-led and participatory approaches to development in PNG. She focuses on helping women to improve their farming methods and agricultural productivity, thereby increasing their incomes and food security, and acts as a advocate for women in agriculture more generally.

A number of the GWIM and CEDPA alumni are also working in the PNG LNG Project team in a variety of leadership and community liaison capacities. They include **Sisa Kini**, the Social Impacts Manager for the Project; **Turiza Tandago**, a Business Development Advisor for EHL and the founder and volunteer Chairperson for the Angore Women and Youth Development Foundation; and **Agnes Suine**, a member of the Project's Livelihood Restoration Team. She is helping to build the capacity and social resilience of women in rural communities in the Project area, with a focus on life skills training, income generation and business skills, and health, hygiene and food processing.

#5 Strengthening health systems

The primary objective of the Project's community health program is to avoid or reduce risks to, and impacts on, community health during the Project's lifecycle, including the current four year construction and the future 30 year production and decommissioning phases. Poor community health also represents a source of risk to the workforce (many of whom are from local communities) and therefore to the Project, especially with respect to infectious or contagious diseases such as tuberculosis and sexually transmitted diseases. In addition, the program aims to select biomedical investments that provide "extended health benefits" to PNG more broadly, such as investments in diagnostic and research capabilities, relevant medical equipment, training the next generation of PNG scientists and healthcare workers, and helping to develop sustainable rural health care delivery strategies in Project areas. Emerging lessons and good practices from PNG LNG's community health program include the following.

Using independent data collection, monitoring and evaluation, based on international good practice

EHL recognized from the outset that a wide range of stakeholders would be following the community health impacts of the Project. It acknowledged that some would be skeptical about claims made by the Project team on whether or not its mitigation of negative impacts had been successful, or whether there were positive community health benefits resulting from the Project. As such, it saw the need to use credible and internationally recognized processes to establish a pre-project baseline for community health indicators, and then undertake longitudinal monitoring and evaluation in an objective, scientifically validated and transparent manner, including the use of matched control sites.

The Integrated Health and Demographic Surveillance System (iHDSS) platform was selected as the basis for monitoring and evaluation. The iHDSS is a

methodology used to design, collect and evaluate health, socio-economic and behavioral datasets at the household level in resource-constrained countries that do not have adequate national data collection and statistical services. It enables the Project to collect longitudinal data on a variety of population and household topics across the target population, thereby providing objective information that can be used to develop appropriate intervention measures. One of the key attributes of the iHDSS approach is that it is an internationally recognized and tested system that is community-based, participatory and scientifically rigorous.

The Project team also commissioned an independent *Health Impact Assessment (HIA)*, which among other approaches, adopted the internationally tried and tested '*Environmental Health Area*' approach to identify key risk factors, categorize the bio-medical and social determinants of health in the Project area, and design appropriate models of intervention and monitoring.

Working through and strengthening existing health research and delivery organizations

The Project team has made a strong commitment to work with and strengthen the capacity of existing PNG research institutes, public district hospitals and clinics, and locally-focused health NGOs. As with the Project's investments in training facilities and the Enterprise Centre, from the outset the goal has been to either build the capacity of existing institutions or to implement plans that enable capacity developed specifically to meet Project needs to be shared with other public or private sector health providers over time. The Project has also aimed to leverage impact and achieve more systemic and integrated results by establishing a small number of strategic community health partnerships. Two of these partnerships with the PNG Institute of Medical Research and Populations Services International are summarized in Box 5.

Box 5: Strategic partnerships to strengthen health systems and outcomes

The Partnership in Health Program with the PNG Institute of Medical Research

A Memorandum of Understanding was signed in 2010 between EHL and the PNG Institute of Medical Research (IMR). IMR is a research institute that has almost 50 years of experience of working in laboratories and field-based research sites across PNG. The partnership between IMR and the PNG LNG Project has the following six strategic objectives: 1) national capacity building; 2) establishment of demographic surveillance systems for longitudinal monitoring and evaluation focused on mutually selected population groups and disease burdens; 3) support to expand and strengthen diagnostic capabilities in the area of emerging infectious diseases; 4) ongoing efforts to control malaria and tuberculosis in locations adjacent to the Project's operations; 5) research for improving healthcare delivery in rural settings more broadly; and 6) support to strengthen IMR's own project management capacity and financial stewardship.

One of the most ambitious joint investments undertaken between IMR and the Project has been the construction of a National Infectious Disease Diagnostic and Research Laboratory. This is a state-of-the-art laboratory to support more reliable, rapid and sustainable diagnosis of emerging viral diseases in PNG, as well as better diagnosis of malaria

and tuberculosis. In addition to building and equipping this new laboratory at the University of PNG School of Medicine and Health Sciences, and enhancing a secondary back-up lab, the partnership is aiming to expand scientific education and training opportunities for young PNG researchers. The new laboratory was completed within less than a year, and underwent independent quality assurance and certification in 2013 as part of the partnership agreement.

The Enhanced Community Health Project with Population Services International

A Memorandum of Understanding was signed in 2010 between EHL and Population Services International (PSI) to address the following four program areas: 1) malaria prevention and control; 2) water, sanitation and hygiene-related disease prevention; 3) sexual and reproductive health; and 4) health worker training and education focused on supporting nurses and community health workers in the Project area. PSI is providing expertise in areas such as social marketing, behavior change communication, market-based solutions, and local capacity building. It is engaging dozens of local NGOs, churches, and communities to spread health education and outreach through existing networks, while at the same time using new platforms such as social media to enhance impact.

Harnessing employees and contractors to support community-led health activities

Another important lesson from the first few years of the integrated community health program has been the potential of mobilizing the Project's own local workforce as peer educators, health ambassadors, and community volunteers in their villages and kinship groups (*wontoks*). This approach has had a number of advantages and multiplier effects. First, there is compelling evidence that peer educators are the most successful agents in driving behavior change and improved health awareness and prevention at the household and community level. PNG LNG's workers receive information on health and safety issues every day at work, and the Project team is encouraging them to take this back to their homes and communities. Second, harnessing the Project's own workforce as peer educators is a cost-effective and efficient approach that can supplement – although certainly not replace – the

work of usually over-stretched and under-resourced community health workers. Third, in a number of cases, EHL and its contractors have provided financial and in-kind assistance to its workers and community volunteers to implement education and health-related construction projects identified as priorities by their community.

Investing in projects that combine world-class technology and individual capacity building

In many of its health initiatives, the Project explicitly combines the provision of modern technology and physical infrastructure with targeted efforts to build the individual capacity and efficiency of the researchers and healthcare workers who will use these technologies and facilities. This helps to provide both the 'hardware' and the 'software' needed for project sustainability.

#6 Supporting infrastructure development

There is strong agreement among the government, the business community and the donor community in PNG on the crucial need for both the public and private sector to invest in infrastructure. In particular, there is recognition of the need for improved road and air transport, electricity and water utilities, and communications infrastructure as well as institutional capacity to effectively manage these, such as governance, engineering and technical expertise and project management skills.

The PNG LNG Project is playing a role in contributing to solutions and can continue to do so in the future, especially if other major corporations join the effort. In almost every case, the Project is combining the development of physical infrastructure with the strengthening of associated institutional capacity and human capital. It is making the following broad types of contribution to co-invest in the country's infrastructure, all of which offer lessons for elsewhere even if the specifics are unique to PNG.

Reinforcing existing infrastructure to directly meet Project construction priorities

A key contribution in this area has been the more than US\$150 million in investment that the Project has made into maintaining the Highlands Highway, a crucial 700 km artery across PNG that connects the port city of Lae with the remote Highlands region. The road has faced serious decline in recent years due to a combination of public sector underinvestment, harsh weather conditions, geo-hazards, heavy usage in general, and, since 2010, increased usage as a result of PNG LNG construction needs. Although Project usage at the height of construction in 2012 accounted for only 10 percent of total volumes. Poor security and road safety conditions have exacerbated the challenge of ensuring reliable road transport. The Project team's investment in the Highlands Highway has been undertaken in

large part to make sure it remains open to avoid costly construction delays, and to avoid and mitigate the negative impacts associated with the heavy usage the Project has made of the highway. At the same time, the Project team has made a strategic decision to ensure that its investments also result in longer-term benefits to improving the highway.

The Project has worked with the PNG Department of Works on a number of upgrading and maintenance activities. It has invested over 320 million PNG Kina (about US\$146 million at June 2013 exchange rates) directly in road upgrades, repairs and maintenance.³¹ This included the replacement and strengthening of over 20 bridges. The Project team has also donated materials and equipment to the government to support public-led programs. It funded an estimated US\$4 million study by the engineering firm Bechtel to develop a 20 year plan for improving the Highlands Highway, which is directly aligned with the government's infrastructure plan. In addition, the Project sponsored implementation of the National Road Safety Council's 'Road Safety Awareness Campaign for the Highlands Highway', with some 50,000 participants, and has provided other advice and technical assistance relating to challenges of security and road safety.

Most of the Project's investment in the Highway has been in the stretch between Mt. Hagen and Hides. Other public and private sector organizations, such as the Australian government, Asian Development Bank and the Porgera Joint Venture also fund road repair and maintenance over sections of the Highway. The Australian Government in particular has invested heavily for over a decade. As a result of the combined investments made by the PNG government and these partners, in 2012 the Highlands Highway was open for traffic 95 percent of the year, compared to an historical average of around 70 percent. The Project has also funded upgrades and repairs to other existing infrastructure such as the government-owned Tari Airport in the Highlands region and to marine facilities.

Building new infrastructure to directly meet Project construction priorities

The Project has also made large investments in building new physical infrastructure. Two multi-million dollar training facilities constructed to support Project needs, one in Port Moresby and a second in Juni (some 45 minutes outside Hela's provincial capital of Tari), hold significant long term potential to further support PNG's human capital development. The Port Moresby facility requires little additional investment to support ongoing vocational training activities. The Juni facility, while designed and used for vocational skills development, could be used as a multi-purpose training as well as local government administrative support facility. In addition, the construction of the Komo airfield in Hela, with its 3.2 kilometer long runway and state-of-the-art navigation systems, has the potential to support expansion of commercial as well as charter aviation links between the highlands and urban centers such as Port Moresby and Lae.

Facilitating ancillary infrastructure

The Project is also indirectly facilitating other public-led infrastructure projects by contributing its extensive engineering and construction capabilities to selected initiatives. This has included the provision of engineering support and construction and contracting oversight to the national government, and to several provincial governments and Landowner companies to review options for the most effective use of the substantial Infrastructure Development Grants that will flow to the region after 2014 as part of the PNG LNG Benefit Sharing Agreements. These grants are estimated to be in the region of 1.2 billion PNG Kina (about US\$548 million at the June 2013 exchange rate).

Another multiplier benefit of the Project's activities has been the opportunity to open up a backbone of fiber optic cable along its pipeline. An agreement was reached between the Project, the Independent Public Business Corporation of PNG, the Southern Highlands Provincial Government, and Oil Search Limited to share

the costs and benefits of installing a 750 kilometer fiber optic cable along the length of the PNG LNG onshore and offshore pipeline. This will help meet the Project's own telecommunication needs, but also open up communications capabilities for the country more broadly.

Supporting infrastructure development through community investment programs

Another emerging lesson from the Project construction phase has been the opportunity to build or renovate physical and institutional infrastructure at both a national and community level through strategic community investment activities. Examples range from the development of the National Infectious Disease Diagnostic and Research Laboratory in partnership with the PNG Institute for Medical Research to supporting community-led renovation of local health facilities and schools. Key lessons have included the importance of combining the physical infrastructure and any associated technology, with appropriate skills development and individual capacity building; and working in partnership with existing organizations and service providers to ensure sustainability of such infrastructure projects.

As the Project transitions from construction to the production phase, EHL is working with the PNG government to explore ways to best utilize demobilized assets and resources. It is keeping watch on major infrastructure projects being championed by government that have real potential to absorb a percentage of the local workers who have spent up to five years gaining knowledge, skills and experience working for the Project. There is also the potential to transfer some physical assets such as the Juni and Port Moresby Technical College Facilities to the government. More broadly, the Project continues to support government efforts in building capacity to effectively plan and implement other infrastructure projects.



IV Engagement in cross-sector partnerships and policy dialogue in PNG

Engagement in cross-sector partnerships and policy dialogue in PNG

Effective trust-based relationship management is equally as important to the Project's success as effective technically-driven construction management. This is the case in all major projects, but especially so when an investment is as complex and challenging as PNG LNG, and where there are large gaps in governance, skills, resources and trust between different stakeholders.

In almost all the practices and approaches outlined in this case study, the Project team has engaged in dialogue and/or worked in partnership with other organizations, both at the level of on-the-ground projects and program delivery and at the level of public policy dialogue and agenda-setting. One of the over-arching messages in the PNG LNG case study has therefore been the importance of ongoing engagement and cooperation among EHL and its contractors, different government entities, community-based groups, NGOs, research institutes, other companies, financial institutions, international donor agencies, and the diplomatic community in PNG. This engagement and cooperation has taken many forms and models, from informal but regular dialogue between the Project and one or more of its stakeholders or groups of stakeholders, to the signing of formal Memoranda of Understanding.

Clearly, one of the most crucial and challenging aspects of stakeholder engagement and cooperation has been, and will continue to be, with local communities, landowners and community-based organizations in the Project area. The importance of taking a systematic and participatory approach to community engagement was explored in an earlier section of the case study, as was the creation of community grievance mechanisms to improve accountability and trust with host communities. The Project's strategic approach to building the long-term capacity and resilience of community organizations and individual households and community leaders was also reviewed in the previous section.

