

RESEARCH PAPER SERIES

ELLA Area: Economic Development

ELLA Theme: Oil and Gas Local Content



ELLA

Evidence and lessons
from Latin America

REGIONAL EVIDENCE PAPERS

Local Content Frameworks in Latin American Oil and Gas sector: Lessons from Ecuador and Colombia



Grupo Faro
Ecuador

ELLA REGIONAL EVIDENCE PAPERS

Regional Evidence Papers are an output of the ELLA Programme. They contain an overview of regional evidence, as well as original data collection and analysis, on a particular research topic. A pair of Regional Evidence Papers are produced on each topic, one focused on Latin America and one on Africa, using a common research question and design. This Regional Evidence Paper is paired with a sister paper whose title is "Local Content Frameworks in the African Oil and Gas Sector: Lessons from Angola and Chad", authored by ACODE, in Uganda. Based on these two [regional papers](#), a Comparative Evidence Paper is constructed, comparing the experiences of the two regions, in order to support inter-regional lesson-learning. All publications can be found in the ELLA programme [website](#).

ABOUT THE AUTHORS*

The authors work at Grupo Faro. [Juan José Herrera](#) is the Head of Grupo Faro's Extractive Industries Program, his research interest focus is in extractive industries and energy. [Marcela Morales](#) is a researcher in the extractive industries Programme at Grupo Faro, and her research interests include education programmes, extractive industries, human rights, intercultural communication, gender and social dynamics and research methods. [Sebastián Jarrín](#) is also researcher in the extractive industries at Grupo Faro and his research focuses on the extractive industries.

ABOUT THE ELLA PROGRAMME

ELLA, which stands for Evidence and Lessons from Latin America, is a south-south knowledge and exchange programme that mixes research, exchange and learning to inspire development policies and practices that are grounded in evidence about what works in varied country contexts. The programme has been designed and is coordinated by [Practical Action Consulting \(PAC\) Latin America](#), in line with the objectives agreed with the funder, the [UK Department for International Development \(DFID\), UK Aid](#). The [Institute for Development Studies \(IDS\), Sussex University, UK](#), supports on research design, methods and outputs. To learn more about ELLA go to our [website](#), where you can also browse our other publications on various [development issues](#).

ACKNOWLEDGEMENTS

The authors are grateful for comments on drafts from Shandana Mohmand, Javier Arellano, Don Leonard, Peter Houtzager, Mark Lewis and Raúl Aldaz. Copy editing by Rebecca Clements. Design by the Communications team at Practical Action Peru.

*The views expressed in in this paper are those of the author(s), and do not necessarily reflect the views of the ELLA programme.



SUMMARY

During recent decades, debate around non-renewable resources has mainly focused on finding sustainable and alternative ways to enhance development beyond the revenues generated by this sector and to avoid the resource curse. When it comes to extractive industries, particularly the oil and gas sector, these concerns are of major relevance due to the importance of this sector in many economies. For policy makers a key challenge is to find equilibrium between the short-term benefits of natural resource extraction and long-term requirements for achieving sustainable growth. Against a backdrop of contradictions and hard choices, local content is considered as an attractive solution to this dilemma.

This paper provides an analysis of local content frameworks and their outcomes in seven oil and gas producing countries in Latin America. Based on a review of regional experiences, the research aims to identify which types of local content framework produce more positive outcomes in terms of local employment, national industry participation and skills development. In order to do so, a regional catalogue of local content frameworks has been developed with the aim of helping fill the current knowledge gap in this regard. This study also explores the factors that can influence the outcomes of local content by drawing on the experiences of Ecuador and Colombia and using evidence gathered through interviews and meetings with representatives from the public and private sectors, as well as academics and other experts in this field.

Findings suggest that the greater the specificity of local content frameworks, the better the outcomes. Among countries with fairly similar frameworks in terms of specificity, a friendly business environment and a long-term vision of how the oil and gas sector can contribute to broader development goals appear to produce better results than a more protectionist and state-centric approach focused on short-term goals such as local employment.

It is intended that the findings of this research provide policy makers in Africa with insights that help guide decision-making around local content strategies. It is expected that drawing lessons from a resource rich region such as Latin America, whose experiences are more relatable to the challenges many countries in Africa face now, will be especially useful given that most existing literature on local content focuses on countries with incomparable contexts. Finally, this research provides policy makers and practitioners in Latin America with a much-needed comparative and regional perspective on local content which builds on existing literature and paves the way for further research.