This section focuses on two other key aspects of stakeholder engagement and cooperation, both of which have required the Project team to work on a cross-sector or multi-stakeholder basis. The first is the approach that the Project has taken to build strategic cross-sector partnerships, often with non-traditional allies in the public and non-profit sector. The second is the Project's participation with other stakeholders in policy dialogue and joint efforts to support the PNG government in strengthening revenue management, development planning and delivery.

#1

Building strategic partnerships to leverage and sustain results

#2

Participating in policy dialogue to support the PNG government in strengthening revenue management, development planning and delivery

1 Building strategic partnerships to leverage and sustain results

Partnerships among the Project operator and different levels of government, non-governmental organizations, research institutes, and community-based groups have been an important tool in enhancing the Project's ability to improve its risk management performance and to create shared value during the first few years of construction. They are also helping the Project team to build legitimacy and trust among stakeholders, leverage resources and learning more effectively, and achieve more sustained and scalable impact than different actors could achieve on their own. In addition, they are playing a role in strengthening the capacity of existing domestic institutions, which helps to build long-term development potential and manage expectations in terms of the Project's own role.

Appendix VI provides examples of the diverse organizations that the Project has partnered with to try and achieve common goals and tackle complex challenges. Some of these alliances have involved working together on one-off projects, ranging from a joint research initiative to delivery of an on-the-ground activity to a few multi-dimensional strategic alliances. In some cases a partnership has involved just EHL and one other organization, whereas in others it has consisted of a multi-stakeholder platform involving a large number of organizations. Some of the lessons and challenges that the Project team has faced in building cross-sector partnerships are as follows.

Identifying a few strategic partners for longer-term transformational change

EHL has partnered with, and will continue to partner with, a wide diversity of domestic and foreign organizations on specific activities. At the same time, it has recognized the value of identifying and signing Memoranda of Understanding (MOUs) with a smaller number of strategic partners that it can work with on a more transformational and long-term basis in tackling

complex challenges. The intensity of relationship management and coordination required for such strategic partnerships means that it is not possible to build a large number of them – at least not effectively – but they can play a valuable role in helping the Project achieve key strategic objectives without taking on the long-term responsibility for actual program delivery.

Three areas where this approach has been effective are in implementing the Project's biodiversity, community health and supplier development programs. In all cases, a multi-pronged and multi-level approach was needed, and the Project has identified a combination of domestic and international strategic partners that it can work with at a number of different levels and across a number of different solution sets. In the case of its biodiversity strategy, EHL has partnered with Conservation International to provide international technical expertise, and with the Mama Graun Conservation Trust and PNG's Institute of Biological Resources to deliver locally relevant conservation education, technical capacity building and participatory community engagement models. In the case of community health, the Project has partnered with the PNG Institute for Medical Research (IMR) to address a number of both medical and administrative capacity constraints in PNG's health system at both the national level and in the Project area. To implement a comprehensive supplier development program it partnered with the PNG Institute of Banking and Business Management (IBBM) to establish a local Enterprise Centre.

Strengthening existing domestic institutions

EHL has focused on identifying existing institutions in PNG – at the national, provincial and community level, and in both the public and nonprofit sector – as partners. It has done so with the explicit aim to help strengthen the partner's longer-term capacity while also meeting the Project's more immediate needs. This approach not only enables the Project team to partner with an organization that has the locally relevant

expertise and relationships to address the challenge in question, but also helps to position the Project as the ‘facilitator’ in finding solutions rather than the actual ‘service provider’. The latter can be important in managing community and government expectations, and in avoiding substitution or even weakening of existing service providers. In the case of the partnership with the IMR, for example, a key objective has been to strengthen IMR’s own management capacity and financial stewardship in addition to harnessing its longstanding experience and expertise in tackling infectious diseases and implementing demographic surveillance systems.

Sharing both financial and in-kind resources

While financial contributions have been important, the PNG LNG Project illustrates how companies can also support partners through sharing core competencies such as marketing, advertising and advocacy; project and portfolio administration; supply chain and distribution management; research and development; monitoring and evaluation; fund-raising; and engineering skills. Likewise, the Project has benefited from the contributions of its partners. These have included financial resources and development experience in the case of public institutions and international donors, and research and data-collection skills, local delivery capability, and increased legitimacy with local communities in the case of many non-governmental partners.

Developing relevant leadership skills

Cross-sector partnerships are often challenging to create and maintain. They require sustained support from senior executives, skilled intermediaries, and a serious investment of time, financial resources and in-kind support in order to be effective. Several senior Project executives have played a visible leadership role as champions for partnership and by engaging publicly with government officials, the donor and diplomatic community, the media, and civil society. At the same time, the Project has invested in hiring

and developing skilled professionals and effective partnership ‘brokers’ within its Land and Community Affairs, Public and Government Affairs and Safety, Health and Environment teams. These teams include political economists, social workers, development specialists, anthropologists, environmental scientists, agricultural extension advisers, public health experts, teachers and mediators. The Project has also identified, worked with and supported the development of local leaders in Project area communities and in domestic NGOs and public institutions. Some of these leaders have gone to work for the Project team and others have left the Project to work in other organizations, but the focus has been on developing a cadre of cross-sector leaders in PNG who have the ability to operate in complex and challenging environments.

Building business-to-business alliances

One area of partnership that has the potential for further development by the Project is alliances with companies in other sectors such as financial services, healthcare, mobile technology and agribusiness. Such alliances have been effective in other countries and could help to more effectively combine and leverage private sector resources in PNG to tackle urgent needs such as vocational education, smallholder farmer and small enterprise development, and improved access to health. Examples where the Project has supported business-to-business cooperation include initiatives to improve access to financial services, enhance revenue transparency and share good practices on environmental management. ANZ and Bank of the South Pacific, for example, have worked with the Project and other organizations to increase the accessibility of banking services in previously unbanked locations. EHL is also partnering with other companies, both in the region and globally, to share lessons and best practices in key aspects of health, safety and environmental management.

#2 Participating in policy dialogue to support the PNG government in strengthening revenue management, development planning and delivery

Papua New Guinea has a history of less than 40 years as an independent state. During this time it has aligned its goals for development closely to the extraction and export of its rich mineral, oil, gas, agricultural, and forestry resources. The results have been mixed. Despite high levels of commodity-driven public revenues, exports and economic growth, the country has failed to translate these into more inclusive and sustainable development outcomes for the majority of citizens. Like many other resource-rich countries, despite progress in recent years, PNG has struggled to develop the appropriate resource governance and accountability mechanisms and to build the necessary individual, institutional and infrastructure capacity to transform short-term resource revenue windfalls into long-term development investments. Nor has it succeeded in shifting from an enclave economy to a more diversified and sustained model of economic growth.

There have been improvements in fiscal management over the past decade. For example, debt levels have been brought down, domestic debt markets have been developed, there has been fiscal balance in many years and trust funds have been used to separate windfall budgets from recurrent expenditure and in recognition of limited capacity to spend. Some promising models have also been developed such as the PNG Sustainable Development Fund, Lihir's Integrated Benefits Package, the Community Development Initiative Foundation and the Women in the Extractive Industries Initiative, but many opportunities remain for further progress.

In May 2013, the Revenue Watch Institute launched a global *Resource Governance Index* ranking the 58 countries with the highest levels of oil, gas and mineral revenues on the basis of their ability to responsibly manage these revenues for national development.³²

The Index assesses countries in the following four categories: 1) institutional and legal setting; 2) reporting practices; 3) safeguards and quality controls; and 4) enabling environment. Papua New Guinea was ranked at 39 out of 58. The results of this index, as well as findings of other research on PNG's development performance, highlight the critical need for concerted and joint efforts by the government and other actors to achieve more effective resource revenue management, development planning and delivery. Given the substantial revenue flows that will be generated by the PNG LNG Project once production commences in 2014, the 'clock is ticking' in terms of establishing and strengthening the necessary governance, public delivery and accountability mechanisms.

Improving resource revenue management, development planning and delivery is first and foremost the responsibility of the PNG government. At the same time, there is a vital support role to be played by other actors. This includes developers and operators of natural resource projects in Papua New Guinea, including the PNG LNG Project, the PNG Chamber of Mines and Petroleum, other companies and business associations, international donors and financial institutions, and civil society organizations. In many cases, what is lacking is not goal-setting and planning at the national level, but more effective and accountable delivery of public resources and services at the regional, local and household levels. There is a crucial need for increased cooperation in the following four areas:

- 1) Supporting mechanisms to increase revenue transparency, including implementation of the Extractives Industries Transparency Initiative in PNG
- 2) Supporting mechanisms to improve revenue management, including establishment of an effective Sovereign Wealth Fund in PNG
- 3) Supporting inclusive and transparent benefit sharing agreements and allocation of funds between national, provincial and local governments
- 4) Supporting effective development planning and delivery.

Encouraging implementation of the Extractive Industries Transparency Initiative (EITI) in PNG

Important strides have been made in the past two years to improve resource revenue transparency in PNG. Donors, such as the World Bank, Asian Development Bank and Australian government; local and international NGOs, such as the Centre for Environmental Research and Development, Transparency International and Oxfam; and the private sector have all encouraged the PNG government to join the EITI. EHL has participated in many of the relevant dialogues and workshops. It has been a leading industry member of the interim multi-stakeholder working group that was established to help the government move forward with planning and efforts to apply for EITI candidacy. EHL's active engagement has been driven by the prominence and strategic importance of the PNG LNG Project, as well as by ExxonMobil's participation in EITI at the global level (where it has continuously served as a member or alternative member of the EITI

Board since its inception in 2002), and the company's engagement in transparency capacity building initiatives and dialogues associated with EITI in almost 20 other countries of business operation.

Some of the key benefits that EHL has cited for PNG to participate in EITI include the following:

- The EITI process can help the country to develop a systematic approach to address transparency
- EITI can contribute to building a culture of accountability and good governance, and help to reduce corruption, all of which is good for business as well as promoting greater long-term social and economic stability
- The multi-stakeholder processes that are central to effective implementation of EITI can help to foster dialogue and mutual education among different sectors and institutions on matters that are not always well understood.³³

Box 6: Key factors required to implement an effective EITI mechanism in PNG

Although after the time period covered in the case study, it is worth noting that the PNG government formally submitted its application for EITI candidacy in December 2013. Going forward, the following factors will be important to achieve a credible, transparent and accountable EITI process in PNG:³⁴

- **Ongoing commitment to robust multi-stakeholder consultation:** There is already a solid foundation for this to occur in PNG given that most of the key stakeholders in government, donor agencies, the extractive sector, and civil society have already been in regular dialogue with each other over several years. Several of them can draw directly on their experience as participants in EITI in other countries. Investing the time and other resources to make the multi-stakeholder process effective will be a key factor in determining the long-term success of the EITI framework, and revenue transparency in PNG.
- **Ensuring reliable data collection, research and accessible information:** In order to ensure the independence, reliability, and integrity of data collection and research, agreeing on the type of data to be collected and how it will be analyzed, validated and reported, will be a key objective of the multi-stakeholder working group. The EITI provides guidance on disclosure requirements and reporting procedures, but this will need to be adapted to PNG's own context, existing contractual obligations, culture, and development objectives. While reliable data is crucial, the information also needs to be 'user-friendly' and relevant to key stakeholders, including the media, NGOs, and importantly, the communities most directly affected by resource development. It needs to be clear, straightforward and accessible. Developing communications platforms that make information easy to access and to use will be another key factor to ensuring EITI's success in PNG.
- **Building institutional capacity:** There is also the challenge of being realistic about the country's institutional capacity and building an approach that is both achievable and meaningful based on existing capacity, while also setting clear goals and targets for growing the PNG EITI program over time. This includes the need to understand and where possible to address capacity constraints at the levels of regional and local governments, not only national government.

Supporting mechanisms to improve revenue management, such as a PNG Sovereign Wealth Fund

Another important development that has been spurred in part by the high profile and high public expectations associated with the PNG LNG Project has been a renewed commitment by the PNG government to learn from past mistakes in establishing more robust and better governed institutions to improve the quality and accountability of revenue management. Over the past year, progress has also been made by the PNG government to establish a Sovereign Wealth Fund (SWF), although many of the governance, managerial and technical details are still under discussion. A SWF, if governed well, would be a key pillar for more effective resource revenue management in the future. It would not only manage revenues from the PNG LNG Project but also from other oil, gas and mining projects. It would also be a crucial component of a national framework for improving the quality and accountability of public revenue management and service delivery more broadly.

While by no means a panacea to address concerns over revenue management and the need to build a stability mechanism to manage the ebbs and flows of commodity pricing, progress on the SWF – particularly how the final SWF will be structured and governed – is being carefully watched by various domestic stakeholders and the international community. Tied into the SWF debate is a proposed initiative – the “Kumul restructuring” – to better rationalize PNG’s mining and petroleum sector. If not done well, both the SWF and any restructuring of the extractive sector could undermine PNG’s sovereign risk rating and see a deterioration in the country’s overall investment climate. As such, implementation of the SWF, together with other efforts to improve the structure of the resource sector and to manage the implications of ‘Dutch Disease’, will be seen as important indicators as to whether the government is seriously committed to putting in place sound economic policies rather than resorting to short term actions that may create

immediate political gain but little lasting economic or developmental value.

The PNG government is being actively supported to establish the SWF by ongoing technical advice, capacity building and engagement from the World Bank, the Australian government, and other donor governments. A number of other resource-rich countries with SWFs are also providing support and guidance based on lessons they have learned. As with EITI, the major resource companies, including EHL, and the PNG Chamber of Mining and Petroleum have been supportive of government and donor efforts to advance this agenda. Their engagement has included participation where appropriate in relevant public policy dialogues and workshops, and facilitating research and studies of models from other countries.

Supporting effective implementation of the PNG LNG Benefit Sharing Agreements

A challenge that both proponents and critics of large-scale projects such as PNG LNG can all agree on is the need to ensure that citizens, especially those living in the communities and provinces where these projects are developed, gain fair benefits from the often substantial revenues generated by the project once production commences. Although project operators can, and do, support many programs to invest in local human capital and skills development, local suppliers, community investment projects, physical infrastructure, and institutional capacity building, the money invested in such programs is dwarfed by the public revenues that flow from production. Improving revenue transparency and macroeconomic revenue management at the national level are obviously a crucial part of the solution. Equally important is the amount of revenues that are directly distributed to local and regional governments and to landowners or communities in the project areas, and the manner in which this process of benefit sharing is both negotiated and implemented in practice.

In PNG, the framework for benefit sharing between the national government, affected provincial and local governments, and impacted communities and landowners is outlined in the *PNG Oil and Gas Act 1998*. Despite the clear policy framework, actual implementation – both in terms of how Benefit Sharing Agreements are negotiated and how benefits are distributed once revenues start to flow – remains a challenge and an area of concern for the future. The following provides a brief background to the BSAs for the PNG LNG Project, and some of the key challenges that must be addressed in coming years to ensure that they translate into real development impact in the Project license areas.

Negotiating the BSAs for the PNG LNG Project:

The negotiations of the BSAs, which took place between May and December in 2009, were especially complex, challenging and controversial. This was due in part to the fact that the Project spans nine different license areas, requiring coordination of negotiations among the national government, affected provincial governments (four at the time of negotiations, and now five), local-level governments (nine at the time of the negotiations), and the Project area landowners (some 60,000 landowners). It was also due to the very high and in many cases unrealistic expectations some stakeholders and beneficiaries had – and in some cases still have – of the PNG LNG Project, including in the media and among the general public, given the size of the original capital investment (US\$15.7 billion) and high revenue flows anticipated once production commences in 2014.

Negotiations were undertaken through a series of Forums hosted by the Ministry of Petroleum and Energy. Representatives of the Project team attended the forums, as observers not as participants, but as previously noted neither EHL or the Project consortium are party to the BSAs. According to PNG law the state is responsible for administration of Project-related benefit sharing agreements. This includes the obligation to

convene a development forum at which agreements are negotiated, as well as on-going administration of the benefits that flow from those agreements. In the history of PNG, there have been no equivalent negotiations, either in terms of scale or the number of parties involved. Two levels of BSAs were negotiated: An Umbrella Benefit Sharing Agreement (UBSA); and ten License-Based Benefit Sharing Agreements (LBSAs).

The UBSA was agreed at a Forum hosted in Kokopo during May 2009, which lasted six weeks and involved over 2,000 people from all the license areas, many more than anticipated or formally invited by the government. The UBSA is the overarching benefit sharing agreement, which establishes the benefit boundaries. There are ten additional license-based benefit agreements. These establish the distribution of benefits to landowners within each license area, within the buffer zone around the pipeline, and around the LNG Plant. To negotiate the additional agreements, ten forums were held in seven field camps and in Port Moresby. About 4,500 landowners attended these forums, with each one lasting approximately two weeks. Several of the license-based agreements still contain outstanding issues to be resolved between the national government, local and provincial governments, and landowners before production start-up.

Criticisms have been leveled at the government about the manner in which the BSAs were conducted, especially the UBSA Forum.³⁵ These include the view that the forum excluded many impacted stakeholders, with only 500 representative landowners officially invited to attend at the government's expense, and the fact that the forum was hosted on an island far from the Project area. They also include concerns that there were not enough independent observers invited to attend the negotiations and criticisms about the short and pressurized timeline in which the negotiations were undertaken and concluded. Effective implementation will be especially important given the mistrust and concerns raised about the negotiation process.

Overcoming obstacles to effective implementation

of the BSAs: Looking to the future, the priority will be to ensure that outstanding issues are resolved and valid concerns are addressed, and that once revenues start flowing they reach beneficiary communities in a manner that facilitates inclusive and sustainable development. The stakes are high. The UBSA estimates that over the 30-year life of the PNG LNG Project, the national government, provincial and local governments, and beneficiary landowners will receive 20 to 30 billion PNG Kina (about US\$9 to 13.7 billion at June 2013 exchange rates). This will derive from a combination of royalties, development levies, equity benefits, and project grants (business development grants, infrastructure grants, and support for specific high impact projects), which are outlined in Appendix VIII. The vast majority of the revenue will flow directly to the national government, which will distribute it to other stakeholders based on the mechanisms and formulae negotiated in the BSAs. As a comparison, total official donor assistance to PNG each year is less than US\$1 billion; the foreign aid disbursed to PNG during 2012 (the most recent year for which public data is available) was US\$664.84 million; during 2011, US\$610.99 million, and during 2010, US\$511.41 million.³⁶

Effective implementation of the BSAs will obviously be the responsibility of the PNG government, and the relevant provincial and local governments. Five key challenges that need to be addressed are as follows:

- 1) Identifying and validating *bona fide* landowners. This is challenging given PNG's customary landownership system, and requires credible social mapping and community consultation.
- 2) Agreeing the most appropriate mechanisms for making the payments to landowners. It will be important to develop payment models that avoid massive cash payouts and that encourage productive uses of the money and investments in household education and health, not only short-term consumption. This should include efforts to ensure that women don't get further marginalized

in decision-making or excluded from the receipt of payments.

- 3) Dealing with the social consequences of an ongoing transition from a largely non-cash economy to a cash economy.
- 4) Ensuring that the payments actually flow from national government to provincial and local levels. This includes the need to strengthen overall revenue governance and accountability, and to tackle corruption and leakages.
- 5) Monitoring the transparency, accountability and effectiveness of revenue management by the local and provincial government once they receive the funds. There is also a need to further build local and provincial government capacity in the project area, invest in teachers, healthcare workers and agriculture extension workers, avoid grandiose infrastructure projects, and tackle corruption.

In addition to continued engagement in policy dialogue, the business community can support government with technical and financial assistance in areas such as social mapping, improving community banking and economic development projects, investments in infrastructure, and the explicit inclusion of women in decision-making. Although neither EHL or the PNG LNG Project consortium are party to the BSAs, they have a strong interest in ensuring that they are transparently, fairly and effectively implemented. The Project recognizes that the consequences of an ineffective or inequitable system of distribution would be inevitably, and adversely, linked to the Project and the reputations of the Project operator and its financial and co-venture partners. Conversely, if implementation of the BSAs works well, this will not only reflect well on the government and the Project, but will give local communities a greater sense of ownership in the Project and hopefully a vested interest in supporting future operations.

Supporting policymakers to strengthen development planning and delivery in PNG

As is the case in many developing countries, PNG has clear national development priorities and targets, underpinned by the Millennium Development Goals. What is lacking are not goal-setting and planning, but more effective execution and delivery. There is an associated need to build public sector capacity not only at the national level, but also at the provincial and district-levels of government. Too often support for capacity building focuses on high-level administrative and functional organization, and not enough attention and resources are focused on setting clear priorities and linking up high-level plans with a work breakdown structure that is realistic and achievable, especially in remote and undeveloped regions of the country. While donors, private companies and NGOs cannot, and should not usurp the planning function of government, they can play a key role in advocating for and helping to shape a better investment climate and more effective national development priorities and delivery models.

In PNG, groups such as the Business Council of Papua New Guinea (BCPNG) and business-funded think tanks such as the Institute for National Affairs are already supporting a variety of activities to improve the enabling environment for doing business. Some of these initiatives are joint efforts between the government and the business community, like the National Working Group on Improving Business and Investment in PNG, established in 2001 and chaired by the Chief Secretary to the government and co-chaired by BCPNG. Others are focused on specific industry sectors, such as the PNG Chamber of Mines and Petroleum, or on types of company, such as the Indigenous Business Council of PNG, established in 2011. A few, such as the Business Against Corruption Alliance, are working with non-governmental organizations (in this case Transparency International) and with donor agencies and other business associations to tackle a specific constraint to private sector development.

In terms of collective business action to support PNG's national development goals more broadly, there are some good examples of trade and industry associations supporting development-oriented programs and policy dialogue – such as the Women in Mining and Energy program of the PNG Chamber of Mines and Petroleum. However, much more could be achieved through increased collective action by business to support development planning and delivery.

In addition to collective action and engaging in policy dialogues, individual companies are also playing an increasingly important role in the actual delivery of development projects on-the-ground. A growing number of individual companies, for example, have established more strategic sustainable development and corporate citizenship programs, ranging from the natural resource companies in mining, petroleum and agriculture, to leaders in the banking sector (such as Bank of the South Pacific), the telecoms sector (such as Digicel), and manufacturing and trading houses (such as Coca-Cola and Steamships Trading Company). There are also excellent examples of individual corporations that have established development-focused foundations, like the Oil Search Health Foundation, which has become an important local partner for the Global Fund to Fight AIDS, Tuberculosis and Malaria, and the Community Development Initiatives Foundation, originally created by Chevron.

There is potential, however, for greater leadership by individual companies, more collective business action by the private sector, and increased public-private partnerships among business, government, donors and civil society. In particular, there is potential for greater cooperation in the following priority areas:

- vocational training and skills development;
- women's empowerment;
- improved access to health and nutrition; and
- support for small, medium and micro-enterprise development.



V Conclusion and recommendations

Conclusion and recommendations

The PNG LNG Project is nearing completion of the construction phase and will commence production on schedule in 2014. Not surprisingly with an investment of this magnitude and complexity being undertaken in such a challenging context, there are ongoing opportunities for improvement in most of the areas outlined in the case study. There have been some widely reported negative impacts from construction-related activities at both the operational and the macroeconomic level. These have included local-level grievances, work stoppages and conflicts, and some negative macroeconomic impacts on the country's non-resource tradable sector.

Despite these challenges, the Project team has resolved the majority of recorded community grievances and stayed on target for the overall construction schedule. The Project has also demonstrated measurable results in terms of environmental and social risk management, as reported by the independent compliance consultant appointed by the Lender Group. In particular, the independent consultant has cited the Project's worker safety, occupational health, and waste management programs as being examples of "best" practice.³⁷ In addition, the Project has made numerous investments in local human capital, enterprise development, community investment, infrastructure, and institutional capacity building. After three years of construction, the Project can point to significant achievements in managing shared risks, creating shared value and building a foundation for broader development.

The Project's long-term impact on economic growth and development will depend largely on how the government of PNG manages the substantial resource revenues that will start to flow once production commences. This will require government bodies at all levels to dramatically improve their track record on resource revenue management and broader development planning and delivery. At the same time, EHL and its contractors will continue to face a high level of scrutiny and high expectations in terms of their ability to effectively manage Project-related risks,

ensure accountability, and optimize local benefits and opportunities. As with many other resource-rich countries, PNG's track record for effective resource revenue management has been mixed over past decades, but there are reasons to be cautiously optimistic. These include improvements made by the government in areas such as greater fiscal discipline and commitment to revenue transparency, although major challenges remain. The growing number and effectiveness of multi-stakeholder dialogues and cross-sector partnerships that are emerging in PNG is another reason to be optimistic. They will remain essential to ensuring the longer-term success of the Project and its contribution to more inclusive and sustainable development in Papua New Guinea, as well as the development impact of the extractive sector more broadly.

The following recommendations draw on the experience and lessons of the PNG LNG Project to date, but are aimed to be relevant more broadly for project operators, contractors, governments, and development agencies around the world. They also remain highly relevant for PNG.

Almost all of these recommendations call for policy makers, corporate executives, and civil society leaders to operate in non-traditional ways, often working with non-traditional partners. Such approaches will be increasingly important to meet the business challenges, energy needs, and development imperatives of the future. The individuals and institutions that focus on the energy sector and on the risks and benefits of developing large-scale energy projects will play an increasingly vital leadership role in shaping the development prospects of resource-rich countries and communities. As Ban Ki-moon, the United Nations Secretary-General, has noted, "from job creation to economic development, from security concerns to the status of women, energy lies at the heart of all countries' core interests."³⁸

RECOMMENDATIONS FOR PROJECT OPERATORS AND CONTRACTORS

1. CONTINUOUSLY IMPROVE RISK MANAGEMENT, ACCOUNTABILITY AND LOCAL CONTENT DEVELOPMENT

<p>Continuously improve internal management systems to identify, avoid and mitigate risks</p>	<p>The core responsibility of project operators is to deliver projects safely, per specifications on budget and on schedule in a manner that avoids or mitigates project-related social, environmental, ethical and human rights risks to stakeholders. This requires implementation of corporate level policies and standards supported by operational-level management systems, training and incentive structures that embed the company’s commitment across the entire organization. It requires rigorous data collection and evidence-based processes to establish credible baselines and to identify and assess actual and potential risks and negative externalities, management plans to integrate these findings into operations and decision-making processes, and mechanisms for tracking, monitoring and reporting on performance.</p>
<p>Establish early and transparent community engagement processes and grievance mechanisms</p>	<p>Effective community engagement processes and mechanisms are essential for identifying and mitigating risks, building trust and legitimacy and responding to and remediating community grievances before they escalate into conflict. Useful guidelines on effective community engagement and grievance mechanisms are available through IFC’s CommDev program, IPIECA, ICMM and the Shift Project, among others.</p>
<p>Develop a strategy for building human capital and local content through core business activities and social investment</p>	<p>All major project operators should develop national or local content plans, which set explicit definitions and targets for how they can harness both their core business competencies and value chains and their social investment or philanthropic foundations to help build local human capital, promote women’s empowerment, support local enterprise development, invest in infrastructure, and help governments and other development partners to strengthen institutional capacity in their host countries and communities.</p>
<p>Report publicly on progress and allow independent monitoring and evaluation</p>	<p>In addition to corporate-level corporate citizenship or sustainability reports, there will be increasing pressure on large companies to be more transparent in disclosing their socio-economic, environmental and human rights performance at a country level or even project level. The use of independent monitoring and/or assurance and verification can add further legitimacy and credibility to this process. An example of such reporting is the approach taken by the PNG LNG Project – in accordance with the loan requirements stipulated by the Lender Group – of producing a quarterly report itself, in addition to facilitating regular environmental and social compliance monitoring by an independent third-party appointed by the project lenders. This is becoming increasingly standard practice in major projects, but can be especially valuable in situations where public transparency and corporate disclosure are still relatively weak.</p>