TABLE OF CONTENTS

3

Summary

5

Glossary

6

Introduction

9

Research Design and Methods

13

Regional Evidence Synthesis

13

Local Content in Latin America: What do we Know?

16

What Don't we Know about Local Content in Latin America?

17

Local Content: Experiences from Around the World

18

Local Content Frameworks: Case Studies from Latin America

18

Local Content Frameworks Specificity

20

Local Content Outcomes

22

Correlation between Local Content Framework Specificity and Outcomes

29

Discussion of Findings

31

Conclusions and Policy Implications

32

References

35

Annexes

GLOSSARY

ANH	Agencia Nacional de Hidrocarburos (Colombia National Hydrocarbons Agency)
ANP	Agencia Nacional de Petróleo (Colombia National Petroleum Company)
GDP	Gross Domestic Product
IOC	International Oil Company
LC	Local Content
LE	Local Employment
NIP	National Industry Participation
NOC	National Oil Company
PDVSA	Petróleos de Venezuela S.A. (Venezuela National Petroleum Company)
PEMEX	Petróleos Mexicanos (Mexican National Petroleum Company)
PROMINP	Programme for Mobilising the National Oil and Natural Gas Industry (Brazil)
SD	Skills Development
YPF	Yacimientos Petrolíferos Fiscales (Argentinean National Oil and Gas Company)
YPFB	Yacimientos Petrolíferos Fiscales Bolivianos (Bolivian National Oil and Gas Company)

INTRODUCTION

Natural resources represent the main source of revenue for most Latin American countries. This trend increased during the boom in commodity prices when oil, gas and mining countries from the region achieved promising outcomes. Latin American countries are home to 20.1% of proven oil reserves in the world (British Petroleum, 2015). Oil and gas producing countries in the region include Argentina, Bolivia, Brazil, Colombia, Ecuador, Mexico and Venezuela, together home to 60% of proven oil reserves in the Americas. In fact, the region's oil and gas reserves rank second to the Middle East. In all of these countries, the oil and gas sector plays a relatively important role in the economy. The share of the oil and gas sector in relation to Gross Domestic Product (GDP) is higher than 30% in Venezuela (42%), Bolivia (33%) and Mexico (30%). For this group of countries, more than 50% of their total exports are oil and gas. For a second group conformed by Colombia (28%), Ecuador (28%), Argentina (23%), and Brazil (19%), the oil and gas sector represents less than 30% of total GDP. *Table 1* presents these and other characteristics of the oil and gas sector in Latin American countries.

Table 1. Characteristics of the Oil and Gas Sector in Latin American Countries

	Contribution of Hydrocarbons and Mining to GDP (2013)	Oil and Gas Exports (as % of Total Exports) (2014)	Thousands of Barrels Produced Daily (2014)	Proven Reserves in Billions of Barrels (2014)	R/P ratio in years**
Venezuela	42%	98%	2719	298,3	< 100
Bolivia	33%	55%	2	10,5	13,9
Colombia	28%	67%	990	2,4	6,8
Ecuador	28%	57%	556	8	39,4
Mexico	30%	13%	2784	11,1	10,9
Argentina	23%	5%	629	2,3	10,1
Brazil	19%	9%	2346	16,2	18,9

Sources: World Bank, 2013; World Trade Organization, 2014; British Petroleum, 2015.

**The R/P ratio is calculated dividing proven reserves by annual production, and represents remaining years of extraction for each country in the event that the country maintains current rates of extraction and does not find more reserves.

Due to the important role of the oil and gas industry in the economies of the region, during recent years policymakers have focused their efforts on developing measures to increase oil and gas revenues and, in some cases, to obtain additional benefits from these industries that can be transferred to other sectors of the economy - a strategy known as local content. Local content is defined as the extent to which the output of the extractive industry sector generates further benefits to the domestic economy beyond direct contributions through productive linkages with other sectors (Tordo et al., 2013). These linkages are created when the oil and gas industry purchases inputs that are supplied domestically instead of importing them, hires national labour or promotes skills development and knowledge transference (Auty, 2006; Heum et al., 2003). Although local content strategies vary from country to country, in general they can include regulations for increasing local employment and national industry participation (Natural Resource Governance Institute, 2015) or for enhancing skills development among national/local employees (Tordo et al., 2013).