2. PARTNER WITH HOST GOVERNMENTS AND OTHER STAKEHOLDERS TO ENHANCE DEVELOPMENT PLANNING AND OUTCOMES

<p>Invest in strategic development partnerships</p>	<p>There is enormous potential for project operators to identify a small number of strategic partners to help them leverage resources, increase legitimacy, scale impact, and improve development outcomes in programs that are strategically important to achieving the company’s risk management and shared value objectives. These partners can range from NGOs to donor agencies and public entities. They can also include business-to-business partnerships. Oil, gas and mining companies, for example, could explore partnering with information technology and mobile banking companies or with healthcare and agribusiness companies to be more effective in implementing their community investment and regional development projects.</p>
<p>Participate actively in multi-stakeholder platforms and collective action</p>	<p>Large-scale project operators should play an active and transparent role participating in country-level multi-stakeholder platforms, public policy dialogues and government advisory councils so that they can improve the broader enabling environment for both business and more inclusive and sustainable development. Where relevant, they should be advocates for the national implementation of global principles and standards such as the Extractive Industries Transparency Initiative; the Voluntary Principles on Security and Human Rights; the UN Guiding Principles on Business and Human Rights; and relevant industry-wide guidelines and technical standards on key social, environmental and ethical issues.</p>

CONTINUED

Conclusion and recommendations

RECOMMENDATIONS FOR PROJECT OPERATORS AND CONTRACTORS *continued*

3. DEVELOP MULTI-DISCIPLINARY LEADERSHIP SKILLS

Train future leaders in all sectors who have a holistic view of how the private sector fits into and impacts a country's development agenda

There is a growing need for engineers to also understand development challenges, for business leaders to be more politically savvy, and for financial executives to integrate non-financial risks and opportunities into their analysis and decision-making. Increasingly, large companies operating in complex industries and in challenging environments need cross-boundary leaders who are comfortable operating not only across cultural and national boundaries, but also across different sector and functional boundaries. Efforts should be made to identify and train such leaders at the corporate, country and project-level. In addition, by setting high standards of competency and professional conduct, companies can nurture the development of host government, local business and civil society leaders who can then more effectively articulate and implement a sound vision and strategy for inclusive and sustainable development.

RECOMMENDATIONS FOR GOVERNMENTS AND DONOR AGENCIES

1. STRENGTHEN RESOURCE REVENUE MANAGEMENT

Take a comprehensive approach to improve resource revenue management at the national, regional and local level

The core responsibility of governments in resource-rich countries is to create an enabling environment for rule of law, sound macroeconomic policies, and anti-corruption efforts broadly, and effective oil, gas and mining legislation, inclusive benefit sharing agreements, and transparent, effective and accountable resource revenue management more specifically. Resource-rich governments should set ambitious goals to improve resource management and report publicly on progress, starting at the national level, but also focusing on regional and local government. In addition to adhering to their international legal obligations (including under human rights treaties and anti-corruption conventions they have ratified), governments should also make explicit public commitments to adhere to relevant international voluntary principles and standards. Examples include the Extractive Industries Transparency Initiative, the Voluntary Principles for Security and Human Rights, and the UN Guiding Principles on Business and Human Rights.

Work with donor agencies and NGOs to build knowledge and capacity

Donor agencies and research and training institutions can do more to support governments in building their analytical and management capacity to improve resource governance. Useful guidelines and benchmarks are available through initiatives such as the Natural Resource Charter, the Resource Governance Index and Revenue Watch, the Chatham House project on oil governance, and the Norwegian Government's Oil for Development Initiative.

2. WORK WITH THE PRIVATE SECTOR TO IMPROVE DEVELOPMENT OUTCOMES

Support public-private partnerships targeted at specific development challenges

Governments and donors should create platforms and partnerships at a national or sector level that bring together leading companies, NGOs, foundations, research institutes and donors that have a shared interest in improved resource revenue management and/or better development planning and execution. The creation of multi-stakeholder structures in some countries to shape and implement the Extractive Industries Transparency Initiative offers a useful model. In a growing number of countries, there are also public-private partnerships focused on tackling specific development challenges such as vocational training; women's empowerment; support for small and micro-enterprise development; access to education; improved access to health and nutrition; and anti-corruption efforts. Project operators often need to invest significantly in these areas upfront, but should have plans in place from the outset to work closely with and to build the capacity of host governments and other domestic partners to deliver over the longer term.

Promote gender equality in the extractive sector

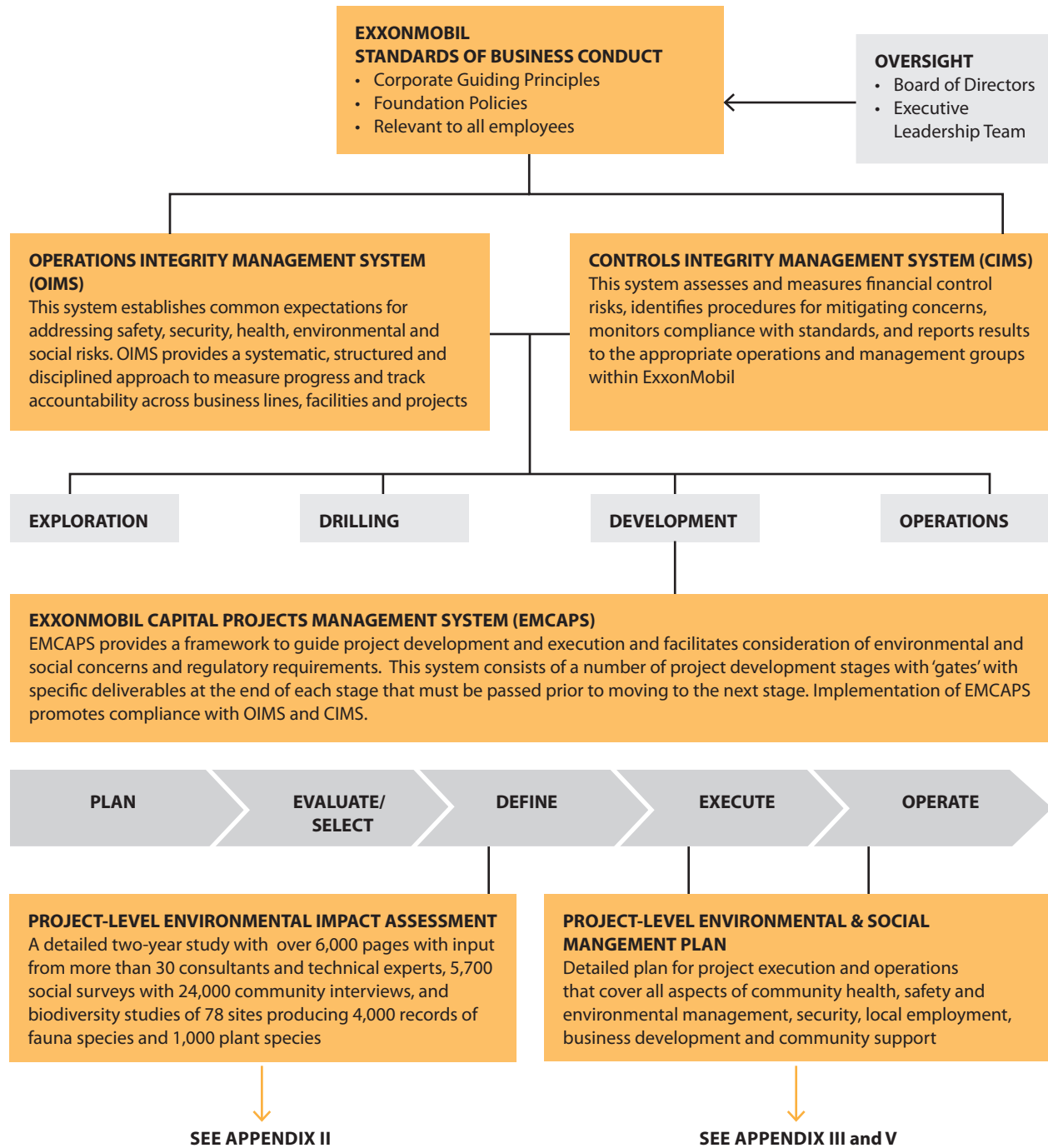
There is growing evidence that greater gender equality is essential for tackling some of the negative social and economic impacts of large-scale projects, and for driving more inclusive and sustainable growth more broadly. Governments should partner with companies and business associations in the extractive sector, and with donors and NGOs that have experience and programs in this area (such as the World Bank, the Australian, Canadian and Norwegian bilateral development agencies, regional development banks, Oxfam and CARE) to support research and projects aimed at improving women's empowerment, including access to education and livelihood opportunities.



Appendices, endnotes, methodology and references

Appendix I:

The relationship of ExxonMobil's Operations Integrity Management System to some of the company's other internal corporate policies, standards and management systems



Source: Adapted from The ExxonMobil 2012 Corporate Citizenship Report

Appendix II:

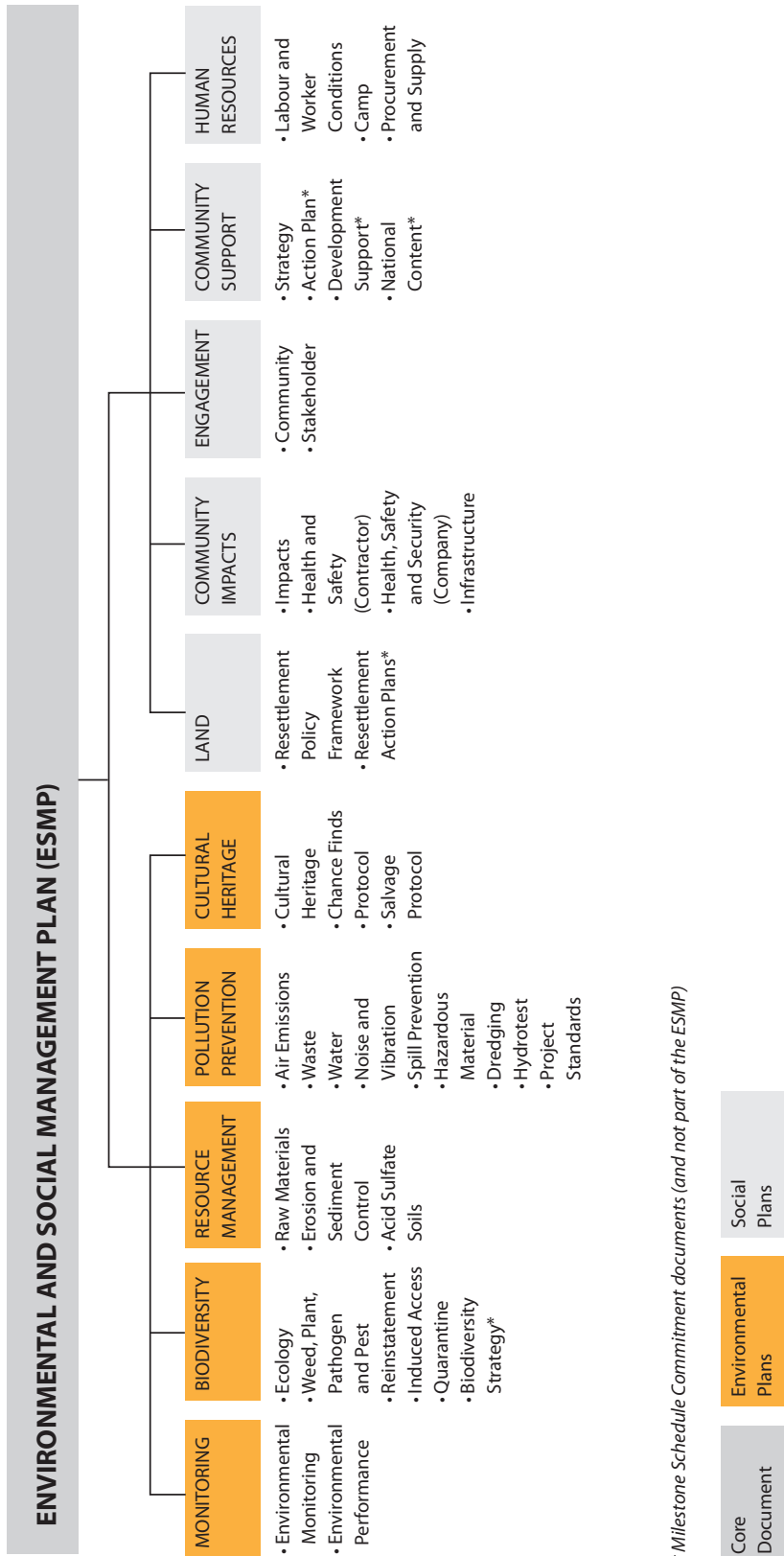
Overview of the PNG LNG Environmental Impact Study (EIS) for the construction phase of the Project

Main report Table of contents				
Executive Summary	PART I The Project	PART II Existing Environment	PART III Environmental and Social Impact Assessment and Management	PART IV Reference
	<p>Preface</p> <ol style="list-style-type: none"> 1. Introduction 2. Producing the Gas 3. Transporting the Gas 4. Producing and Exporting the LNG 5. Project Logistics 6. Pipeline and Facilities Location Context 7. Project Substantiation (Alternatives Analysis) 8. Legal, Administrative and Planning Framework 9. Stakeholder Engagement 	<p>Preface</p> <ol style="list-style-type: none"> 10. Receiving Onshore Environment: Upstream Facilities and Onshore Pipelines 11. Receiving Marine Environment: Offshore Pipeline 12. Receiving Onshore Environment: LNG Facilities 13. Receiving Marine Environment: Marine Facilities 14. Cultural Heritage Environment: Upstream Facilities and Pipelines 15. Socio-economic Environment: Upstream Facilities and Pipelines 16. Cultural Heritage Environment: LNG and Marine Facilities 17. Socio-economic Environment: LNG Facilities 	<p>Preface</p> <ol style="list-style-type: none"> 18. Environmental Impacts and Mitigation Measures: Upstream Facilities and Onshore Pipelines 19. Environmental Impacts and Mitigation Measures: Offshore Pipeline 20. Environmental Impacts and Mitigation Measures: LNG Facilities 21. Environmental Impacts and Mitigation Measures: Marine Facilities 22. Project-wide Cultural Heritage Impacts and Mitigation Measures 23. Project-wide Socio-economic Impacts and Mitigation Measures 24. Cumulative and Associated Impacts 25. Waste Management 26. Greenhouse Gases and Climate Change 27. Environmental Hazard Assessment 28. Environmental Impact 29. Summary of Mitigation and Management Commitments 30. Environmental Management, Monitoring and Reporting 	<p>Preface</p> <ol style="list-style-type: none"> 31. Glossary 32. Bibliography 33. Study Team <p>Attachments</p> <ol style="list-style-type: none"> 1. LNG Safety 2. Cross-reference of DEC Guidelines and Requirements to EIS Sections 3. Technical Codes and Standards 4. Potentially Applicable Legislation 5. Hazard Identification Summary 6. ExxonMobil Operations Integrity Management System
<p>Appendices</p>				
	<p>Upstream and Offshore Pipeline</p> <ol style="list-style-type: none"> 1. Biodiversity Impact Assessment 2. Aquatic Fauna Impact Assessment 3. Resource Use Survey of the Omati-Kikori Delta 4. Hydrology and Sediment Transport Impact Assessment 5. Water and Sediment Quality Impact Assessment 6. Groundwater Impact Assessment 7. Forestry Impact Assessment 8. Soils and Rehabilitation Impact Assessment 9. Air Quality Impact Assessment 10. Noise Impact Assessment 11. Offshore Impact Assessment 	<p>LNG and Marine Facilities</p> <ol style="list-style-type: none"> 12. Biodiversity Impact Assessment 13. Aquatic Fauna Impact Assessment 14. Hydrology and Sediment Transport Impact Assessment 15. Water and Sediment Quality Baseline Impact Assessment 16. Groundwater Impact Assessment 17. Soils and Rehabilitation Impact Assessment 18. Air Quality Impact Assessment 19. Noise Impact Assessment 20. Visual Impact Assessment 21. Road User Survey 22. Hydrodynamic Modelling 23. Nearshore Marine Impact Assessment 24. Resource Use Survey of Caution Bay 	<p>Project-wide</p> <ol style="list-style-type: none"> 25. Greenhouse Gas Impact Assessment 26. Social Impact Assessment (including cultural heritage) 	

Source: PNG LNG Environmental Impact Study, 2009. Available on www.pnglng.com

Appendix III:

Overview of the PNG LNG Environmental and Social Management Plan (ESMP) for the construction phase of the Project



Source: PNG LNG Quarterly Environmental and Social Report 2013 Third Quarter

Appendix IV:

Principles for community engagement development by EHL's Land and Community Affairs team

The Land & Community Affairs Team for the PNG LNG Project has established the following

Key Principles for effective community engagement:

- 1) Build and maintain **ongoing relationships** with communities based on trust and transparency
- 2) Adopt a **participatory approach** so that all relevant stakeholders are involved in decisions that affect them
- 3) Manage **community expectations** by clearly defining and consistently communicating commitments, roles and responsibilities of the Project through culturally appropriate communication
- 4) Maintain a **consistent approach** in implementation across the Project area
- 5) Plan for **sustainability** so that the Project benefits continue beyond construction and into the operations phase
- 6) Expand the **capacity and capabilities of existing structures** within PNG and the Project area
- 7) Forge **strategic partnerships with established organizations** in PNG and the Project area including local and international NGOs, local businesses, universities, research institutions, multi-lateral organizations, development agencies and other stakeholders.

Appendix V:

The 11 Priorities for the PNG LNG National Content Plan

The 11 priorities for the PNG LNG National Content Plan are as follows:

Workforce Development

1. To provide equitable distribution of training and employment opportunities while giving priority to communities in the Project Area.
2. To train enough PNG citizens to meet the requirements of the Project consistent with the PNG government's Work Permit Guidelines.
3. To provide certified training to PNG citizens engaged in construction to give them a transportable and recognized skill set.
4. To provide PNG citizens with access to positions for which they are qualified.
5. To recruit and train PNG citizens for production and other business functions, to enable qualified PNG citizens to participate fully in operation and management of the project, while reducing the need for expatriates.

Supplier Development

6. To optimize the participation of PNG suppliers – especially Representative Lancos – in the PNG LNG Project.
7. To stimulate capacity building in selected PNG business segments where sustainable activity is expected – such as support to production and/or non-project related business.
8. To develop local suppliers of goods and services to be economically attractive and competitive against imported goods and services for like quality.

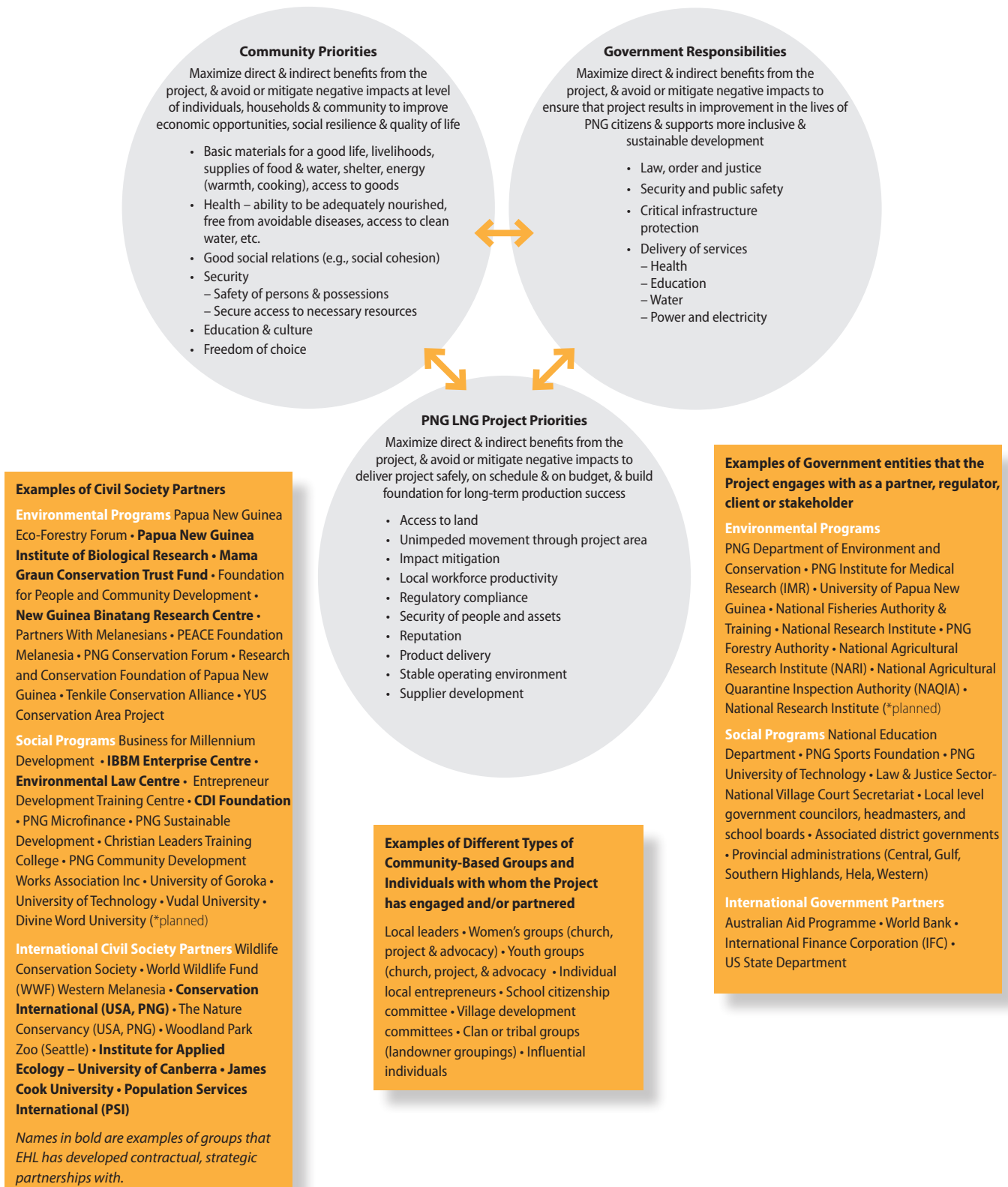
Strategic Community Investments

9. To adopt a strategic approach to community investments that align community needs and Project resources to produce tangible, sustainable benefits.
10. To focus efforts on health, education, sustainable livelihoods and environment in those communities most affected by the Project.
11. To demonstrate goodwill through capacity building programs and build relationships with communities in the Project area.

Appendix VI:

Examples of stakeholder engagement and partnerships between the PNG LNG Project and domestic and international NGOs, government and donor agencies, and community-based organizations

(NOTE: This diagram and list of examples are illustrative not comprehensive)



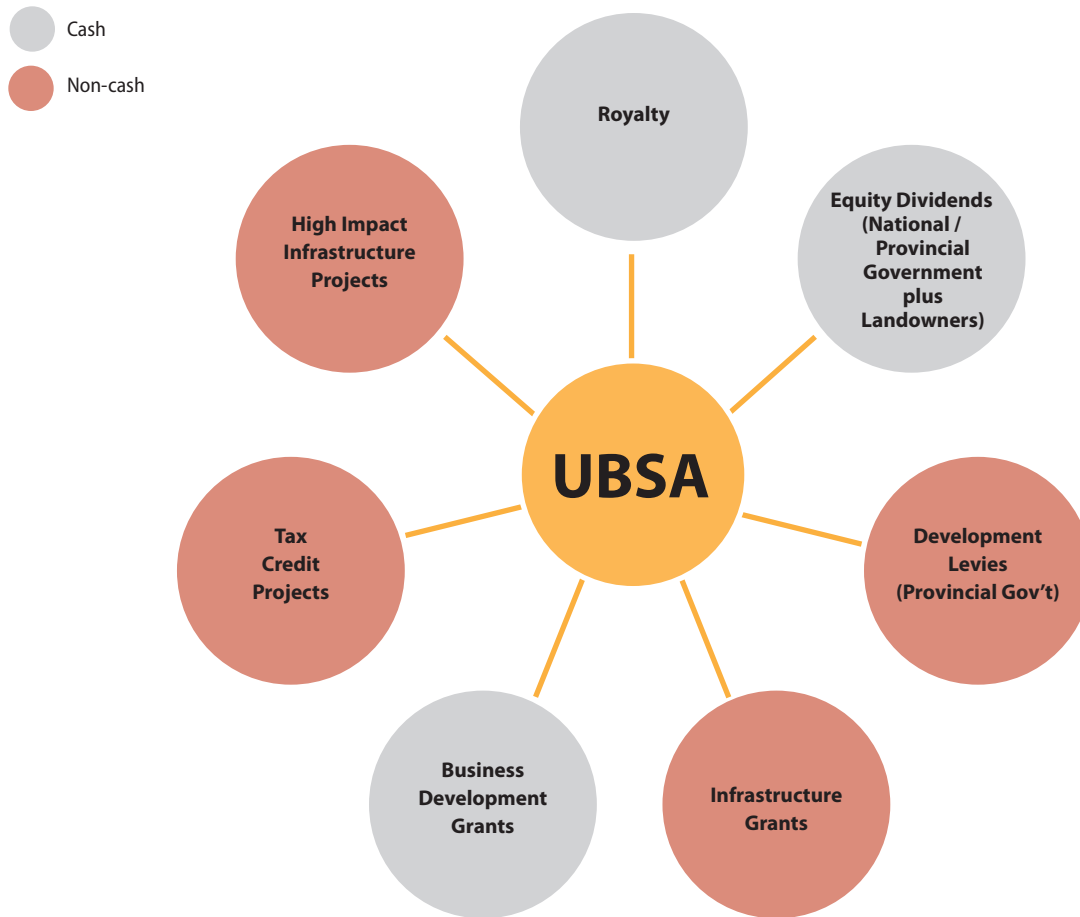
Adapted from *Business as Partners in Development*, Jane Nelson, 1996, and ExxonMobil and EHL publications.