In this research, *local employment* (LE) is understood as the direct work posts generated by oil and gas companies. Local employment can be promoted by establishing minimum targets or quotas to be filled with national/local employees. Some local employment provisions include differentiations in recruitment levels in order to avoid the concentration of local employees in non-skilled jobs. *Skills development* (SD) entails workforce development in the form of training and technology and knowledge transfer in favor of the national/local workforce. Skills development activities can be conducted by the company, the state, or public private partnerships formed between companies and the government. National industry participation (NIP) can be promoted through measures that encourage oil and gas companies to give preference to national/local companies when they purchase goods or services, thereby generating productive linkages.

Many governments have adopted strategies to promote local content based on the successful experiences of countries such as Norway (Heum, 2008), Nigeria (Heum, et.al, 2003; Ovadia, 2014) and Brazil (Tordo & Anouti, 2013). In order to create the incentives for oil and gas companies to give preference to national or local employees or suppliers, local content is often embedded in law as an obligatory requirement that companies must meet in order to operate. The state plays an important role in this process since local content frameworks are usually defined within a set of policies, laws and contracts. However, it is important to keep in mind that countries will adopt different strategies to promote local content depending on their needs and existing capabilities and that these strategies might also shape the outcomes achieved. According to Nordas et al. (2013), these outcomes depend as much on policy design as on implementation. Naturally, there are other factors that influence the outcomes of local content such as the ability to enforce these frameworks, the economic and social context, industrial capacity, available technology and transparency, among others. In practice, local content can face significant implementation and monitoring challenges (Aoun & Mathieu, 2015).

The adoption of local content in national legal frameworks has gained popularity worldwide and the topic has become part of the policy debate regarding extractive sectors in many countries in Africa and Latin America. African countries have eagerly included local content into their legislation and their experiences have been widely documented and analysed. The scenario in Africa includes countries that have already adopted local content as a key element of their oil and gas legislation, such as Nigeria, Angola and Ghana, and countries that are in the process of designing policies to maximise the benefits of their extractive sectors as they plan to initiate the extraction of their natural resources, like Uganda (Ovadia, 2014). Against this backdrop, Africa is going through an intense learning process about the challenges and potential of local content and could benefit from the experiences of other countries and regions in this respect.

With a longer tradition of extractive industries, Latin America has experienced and adopted local content in a different manner. While Brazil and Mexico have developed comprehensive local content frameworks, the rest of the oil and gas producing countries in the region have remained less specific about their strategies to promote local content. The long history of natural resource extraction in Latin America provides a rich source of experiences for regions like Africa. Yet despite being one of the major oil and gas producing regions, relatively little is known about the drivers, outcomes and lessons behind the adoption of local content in Latin America.

Since the starting point for many countries wishing to adopt local content as part of their development strategy is the creation of legal provisions, this research focuses on analysing different types of local content framework developed in Latin America as well as different strategies being adopted to promote local content. To do so, this study will analyse local content frameworks in terms of their specificity and the outcomes they have achieved. Specificity is understood as: a) The degree to which local content is embedded in general or sector specific policies, legislation or contract clauses; and b) The extent to which frameworks include measurement mechanisms, c) The extent to which frameworks include monitoring, and/or implementation mechanisms.



Photo 1: Oil Refinery

Credit: Carlos Rodríguez/Andes

This research will then identify how the outcomes of these frameworks are reported and explore the relationship between specificity and outcomes. The hypotheses behind this study are that: a) countries with more specific local content frameworks tend to achieve better outcomes than those with broader local content frameworks; b) local content strategies that prioritise national industry participation are more likely to generate long-term development benefits than strategies focused on generating local employment; and c) external factors play an important role in shaping the outcomes of local content frameworks. Finally, in order to identify factors that might shape contribute to the achievement of positive outcomes, this research analyses the cases of Ecuador and Colombia in detail.

This study seeks to fill the current gap in literature relating to experiences of local content in Latin American countries and, in doing so, aims to identify common trends and provide policymakers in Africa with evidence about different local content policy design options and their possible outcomes.

RESEARCH DESIGN AND METHODS

In order to address the proposed objectives, this research was designed in three stages described below.

Mapping Local Content Frameworks in Oil and Gas Producing Countries in Latin America

We conducted an initial mapping exercise in order to fill the gap in information regarding local content practices in Latin America. This entailed a review of legal documents from seven oil and gas producing countries in the region, namely Argentina, Bolivia, Brazil, Colombia, Ecuador, Mexico and Venezuela. In order to identify common characteristics of local content frameworks in these countries, we focused our analysis on three elements within each local content framework: policies¹, legislation² and contracts³.

In addition, we analysed three specific strategies for promoting local content: 1) promotion of local employment; 2) skills development for nationals, and; 3) national industry participation. Information was also collected from policy documents, legislation (laws, decrees, amendments etc.), and contracts containing local content provisions and compiled into the matrix shown in *Table 2*.

Table 2. Matrix of Analysis – Local Content Frameworks Characterisation

LC STRATEGY	PRESENCE IN FRAMEWORKS	ELEMENTS OF LOCAL CONTENT FRAMEWORKS		
		POLICIES	LEGISLATION	CONTRACTS
LOCAL EMPLOYMENT	GENERAL			
	SECTOR SPECIFIC			
SKILLS DEVELOPMENT	GENERAL			
	SECTOR SPECIFIC			
NATIONAL INDUSTRY PARTICIPATION	GENERAL			
	SECTOR SPECIFIC			

Source: Own elaboration

The result of this mapping exercise is a local content catalogue for the region, provided in Annex 1.

Establishing Connections Between the Specificity of Local Content Frameworks and their Outcomes.

One of our working hypotheses establishes that more specific local content frameworks lead to better outcomes. To observe this relationship, we scored local content frameworks and their outcomes in seven oil and gas producing countries as a way of being able to make comparisons between very different country contexts. Each country was

¹ Local content policies: Include general statements and/or plans to enhance local content that are not legally binding. These include national development plans and sector specific development plans and strategies.

² Local content legislation: Legally binding instruments developed by the state to promote local content. These tools include local content laws, local content provisions within laws, decrees, amendments and National Oil Company statutes.

³ Contracts: Legally binding agreements between the state and the oil and gas companies.

given a score relating to two categories: local content frameworks and local content outcomes. The scoring system entailed a scale that ranged between “-” lack of information, 0.5 (Low), 1 (Medium) and 1.5 (High)..

Local content frameworks were scored in terms of their specificity in relation to the following three indicators: a) The degree to which local content is embedded in general or sector specific policies, legislation or contract clauses; and b) The extent to which frameworks include measurement mechanisms, c) The extent to which frameworks include monitoring, and/or implementation mechanisms. The use of specific strategies to promote local content (i.e. promotion of local employment, skills development or national industry participation) were also analysed in every framework. In order to give each category a score, we developed the criteria presented in Table 3 below. An average score was then calculated for each country to rate its specificity.