Appendix VII: PNG LNG Project Contractors and Work Scopes

Upstream Infrastructure Clough and Curtain Brothers Joint Venture	<ul style="list-style-type: none"> • Infrastructure upgrades supporting main construction activities in the Gulf Province and Southern Highlands Province. • Camps for Esso Highlands Limited and to support construction activities. • Construction of a landfill site at Hides. • Bulk earthworks for the HGCP and Hides Wellpads.
LNG Plant Early Works Curtain Brothers Papua New Guinea Limited	<ul style="list-style-type: none"> • Upgrade of existing road from Motukea Island to LNG Plant site. • New Bypass Road (re-routing of existing public road, which transects with the LNG Plant site).
Telecommunications TransTel Engineering	<ul style="list-style-type: none"> • Installation of a telecommunications system to support construction and production.
Offshore Pipeline Saipem	<ul style="list-style-type: none"> • Construction and installation of the offshore pipeline from Omati River landfall to LNG Plant landfall site. • Pipeline tie-in at Omati River landfall and shore crossing at the LNG Plant landfall site. • Installation of near-shore Fiber Optic Cable in the Omati area.
Offshore Fiber Optic Cable Alcatel-Lucent Submarine Networks	<ul style="list-style-type: none"> • Installation of the offshore Fiber Optic Cable from the Omati delta to the LNG Plant landfall.
LNG Plant and Marine Facilities Chiyoda and JGC Joint Venture	<ul style="list-style-type: none"> • LNG facility engineering and construction, including LNG process trains, condensate storage tanks, LNG storage tanks, utilities, permanent accommodations, heliport, and telecommunications. • Marine facilities including the jetty and LNG/condensate export berths.
Hides Gas Conditioning Plant and Hides Wellpads CBI and Clough Joint Venture	<ul style="list-style-type: none"> • Engineering and construction of the HGCP processing facilities and associated wellpads, including permanent accommodation and maintenance facilities.
Onshore Pipeline SpieCapag	<ul style="list-style-type: none"> • Installation of the onshore gas and condensate pipelines, and associated valve and metering stations. • Installation of the pipelines for the Hides gathering system including flowlines, spinline, utility lines, and associated power and telecommunications cables.
Komo Airfield McConnell Dowell and Consolidated Contractor Group Joint Venture	<ul style="list-style-type: none"> • Airfield and supporting infrastructure.
Associated Gas Development Various	<ul style="list-style-type: none"> • Upgrades and modifications to Kutubu Central Processing Facility and Gobe Production Facility including gas dehydration, metering, and condensate handling.
Drilling Nabors Drilling International Limited	<ul style="list-style-type: none"> • Drill and complete 11 new wells.
Permanent Facilities Compound Leighton (PNG) Limited	<ul style="list-style-type: none"> • Construction of offices and associated service facilities.

Source: PNG LNG Quarterly Environmental and Social Report 2013 Third Quarter

Appendix VIII: Elements of the Umbrella Benefit Sharing Agreement (UBSA)



Some of the aspects of the UBSA include:

1. Royalty

A royalty benefit of 2% is provided by the State to landowners, provincial governments and local level governments. The 2% royalty is calculated on the wellhead value of all petroleum produced from the license area.

2. Equity

The UBSA provides a total of 2.78% free equity participating interest in PNG LNG to Project area landowners and local level governments. It also provides to Project area landowners and provincial governments the opportunity to buy-into indirect PNG LNG equity up to a collective maximum of 4.22%.

3. Development Levy

A Development Levy of 2% of the wellhead value, calculated per the provision of the Oil & Gas Act and the LNG Gas Agreement, is available to the provincial governments and the local level governments.

4. Infrastructure Development Grants (IDG)

An amount of K1.2 billion has been allocated equally over two five year periods, commencing in 2010 for infrastructure development and maintenance in the affected Project areas and provinces.

5. Business Development Grants (BDG)

The State has provided K120 million to assist landowner companies in business development activities under the PNG LNG Project.

Source: Based on information provided by the PNG Department of Petroleum and Energy (DPE) plus online information. For a copy of the UBSA readers should contact DPE directly.

Appendix IX: A teaching note on the PNG LNG Project

The initial idea for writing the case study came out of a dialogue between a team of ExxonMobil executives and a group of graduate school students and faculty from various Boston-based universities in 2011, which explored some of the stakeholder engagement mechanisms and partnerships that need to be established when developing a single oil and gas project. The discussion created a lively debate on the relative leadership roles and responsibilities of large energy companies, host governments, local community leaders, and civil society organizations in ensuring that large-scale projects are developed in a way that optimizes shared value and benefits and minimizes shared risks and costs among different stakeholders. Other than the social and environmental compliance reporting that is now required by the funders of many large-scale projects,

we found relatively few case studies or reports that focus in depth on the construction of a specific oil and gas project, and describe the range of internal policies, standards and management systems, international voluntary principles and standards, stakeholder engagement mechanisms, cross-sector partnerships, and policy dialogues that are increasingly being implemented by major project operators to ensure responsible and economically viable project development. ExxonMobil agreed to share some of the practices and lessons of managing social, economic and environmental risks and benefits in the construction of the PNG LNG Project. The resulting case study is aimed primarily at providing an overview for students and people who are not experts in the oil and gas industry, but will hopefully also be useful to practitioners and policy makers.

The following questions aim to offer guidance to teachers, student study groups, other discussion groups or individuals interested in exploring some of the dilemmas and leadership challenges raised by the experience of the construction phase of the PNG LNG Project.

STAKEHOLDER ENGAGEMENT

- | | | |
|---|---|--|
| <p>1. Given the diversity of stakeholders involved in the PNG LNG Project, what approaches have helped to ensure that all parties are informed of developments and involved in decision-making?</p> <p>2. Communication among the various stakeholders, particularly the local community, is critical for success. Where has the project operator been successful in establishing effective communication processes and mechanisms? Are there gaps?</p> <p>3. What types of goals and principles did the project operator establish to ensure the success of its community engagement? What is the value or importance of each of these both to the company and to the community?</p> | <p>4. The project operator concentrated on building the capacity of local institutions (particularly in health and the environment) rather than independently doing all this work on its own or setting up its own community foundations. What are the pros and cons of taking this approach?</p> <p>5. How were cross-sector partnerships critical to the success of this stage of the Project, and to its success going forward?</p> <p>6. Could the project operator have gained license to operate without as broad a range of partnerships? Did it get too specific, or not specific enough?</p> <p>7. The case study focuses on the role of the project operator, a private sector entity. However, long-term national success or</p> | <p>failure arising from the Project will largely come down to what the government does, especially in the areas of resource revenue management and development planning and delivery. If that is the single most important determinant of outcomes, what more could the company and other stakeholders do to work with government and to help to improve government effectiveness to achieve better development results?</p> <p>8. What are some of the common lessons on stakeholder engagement from the case study? How can other operators of large-scale resource projects replicate these approaches or adapt them to different operating environments?</p> |
|---|---|--|

ASSESSING AND MANAGING SHARED RISKS AND BENEFITS

- | | | |
|--|---|--|
| <p>9. Discuss the benefits of the Project to Papua New Guinea. What are the economic, social and environmental risks that are common to this Project and to natural resource-rich countries more broadly? How have the project partners mitigated these risks? What are the gaps?</p> <p>10. Discuss the benefits of the Project to the local community, and weigh these against Project risks.</p> <p>11. The parent company of the project operator has established distinct internal policies and systems to ensure effective risk management and accountability.</p> | <p>Discuss the internal policies and their impact so far. What are some of the challenges of applying global policies to local socio-cultural and political contexts?</p> <p>12. The Project operator is a voluntary signatory to a variety of international principles and standards. How does adherence to such principles and standards affect the Project in both its operation and its license to operate? What are some of the pros and cons of international voluntary principles and standards?</p> | <p>13. Discuss the Project operator's approach to managing environmental impact through its biodiversity strategy. What are the benefits and risks of using this type of approach?</p> <p>14. Discuss the potential long-term impact of the project operator's investment in local content and in capacity-building. Why do these activities matter to both the Project and the host country?</p> <p>15. Discuss the use of third-party certifiers and information-providers, as well as the cooperation with noncommissioned studies.</p> |
|--|---|--|

ADAPTING INTERNATIONAL GOOD PRACTICE TO LOCAL CONTEXTS AND DIFFERENT STAGES OF A PROJECT LIFE CYCLE

- | | | |
|--|---|--|
| <p>16. How has the project operator adapted its community affairs strategy to the complex local context?</p> <p>17. Given the complex cultural and socio-political context in which the PNG LNG Project is being constructed, can the Project operator and its business partners succeed over the life of the project in helping to create more economic opportunity, better access to</p> | <p>health care and education, and women's empowerment? Or is this beyond the role, responsibility and ability of private sector companies no matter how large their investment?</p> <p>18. What recommendations would you make for national, provincial and local government officials in PNG in terms of how they can more effectively manage the risks and optimize the benefits of</p> | <p>large-scale natural resource projects?</p> <p>19. What challenges exist for the Project operator and the government in moving from the construction to the production phase?</p> <p>20. What role do you think individual leaders in business and government can and should play in helping to spread good practices and to promote more inclusive and sustainable development?</p> |
|--|---|--|

- 1 There is an extensive literature on the risks and opportunities associated with large-scale extractive projects, including research on the Resource Curse and Dutch Disease. Useful references include: Ross, Michael. *The Oil Curse: How Petroleum Wealth Shapes the Development of Nations*. Princeton University Press, 2012.
Collier, Paul. *The Plundered Planet: Why We Must – and How We Can – Manage Nature for Global Prosperity*. Oxford University Press, 2010.

There are also a number of dedicated resource governance and extractive industry initiatives based in universities, think-tanks, nonprofit organizations and international development agencies. They include initiatives at the World Bank Group, Chatham House, the Revenue Watch Institute, the Natural Resource Charter, Oxfam, and Publish What You Pay.
- 2 The PNG Oil and Gas Act defines the ‘Project Impact Area’ as the area within 5 km of a project asset. This is usually an inadequate definition from an environmental and community management point of view, given that a much wider subset of ecosystems and communities are often touched, both directly and indirectly, by a project’s activities.
- 3 Readers interested in impact assessments or evaluations of the Project are referred to a number of independent and commissioned impact studies and surveys that have been undertaken over the past five years by different research institutions, consultants and non-governmental organizations. Studies on the socio-economic impact to date of the PNG LNG Project include the following – some of which emphasize the positive impact and potential of the project and others of which highlight real and perceived risks and costs of the project: *PNG LNG Economic Impact Case Study: An assessment of the direct and indirect impacts of the proposed PNG LNG Project on the economy of Papua New Guinea*. ACIL Tasman Pty Ltd, February 6, 2008; Dixon, Peter B., Gae Kauzi and Maureen T. Rimmer. *Effects on the PNG Economy of a Major LNG Project*. The Economic Society of Australia, 2010; *Listening to the Impacts of the PNG LNG Project*. Oxfam Australia, November 2011; *The Community Good: Examining the Influence of the PNG LNG Project in the Hela Region of Papua New Guinea*. Child Fund Australia, the National Centre for Peace and Conflict Studies at the University of Otago, Jubilee Australia, the Oxfam Highlands Programme, the Melanesian Institute, and the PNG Church Partnership Programme, May 2012; *Pipe Dreams: the PNG LNG Project and the Future Hopes of a Nation*. Jubilee Australia Research Centre, December 2012.

Additional technical, social and environmental details on the Project are available on www.pnglng.com. These include the 6,000-page Environmental Impact Statement, the Environmental and Social Management Plan with some 30 detailed Appendices, quarterly performance reports produced since 2010 by the Project, and nine environmental and social compliance monitoring reports produced by an independent consultant appointed by the group of Export Credit Agencies and commercial banks that provided project finance.
- 4 The Independent Environmental and Social Consultant, D’Appolonia, made three trips to PNG and to the Project area before the close of the project finance agreement in 2009. As of August 2013, an additional 9 visits have taken place and 9 reports have been produced since the financial close. All reports are available on www.pnglng.com or via D’Appolonia.
- 5 A Vision Statement by Ban Ki-moon, Secretary-General of the United Nations: Sustainable Energy for All. The United Nations, November 2011.
- 6 Preamble. The Natural Resource Charter, November 2010. www.naturalresourcecharter.org
- 7 PNG ranks 156th out of 186 countries and territories in the *2013 United Nations Human Development Index*. It ranks 39th out of 58 countries in the *2013 Resource Governance Index*, which measures transparency and accountability in the oil, gas and mining sector of resource-rich countries. It is 104th out of 185 countries in the World Bank’s *2013 Doing Business report*, which assesses the ease of doing business and business regulatory practices, and 150th out of 174 countries in the *2012 Transparency International Corruption Perceptions Index*, which ranks countries on how corrupt their public sector is perceived to be.