Table 3. Scoring Matrix – Local Content Frameworks Specificity

STRATEGY	PRESENCE IN OIL AND GAS LEGAL FRAMEWORKS	MEASSUREMENT	MONITORING & IMPLEMENTATION MECHANISMS
LOCAL EMPLOYMENT (LE)	<ul style="list-style-type: none"> High (1.5) – There are LE provisions within specific LC laws and other oil and gas laws (i.e. hydrocarbons law) Medium (1) – There are provisions within oil and gas legislation. There are no specific local content laws Low (0.5) – Local content provisions are only included in general laws (i.e. labour law) 	<ul style="list-style-type: none"> High (1.5) – Entails a) LE quotas in % or other measuring mechanisms; and b) minimum requirements for hiring local employees in different positions, hierarchy or skills level Medium (1) – LE quotas in % or other measuring mechanisms; or b) minimum requirements for hiring local employees in different positions, hierarchy or skills level Low (0.5) – LE provisions are declaratory i.e. they do not include measuring mechanisms or minimum requirements for hiring local employees in different positions, hierarchy or skills level 	<ul style="list-style-type: none"> High (1.5) – There are entities that a) ensure the adoption/monitoring of LE regulations; and b) issue fines and/or incentives for the implementation of LE regulations Medium (1) – There are entities that a) ensure the adoption of LE regulations; orb) issue fines and/or incentives for the implementation of LE regulations Low (0.5) – Provisions do not include monitoring/implementation mechanisms
SKILLS DEVELOPMENT (SD)	<ul style="list-style-type: none"> High (1.5) – There are SD provisions within specific LC laws and other oil and gas laws (i.e. hydrocarbons law) Medium (1) – There are provisions within oil and gas legislation. There are no specific LC laws Low (0.5) – LC provisions are only included in general laws (i.e. labour law) 	<ul style="list-style-type: none"> High (1.5) – There are mechanisms to measure a) % of SD investment; and b) technology transfer Medium (1) – There are mechanisms to measure a) % of skills development investment; orb) technology transfer Low (0.5) – SD provisions are broad and declaratory i.e. they do not include measuring mechanisms or minimum requirements 	<ul style="list-style-type: none"> High (1.5) – There are entities that ensure a) adoption/ monitoring of SD regulations; and b) requirements for training programmes or agreements with universities/ other SD institutions are met Medium (1) – There are entities that ensure a) adoption/ implementation of SD regulations; or b) requirements for training programmes or agreements with universities/ other SD institutions are met Low (0.5) – Provisions do not include monitoring/implementation mechanisms
NATIONAL INDUSTRY PARTICIPATION (NIP)	<ul style="list-style-type: none"> High (1.5) – There are NIP provisions within specific LC laws and other oil and gas laws (i.e. hydrocarbons law) Medium (1) – There are provisions within oil and gas legislation. There are no specific LC laws Low (0.5) – LC provisions are only included in general laws (i.e. labour law) 	<ul style="list-style-type: none"> High (1.5) – There are a) mechanisms to measure NIP; and b) minimum % of NIP requirements in the oil and gas sector Medium (1) – There are a) mechanisms to measure NIP; or b) minimum % of NIP in the oil and gas sector Low (0.5) – NIP provisions are declaratory i.e. they do not include measuring mechanisms or minimum requirements 	<ul style="list-style-type: none"> High (1.5) – There are entities that ensure a) adoption/monitoring of NIP; and b) inclusion of NIP criteria in bidding processes Medium (1) – There are entities that ensure a) adoption/implementation of NIP; or b) inclusion of NIP criteria in bidding processes of the oil and gas sector Low (0.5) – Provisions do not include monitoring/implementation mechanisms

Source: Own elaboration

Given there is a general lack of data available for measuring the outcomes of local content, this analysis proved to be a challenge. Not all countries studied produce accurate and comparable data to measure whether local content strategies are being translated into practice. For this reason, and in order to assess local content outcomes, we drew from three information sources: a) data from oil and gas companies; b) oil and gas contracts⁴; and c) secondary sources such as public debate on local content and media reports. Annex 2 presents more details on the data gathered from oil and gas companies.

We developed criteria to help us compare local content outcomes between countries, as shown in Table 4. An average score was given to each country to rate its outcomes.

Table 4. Scoring Matrix – Local Content Outcomes

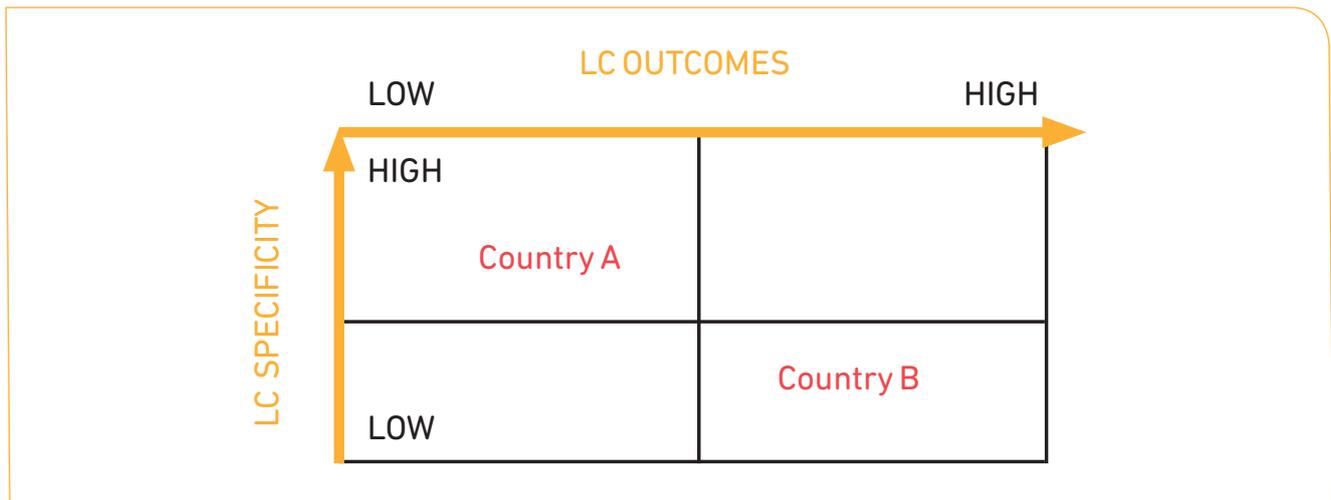
STRATEGY	DATA FROM OIL & GAS COMPANIES	CONTRACTS	SECONDARY SOURCES
LOCAL EMPLOYMENT (LE)	<ul style="list-style-type: none"> High (1.5) – % The company has at least 90% of national /local employees Medium (1) – The company has 80 to 90% of national employees Low (0.5) – The company has less than 80% of national employees 	<ul style="list-style-type: none"> High (1.5) –Contracts a) are linked to/reflect national legislation regarding LE; b) include mechanisms to measure LE; and c) include mechanisms to monitor and implement LE Medium (1) –Contracts are linked to/reflect national legislation regarding LE, and; a) include mechanisms to measure LE; or b) include mechanisms to monitor and implement LE Low (0.5) – Contracts are linked to/ reflect national legislation regarding LE 	<ul style="list-style-type: none"> High (1.5) – a) There is on-going debate about the importance of LE; b) there is evidence supporting data reported by the companies; and c) there are press releases/ articles about the companies' LE practices Medium (1) – a) There is on-going debate about the importance of LE; and b) there are press releases and articles about company practices Low (0.5) – There is some debate about the importance of LE
SKILLS DEVELOPMENT (SD)	<ul style="list-style-type: none"> High (1.5) – SD investment per employee is USD1,500 or higher Medium (1) – SD investment per employee is between USD500 and 1,500 Low (0.5) – SD investment per employee is USD500 or less 	<ul style="list-style-type: none"> High (1.5) – Contracts a) are linked to/reflect national legislation regarding SD; b) include mechanisms to measure, monitor and implement SD Medium (1) –Contracts are linked to/ reflect national legislation regarding SD and: a) includes mechanisms to measure SD; or b) include mechanisms to monitor and implement SD Low (0.5) – Contracts are linked to/reflect national legislation regarding SD 	<ul style="list-style-type: none"> High (1.5) –a) There is on-going debate about the importance of SD; b) there is evidence that support data reported by the company; c) there are press releases/articles about companies' SD practices Medium (1) –a) There is on-going debate about the importance of SD; and b) there are press releases/ articles about the oil companies SD practices Low (0.5) – There is some debate about the importance of skills development
NATIONAL INDUSTRY PARTICIPATION (NIP)	<ul style="list-style-type: none"> High (1.5) –Contract values awarded to local or national providers represent more than 90% Medium (1) –Contract values awarded to local or national providers are between 80 and 90% Low (0.5) – Contract values awarded to local or national providers are less than 80%. 	<ul style="list-style-type: none"> High (1.5) –Contracts a) are linked to/reflect national legislation regarding NIP; b) include mechanisms to measure NIP; and c) include mechanisms to monitor and implement NIP. Medium (1) –Contracts are linked to/reflect national legislation regarding NIP and: a) include mechanisms to measure NIP; or b) include mechanisms to monitor and implement NIP. Low (0.5) –Contracts are linked to/reflect national legislation regarding NIP. 	<ul style="list-style-type: none"> High (1.5) –a) There is on-going debate about the importance of NIP; b) there is evidence that support data reported by the company; and c) there are press releases/articles about the companies' NIP practices. Medium (1) –a) There is on-going debate about the importance of NIP; and b) there are press releases/articles about companies' NIP practices Low (0.5) –There is some debate about the importance of NIP.

Source: Own elaboration

⁴ Contracts have been used as a proxy to assess outcomes. It is assumed that the presence of local content provisions in contracts results in successful implementation of local content frameworks in practice.

Once we established the specificity and outcome scores, we proceeded to identify the connections between the specificity of local content frameworks and the outcomes they achieved. To do so, we classified local content in the seven analysed countries by positioning each country in a 2x2 diagram (*Figure 1*) in order to identify whether there are any correlations between the specificity of local content frameworks and their outcomes.