Data on PNG’s performance on the Millennium Development Goals is available in the Global Monitoring Report 2013, a joint publication of the World Bank and the International Monetary Fund.
- 8 *Country Partnership Strategy for the Independent State of Papua New Guinea for the period FY2013-2016*. The World Bank Group. November 8, 2012.
- 9 *Papua New Guinea: Critical Development Constraints*. Country Diagnostics Studies. Asian Development Bank, Manila: 2012.
- 10 *ExxonMobil 2010 Corporate Citizenship Report*. ExxonMobil, 2011.
- 11 D’Appolonia S.p.A. was first appointed by the Lenders to conduct a due diligence assessment as part of the

- pre-loan assessment process in 2009. After the financial close of the loan the firm was re-appointed by the Lender Group to serve as the Independent Environmental and Social Consultant (IESC) for the PNG LNG Project on behalf of the Export Credit Agencies and commercial banks providing Project financing. As of August 2013, D'Appolonia had conducted nine field visits to monitor conformance with Project environmental and social commitments made during actual Project development. All of its site visit reports are available on www.pnglng.com
- 12 *PNG LNG Economic Impact Study: An assessment of the direct and indirect impacts of the proposed PNG LNG Project on the economy of Papua New Guinea*. Prepared for ExxonMobil by ACIL Tasman. February 6, 2008.
 - 13 Dixon, Peter. B, Kauzi, Gae, and Rimmer, Maureen, T. *Effects on the PNG Economy of a Major LNG Project*. Economic Papers, VOL. 29, No 2, June 2010, 143-155. The Economic Society of Australia, 2010.
 - 14 *Pipe Dreams: the PNG LNG Project and the Future Hopes of a Nation*. Jubilee Australia Research Centre, December 2012.
 - 15 <http://stats.oecd.org/qwids/#?x=2&y=6&f=3:51,4:1,1:1,5:3,7:1&q=3:51+4:1+1:1+5:3+7:1+2:136+6:2007,2008,2009,2010,2011,2012>
 - 16 A brochure outlining the OIMS Framework, including the 11 Elements and 65 Expectations can be found at: http://www.exxonmobil.com/Corporate/Files/OIMS_Framework_Brochure.pdf
 - 17 The 11 Elements of the ExxonMobil Operations Integrity Management System are as follows: Management, Leadership, Commitment and Accountability; Risk Assessment and Management; Facilities Design and Construction; Information and Documentation; Personnel and Training; Operations and Maintenance; Management of Change; Third-Party Services; Incident Investigation and Analysis; Community Awareness and Emergency Preparedness; and Operations Integrity Assessment and Improvement.
 - 18 Rex W. Tillerson, Chairman and CEO, ExxonMobil. "Statement to the National Commission on the BP Deepwater Oil Spill and Offshore Drilling." November 9, 2010.
 - 19 For more details on the UN Guiding Principles on Business and Human Rights see: www.shiftproject.org and www.businessandhumanrights.org
 - 20 For more details see <http://www.voluntaryprinciples.org>
 - 21 *Listening to the Impacts of the PNG LNG Project*. Oxfam Australia, November 2011.
 - 22 *The Community Good: Examining the Influence of the PNG LNG Project in the Hela Region of Papua New Guinea*. Child Fund Australia, the National Centre for Peace and Conflict Studies at the University of Otago, Jubilee Australia, the Oxfam Highlands Programme, the Melanesian Institute, and the PNG Church Partnership Programme, May 2012.
 - 23 *To No Net Loss and Beyond: An overview of the Business and Biodiversity Offsets Programme (BBOP)*. Forest Trends and the Wildlife Conservation Society provide the Secretariat for BBOP. Washington DC; 2013.
 - 24 Copies of all D'Appolonia's reports, as well as the documents outlined in this section are publicly available on the PNG LNG website or through application to Esso Highlands Limited or D'Appolonia.
 - 25 Dutch Disease refers to the unintended negative impact of a resource boom on a country's non-resource tradable sector (agriculture, manufacturing, and tradable services such as tourism) caused by factors such as real currency appreciation, a rise in government spending, a rise in the prices of non-traded goods, a resultant shift of resources out of non-commodity traded goods, and rising current account deficits.
 - 26 Full details of the 51-page PNG LNG National Content Plan (PGGP-EH-BPZZZ-000013) are available on the project's website: www.pnglng.com
 - 27 Asian Development Bank. *Papua New Guinea: Critical Development Constraints*. ADB, Manila: 2013.
 - 28 For further information on the foundations of the Australian Vocational Education Training system and AQTF, see <http://www.tpatwork.com/Back-2-Basics/System-basics/The-national-VET-system.aspx>
 - 29 Good examples of corporate-led or project-led foundations already existing in PNG include the PNG Sustainable Development Foundation, established by Ok Tedi mine, and the Oil Search Health Foundation.
 - 30 *Country Partnership Strategy for the Independent State of Papua New Guinea for the period FY2013 – 2016*. The World Bank: November 8, 2012. Report No. 71440-PG.
 - 31 For the purposes of this report, the currency conversion rate used between Papua New Guinean Kina (Kina) and United States Dollars (US\$) is 0.4570 [1 Kina = US\$0.4570]. This rate is as published by the bank of Papua New Guinea on June 30, 2013.
 - 32 Revenue Watch Institute. *The 2013 Resource Governance Index: A Measure of Transparency and Accountability in the*

- Oil, Gas and Mining Sector*. Revenue Watch Institute, New York: 2013.
- 33 Presentation made by EHL on *EITI: A decade of Transparency Promotion*. Port Moresby, 8 October 2013.
- 34 These priority areas for PNG's participation in EITI draw on a speech made by Daniel Kaufmann, President of the Revenue Watch Institute, at an EITI meeting in February 2013, and on some of the findings of EITI's ten-year strategic review. www.eiti.org
- 35 Two of the NGO reports that have raised these concerns are: *The Community Good: Examining the Influence of the PNG LNG Project in the Hela Region of Papua New Guinea*. Child Fund Australia, the National Centre for Peace and Conflict Studies at the University of Otago, Jubilee Australia, the Oxfam Highlands Programme, the Melanesian Institute, and the PNG Church Partnership Programme, May 2012; and *Pipe Dreams: the PNG LNG Project and the Future Hopes of a Nation*. Jubilee Australia Research Centre, December 2012. The PNG Institute for National Affairs, and its Director, Paul Barker, has also play a key role in highlighting some of the challenges and opportunities associated with the Benefit Sharing Agreements for the PNG LNG project and with the country's benefit sharing system more broadly.
- 36 <http://stats.oecd.org/qwids/#?x=2&y=6&f=3:51,4:1,1:1,5:3,7:1&q=3:51+4:1+1:1+5:3+7:1+2:136+6:2007,2008,2009,2010,2011,2012>
- 37 The Independent Environmental and Social Consultant, D'Appolonia, made three trips to PNG and to the Project area before the close of the project finance agreement in 2009. As of August 2013, an additional 9 visits have taken place and 9 reports have been produced since the financial close. All reports are available on www.pnglng.com or via D'Appolonia.
- 38 A Vision Statement by Ban Ki-moon, Secretary-General of the United Nations: Sustainable Energy for All. The United Nations, November 2011.

The case study was written by Jane Nelson and Kara Valikai, from the Corporate Social Responsibility Initiative at Harvard Kennedy School. The research and analysis was based on:

- A site visit to Papua New Guinea in September 2012, hosted by EHL
- In-person and telephone-based interviews with stakeholders in government, non-governmental organizations, community groups, business associations, and the donor and diplomatic community. These included discussions with several PNG government Ministers and local government officials in the Project area; with community leaders, members of women's associations and youth groups, resettled households, farmers, and community participants in the Personal Viability Training Program and the Global Women in Management initiative; with representatives from the Institute of Banking and Business Management and the PNG Chamber of Mines and Petroleum; and with diplomats, executives, practitioners and researchers from the World Bank, the Australian Embassy in PNG, the Australian Aid Programme (formerly AusAid), WWF, Mama Graun Conservation Trust Fund, Conservation International, Oxfam, Transparency International, the Extractive Industries Transparency Initiative (EITI), and the United Nations Development Programme.
- Interviews with and presentations from business executives, project managers and functional experts in EHL and ExxonMobil; and
- A literature review of commissioned and independent studies related to the PNG LNG Project directly and of other reports on responsible large-scale project development more broadly.

Kara Valikai worked as a graduate student intern for the Women's Economic Opportunity Initiative of ExxonMobil during the summer of 2012, looking at programs to support women's empowerment, and Jane Nelson participates in the company's External Citizenship Advisory Panel.

References

- "A Vision Statement by Ban Ki-moon, Secretary-General of the United Nations: Sustainable Energy for All." The United Nations, November 2011.
- Acosta, Andrés Mejía. "Impact and Effectiveness of Transparency and Accountability Initiatives: A review of the evidence to date." Annex 4, Natural Resource Governance. Institute of Development Studies, October 2010.
- Bakani, Loi M. "The LNG Project and Papua New Guinea's economy." Presentation by Governor of the Bank of Papua New Guinea at the Consultative Implementation and Monitoring Council (CIMC) Workshop. Port Moresby, 31 March 2011.
- Barker, Paul. "Balancing Needs, Claims and Demands: Setting the agenda and ensuring resource projects contribute and don't undermine sustainable development objectives and priorities." Papua New Guinea Institute of National Affairs, 18 March 2013.
- Barker, Paul. "Impact of the LNG Project on Agriculture and Managing Resource Wealth." Institute of National Affairs. Presentation at LNG and Agriculture Workshop, 31 March - 1 April 2011.
- Barker, Paul. "Impact of the LNG project and Managing the Wealth from the Project, notably through a Sovereign Wealth Fund." Presentation to the Sovereign Wealth Fund workshop hosted by the Treasury and Bank of PNG. 13 May and 25 May 2010.
- Barker, Paul. "Sustainable Wealth Creation." Institute of National Affairs. Address to CPA Joint Annual Conference, 16-17 November 2011.
- Barker, Paul. "PNG's Economy 2012 – past, present and future prospects." Institute of National Affairs, 2012
- "Biodiversity Strategy, (2nd Revision)." Esso Highlands Limited, with participation of Coffey Environments Pty Ltd, December 2010.
- "Bringing a Human Rights Lens to Stakeholder Engagement." Shift, August 2013.
- "Building on achievements: A proposal to improve the EITI by making the EITI Reports better, implementation simpler, and the EITI a stronger platform for wider reforms." Board Paper 21-2-A, EITI, 8 October 2012.
- "Business Advantage Papua New Guinea." Business Advantage International, 2012/2013.
- "Business Assessment for the PNG LNG Project: Company profiles of PNG-owned companies." *Assessment Magazine* 2011. Enterprise Centre 2nd Issue. 2011.
- Callick, Rowan, "Adventures in Wonderland." *The Deal*, June 2012.
- "Child Labor in Papua New Guinea." International Labour Organization, 2011.
- Coll, Steve. *Private Empire: ExxonMobil and American Power*. The Penguin Press, 2012.
- Collier, Paul. *The Plundered Planet: Why We Must – and How We Can – Manage Nature for Global Prosperity*. Oxford University Press, 2010.
- "Corporate responsibility." Australian Export Finance and Insurance Corporation website. Accessed March 2013.
- "CommDev: Enhancing Benefits to Communities." Website supported by International Finance Corporation and donor governments.
- "Community Support Strategy Attachment 2: Community Development Support Plan." Esso Highlands Limited, August 2011.
- Corporate Citizenship Reports from 2009 to 2012. ExxonMobil.
- "Corruption Perceptions Index." Transparency International, 2012.
- "Country Partnership Strategy for the Independent State of Papua New Guinea for the Period FY2013-2016." World Bank Group, 8 November 2012.
- Curto, Stefano. "Sovereign Wealth Funds in the Next Decade." World Bank, 2010.
- Davis, Rachel and Daniel M. Franks. "The costs of conflict with local communities in the extractive industry." Paper prepared by the Corporate Social Responsibility Initiative, Harvard Kennedy School, and the Centre for Social Responsibility in Mining, The University of Queensland for SRMining, Chile, October 2011.
- Dimitroff, Thomas J. (consulting ed) "Risk and Energy Infrastructure: Cross-Border Dimensions." Globe Business Publishing Ltd, 2011.
- Dixon, Peter B., Gae Kauzi and Maureen T. Rimmer. "Effects on the PNG Economy of a Major LNG Project." The Economic Society of Australia, 2010.
- "Dodgy Deal: Liquefied Natural Gas (LNG) Project Papua New Guinea." BankTrack, 2013.
- "Doing Business 2013: Economy Profile: Papua New Guinea." World Bank Group, 2012.
- "Doing Business 2013: Smarter Regulations for Small and Medium-Size Enterprises." World Bank Group, 2013.
- "Ecosystem services guidance: Biodiversity and ecosystem services guide." IPIECA, May 2011.
- "EITI Rules, 2011 Edition including the Validation Guide (Version 1)." EITI International Secretariat, November 2011.
- "EITI: A Decade of Transparency Promotion." Presentation in Port Moresby. Esso Highlands Limited, 8 October 2013.
- "Engendering Mines in Development: A Promising Approach from Papua New Guinea." World Bank Group, 2012.
- "Environmental and Social Management Plan (1st Revision)." Esso Highlands Limited, November 2010.
- "Environmental and Social Management Plan Appendix 24: Company Community Health, Safety and Security Management Plan (3rd Revision)." Esso Highlands Limited, November 2010.
- "Environmental and Social Management Plan, Appendix 26: Resettlement Policy Framework (3rd Revision)." Esso Highlands Limited, November 2010.
- "Environmental Impact Statement." Esso Highlands Limited (prepared by Coffey Natural Systems Pty Ltd), January 2009.
- "External Monitoring of the Chad-Cameroon Pipeline Project." International Finance Corporation, September 2006.
- "ExxonMobil's Papua New Guinea LNG Project." Fact Sheet, Pacific Environment website. Accessed November 2013.
- "Facing the Resource Curse: Norway's Oil for Development Programme." Norwegian Agency for Development Cooperation, 2012.
- "Fact Sheets." Esso Highlands Limited, 2009.
- "Finding Balance: Benchmarking the Performance of State-Owned Enterprises in Papua New Guinea." Asian Development Bank, 2012.
- Flemming, Dennis. "Management of Social and Environmental Issues in Papua New Guinea." March 2013
- Fukuyama, Francis. "Governance Reform in Papua New Guinea." September 2007.
- Fukuyama, Francis. "Observations on State-Building in the Western Pacific." March 2007.
- "From Audit to Innovation: Advancing Human Rights in Global Supply Chains." Shift, August 2013.
- Global Monitoring Report 2013. Rural-Urban Dynamics and the Millennium Development Goals. A joint publication of the World Bank the International Monetary Fund, 2013.
- Greenspan, Emily. "Watching the watchdogs: Evaluating independent expert panels that monitor large-scale oil and gas pipeline projects." Oxfam America, 2011.
- Heuty, Antoine. "Can Transparency Transform Mineral Wealth into Wellbeing? Good Governance of Mineral Resources in Maghreb: The Challenges and Opportunities

References

- of Regionalization." Revenue Watch Institute, October 2012.
- Hackenbruch, Michael, and Jessica Davis Pluess. "Commercial Value From Sustainable Local Benefits in the Extractive Industries: Local Content." *Business for Social Responsibility*, March 2011.
- "Human Development Index." United Nations Development Programme, 2013.
- "Human rights due diligence process: A practical guide to implementation for oil and gas companies." IPIECA, November 2012.
- IFC Sustainability Framework, Policy and Performance Standards on Environmental and Social Sustainability Access to Information Policy. IFC, 2012.
- IFC Performance Standards on Environmental and Social Sustainability, Effective January 1, 2012. IFC, 2012.
- "Implementing EITI for Impact: A Handbook for Policy Makers and Stakeholders." Anwar Ravat and Sridhar P. Kannan, eds. *Extractive Industries Transparency Initiative*, 2012.
- "Implementing the Extractive Industries Transparency Initiative: Applying Early Lessons from the Field." *The International Bank for Reconstruction and Development/The World Bank*, 2008.
- "Improving social and environmental performance: Good practice guidance for the oil and gas industry." IPIECA, April 2013.
- "Indigenous Peoples and Mining: Position Statement." International Council on Mining and Metals, May 2013.
- "Indigenous Peoples and the oil and gas industry: context, issues and emerging good practice." IPIECA, April 2012.
- "Integrating human rights into environmental, social and health impact assessments: A practical guide for the oil and gas industry." IPIECA and the Danish Institute for Human Rights, 2013.
- "Investing in Women's Employment: Good for Business, Good for Development." International Finance Corporation, 2013.
- Jackson, Ira and Jane Nelson. *Profits with Principles: Seven Strategies for Delivering Value with Values*. Currency Doubleday, 2004.
- Kaufmann, Daniel, President of Revenue Watch Institute. Speech at EITI meeting, February 2013.
- "Letter to Chief Credit Officer, Export Finance and Insurance Corporation, Australia. Re: Joint Submission on Papua New Guinea - Liquefied Natural Gas Project." Jubilee Australia and Pacific Environment, 17 July 2009.
- Levett, Michael and Ashley Chandler. "Maximizing Development of Local Content Across Industry Sectors in Emerging Markets." Center for Strategic and International Studies, May 2012.
- "Lifting the Resource Curse: How poor people can and should benefit from the revenues of extractive industries." Oxfam Briefing Paper, December 2009.
- "Listening to the Impacts of the PNG LNG Project: Central Province, Papua New Guinea." Oxfam Australia, November 2011.
- "Local content strategy: a guidance document for the oil and gas industry." IPIECA, October 2011.
- LNG Watch Papua New Guinea website.
- "Making consent work for quality investment in the extractive industries." IIED, April 2013.
- "Managing health for field operations in oil and gas activities." IPIECA, October 2011.
- Marcel, Valérie (ed). "Guidelines for Good Governance in Emerging Oil and Gas Producers." Chatham House project on good governance in the national petroleum sector. The Royal Institute of International Affairs, September 2013.
- Menzies, Nicholas and Georgia Harley. "We Want What the Ok Tedi Women Have!" Guidance from Papua New Guinea on Women's Engagement in Mining Deals. Briefing Note, Promoting equity and managing conflict in development (J4P). The World Bank, September 2012.
- Moran, Theodore H. "Promoting Universal Transparency in Extractive Industries: How and Why?" Center for Global Development, February 2011.
- "National Agriculture Development Plan 2007 – 2016, Policies and Strategies Volume 1." Independent State of Papua New Guinea Ministry of Agriculture and Livestock, 2007.
- "Natural Resource Charter." November 2010.
- Nelson, Jane. "Building Competitiveness and Communities: How world class companies are creating shareholder value and social value." The Prince of Wales Business Leaders Forum, the World Bank and the United Nations Development Programme, 1998.
- Nelson, Jane, and Marli Porth and Kara Valikai. "Business Approaches to Tackling Malaria: Executive Summary." Corporate Social Responsibility Initiative, Harvard Kennedy School, January 2013.
- Nelson, Jane. "Business as Partners in Development: Creating wealth for countries, companies and communities." The Prince of Wales Business Leaders Forum, the World Bank and the United Nations Development Programme, 1996.
- Nelson, Jane. "Economic Multipliers: Revisiting the core responsibility and contribution of business to development." International Business Leaders Forum Policy Paper 2003, Number 4, July 2003.
- Nelson, Jane. "The Business of Peace: The private sector as a partner in conflict prevention and resolution." International Alert, Council on Economic Priorities and The Prince of Wales Business Leaders Forum, 2000.
- "Oil and Gas Act 1998." Independent State of Papua New Guinea.
- "Oil and gas industry guidance on voluntary sustainability reporting (2010 update)." IPIECA, The American Petroleum Institute, and International Association of Oil and Gas Producers, 2010.
- Oil and Gas Sector Guide on Implementing the UN Guiding Principles on Business and Human Rights. Prepared by the Institute for Human Rights and Business and Shift on behalf of the European Commission, 2013.
- "Oil-to-Cash: Fighting the Resource Curse through Cash Transfers." Research Initiative and Paper Series. Center for Global Development (CGD), January 2011- June 2013.
- "The Oil Industry Experience: Technology Cooperation and Capacity Building (Contribution to Agenda 21)." IPIECA, 1995.
- "Operational level grievance mechanisms: IPIECA Good Practice Survey." IPIECA, 2012.
- "Operations Integrity Management System Framework" brochure. ExxonMobil, 2009.
- "Ownership of Extractive Resources in PNG." PNG Chamber of Mines and Petroleum, February 2012.
- Oxfam America, Background--Oil, gas and mining (website). Accessed February 2013.
- "Papua New Guinea 2012 Article IV Consultation - Staff Report; Public Information Notice." International Monetary Fund, May 2012.
- "Papua New Guinea: 2011-2012 Country Gender Assessment." The World Bank, United Nations, Australian Aid, Independent State of Papua New Guinea and Asian Development Bank, 2012.
- "Papua New Guinea: Critical Development Constraints." Asian Development Bank, 2012.
- "Papua New Guinea Economic Briefing: Enjoying the Opportunities – and Facing the Challenges – of Resurgent Commodity Prices." The World Bank Group in Papua New Guinea, 2011.
- "Papua New Guinea Economic Briefing: The challenge of transforming today's boom into better living standards for tomorrow." The World Bank Group in Papua New Guinea, 2012.

References

- "Papua New Guinea Economic Briefing: From the last days of the boom to lasting improvements in living standards." The World Bank Group in Papua New Guinea, 2013.
- "Papua New Guinea Fact Sheet." International Labour Organization, January 2010.
- "Papua New Guinea LNG Project National Content Plan." ExxonMobil/Esso Highlands Limited, 2009.
- "Papua New Guinea: Public Expenditure and Service Delivery." PESD Working Group, 30 June 2004.
- Petley, Dave. "The Landslide Blog." American Geophysical Union Blogosphere website.
- "Pipe Dreams: The PNG LNG Project and the Future Hopes of a Nation." Jubilee Australia Research Centre, December 2012.
- "PNG LNG Project Quarterly Environmental and Social Report." All reports Q1 2010 through Q3 2013.
- PNG Chamber of Mines and Petroleum. Presentations made at the 12th Mining and Petroleum Investment Conference, Sydney, Australia, 2-5 December 2012.
- "PNG LNG Economic Impact Case Study: An Assessment of the Direct and Indirect Impacts of the Proposed PNG LNG Project on the Economy of Papua New Guinea." ACIL Tasman Pty Ltd., 6 February 2008.
- "PNG LNG Gas Agreement." Independent State of Papua New Guinea and Licenses, 22 May 2008.
- "PNG LNG Project Case Study." Export Finance and Insurance Corporation (EFIC), Government of Australia, 2013.
- PNG LNG Project website.
- "PNG Report: A focus on the Papua New Guinea Resource Sector." Aspermont Limited, August/September 2012.
- "PNG Resources: Reporting on PNG's Petroleum and Mineral Industry." Energy Publications, 2012.
- Porter, Michael E. and Mark R. Kramer. "Creating Shared Value: How to reinvent capitalism and unleash a wave of innovation and growth." Harvard Business Review, January 2011.
- "Report of the Independent Environmental & Social Consultant: Papua New Guinea LNG Project." D'Appolonia S.p.A. All reports May 2010 through July 2013.
- "Responsible Mining and Energy Fact Sheet." The Center for Environmental Leadership in Business, Conservation International, 2012.
- "Revisiting Approaches to Community Relations in Extractive Industries: Old Problems, New Avenues?" Energy, Environment and Resources Summary. Chatham House, 4 June 2013.
- "Risky Business: Shining a Spotlight on Australia's Export Credit Agency." Jubilee Australia, December 2009.
- Robbins, Joanne. C, Petterson, Michael. G, Mylne, Ken, Espi, Joseph, O. "Tumbi Landslide, Papua New Guinea: rainfall induced?" Landslides 10 (2013) 10:673-684.
- Ross, Michael. *The Oil Curse: How Petroleum Wealth Shapes the Development of Nations.* Princeton University Press, 2012.
- Ross, Michael. "Extractive Sectors and the Poor." Oxfam America, October 2001.
- "Socio-Economic Assessment Toolbox (SEAT)." Anglo American Services UK Ltd, 2012.
- "Stakeholder Engagement: A Good Practice Handbook for Companies Doing Business in Emerging Markets." International Finance Corporation, 2007.
- "Strategic Community Investment: A Good Practice Handbook for Companies Doing Business in Emerging Markets." IFC Advisory Services, International Finance Corporation, June 2010.
- "Strategies for Agriculture and Rural Development in Papua New Guinea (Volume 1)." National Agriculture Research Institute, July 2002.
- "The 2013 Resource Governance Index: A Measure of Transparency and Accountability in the Oil, Gas and Mining Sector." Revenue Watch Institute, 2013.
- "The Baku-Tbilisi-Ceyhan (BTC) Pipeline Project." Lessons of Experience: Number 2. International Finance Corporation, September 2006.
- "The Community Good: Examining the Influence of the PNG LNG Project in the Hela Region of Papua New Guinea." Child Fund Australia, the National Centre for Peace and Conflict Studies at the University of Otago, Jubilee Australia, the Oxfam Highlands Programme, the Melanesian Institute, and the PNG Church Partnership Programme, May 2012.
- "The Forgotten Disaster: Outstanding Issues Arising from the Tumbi Landslide." International State Crime Initiative. King's College London, 2012.
- "The Geology and Mineral Potential of Papua New Guinea." Papua New Guinea Department of Mining, 2005.
- Tillerson, Rex W. Chairman and CEO, ExxonMobil. "Statement to the National Commission on the BP Deepwater Oil Spill and Offshore Drilling." 9 November 2010.
- "To No Net Loss and Beyond: An Overview of the Business and Biodiversity Offsets Programme (BBOP)." Forest Trends, 2013.
- Tsalik, Svetlana, and Shiffirin, Anya. (eds) "Covering Oil: A Reporter's Guide to Energy and Development." Open Society Institute, 2005.
- Tumbi (Lanjako/Nogoli Perepa) Council Ward in the Komo LLG Assessment Form. National Disaster Center. NDC Technical Assessment Team report to Minister Mark Maipaikai. January 26, 2012.
- "Umbrella Benefit Sharing Agreement." The Independent State of Papua New Guinea et al., 2009.
- Villarreal, Debra J., and Lucas LaVoy. "Oil and Gas Exploration and Development Agreements." Chapter 10, 31st Annual Institute of the Energy & Mineral Law Foundation, 2010.
- "Voluntary Principles on Security and Human Rights: Implementation Guidance Tools." IPIECA, International Committee of the Red Cross, International Council on Mining and Metals, and International Finance Corporation, January 2012.
- Wilson, Emma and Judy Kuszewski. "Shared value, shared responsibility: A new approach to managing contracting chains in the oil and gas sector." The International Institute for Environment and Development (IIED), April 2011.
- Wise, Holly, and Sokol Shtylla. "The Role of the Extractive Sector in Expanding Economic Opportunity." Corporate Social Responsibility Initiative Report 18. Harvard Kennedy School, 2007.
- "Working towards a better future: 2013 Papua New Guinea National Budget." PricewaterhouseCoopers, 2012.
- "World Bank Oil, Gas and Mining Policy Division." Brochure. The World Bank, August 2009.
- Yauieb, Anthony, Deputy Secretary, Papua New Guinea Department of Treasury. "Presentation Paper on Sovereign Wealth Fund," 12 September 2012.
- Zandvliet, Luc, and Mary B. Anderson. *Getting it Right: Making Corporate-Community Relations Work.* Greenleaf Publishing, 2009.



The Corporate Social Responsibility Initiative (CSRI), www.hks.harvard.edu/m-rcbg/CSRI/, at the Harvard Kennedy School's Mossavar-Rahmani Center for Business and Government (M-RCBG) is a multi-disciplinary and multi-stake-holder program that seeks to study and enhance the public contributions of private enterprise. The initiative explores the intersection of corporate responsibility, corporate governance, and public policy, with a focus on analyzing institutional innovations that enhance governance and accountability and help to achieve key international development goals. It bridges theory and practice, builds leadership skills, and supports constructive dialogue and collaboration among business, government, civil society and academics. Founded in 2004, the CSR Initiative works with a small Corporate Leadership Group consisting of global companies that are leaders in the fields of corporate responsibility, sustainability or creating shared value. The Initiative also works with other leading CSR and sustainability organizations, government bodies, non-governmental organizations and companies to leverage innovative policy research and examples of good practice in this field.



HARVARD Kennedy School

*Corporate Social
Responsibility Initiative*

CSR Initiative

Harvard Kennedy School

79 John F. Kennedy Street

Cambridge, MA 02138 USA

www.hks.harvard.edu/m-rcbg/CSRI/