Figure 1. Diagram – Correlation LC Framework Specificity - Outcomes



Source: Own elaboration

Selecting Case Studies to Identify Additional Factors that Shape Local Content

Using the 2x2 diagram, two countries were selected which had implemented similar frameworks yet achieved different outcomes. The objective of this exercise was to identify and explain why similar frameworks might produce different outcomes, including the role of other factors. This analysis seeks to shed light on additional issues that policymakers need to take into account when designing and adopting a local content framework. In order to complement the analysis of case studies, semi-structured interviews were conducted with key actors in each of the two selected countries.



Photo 2: [Machinery on the Napo River](#)
Credit: Pato Chavez

REGIONAL EVIDENCE SYNTHESIS

Local content is a little-known concept among Latin American countries. Despite their long history as oil and gas producing countries, local content has been adopted in a heterogeneous manner. For example, countries such as Brazil (Tordo & Anouti, 2013) and Mexico (Musik Asali et al., 2015) have been the most eager to adopt local content and have defined and revisited these measures in order to adapt them to the changes and challenges of the oil and gas industry (Musik Asala et al., 2015; Kennedy, 2014; O'Connor & Viscindi, 2015; Place, 2015). Besides Mexico and Brazil, little is known about local content in the rest of the region. This section provides an analysis of current knowledge regarding this topic within Latin America and around the world.

Local Content in Latin America: What Do We Know?

Before and during the commodity price boom, Latin American countries adopted local content measures to enhance the cycle of high prices and create conditions for expanding the benefits of the oil and gas sector into other areas of the economy. A diverse range of local content frameworks were developed and implemented, each demonstrating different characteristics that reflected the opportunities and challenges faced by a particular country at that time. (Natural Resource Governance Institute, 2015). With the exception of Brazil and Mexico, Latin American countries have approached local content in a less specific manner than other countries in Africa or Europe. In Latin American countries, National Oil Companies (NOCs) have played a prominent role in the recent wave of state intervention in the oil and gas sector (Baker & McKenzie, 2012).

NOCs in Bolivia, Ecuador, Mexico and Venezuela are owned by the state whereas in Argentina, Colombia and Brazil NOCs function under a mixed scheme whereby the state partially owns the company and a percentage of the stocks are the property of private shareholders (see *Table 5* for more details). In all seven countries, NOCs are the main producer of oil and gas. For instance, in Venezuela, Bolivia and Mexico NOCs are in charge of all oil and gas production operations and they are able to sign special contracts with private companies (i.e. joint ventures). As for Mexico, the energy reform, which is on-going, seeks to attract private oil companies to the country. Ecuador's NOC is responsible for about 75% of oil production, with private companies in charge of the other 25%. Finally, Colombia has a more diversified oil production share between private companies and the NCO Ecopetrol, which, for its part, has joint operations with private companies.

Table 5. National Oil Companies in Latin America

Country	Name	Acronym	Private Share
Venezuela	Petróleos de Venezuela S.A.	PDVSA	None
Bolivia	Yacimientos Petrolíferos Fiscales Bolivianos	YPFB	None
Mexico	Petróleos Mexicanos	PEMEX	None
Ecuador	EP Petroecuador – Petroamazonas EP	None	None
Colombia	Empresa Colombiana de Petróleos S.A.	Ecopetrol	10%
Argentina	Yacimientos Petrolíferos Fiscales	YPF	49%
Brazil	Petróleo Brasileiro S.A.	Petrobras	44,30% ⁵

Source: National Oil Companies Statistics databases, 2015

NOCs also play a key role in the implementation of local content policies in Latin America. Measures to boost the participation of the national industry or local workers are included in the broader oil and gas legislation of each country.

In Argentina, the Hydrocarbons Law dictates that companies holding exploration permits or exploitation concessions must hire at least 75% of local employees (Baker & McKenzie, 2012). A similar provision can be found in the Ecuadorian Hydrocarbons Law which establishes that 90% of technical personnel and 100% of administrative personnel working in the oil and gas sector must be Ecuadorian (Grupo FARO, 2014). Along the same line, Bolivian legislation establishes that foreign personnel in oil and gas companies cannot exceed 15% of the total number of employees and the law includes explicit clauses about preferential treatment for Bolivian citizens during recruitment (Fundación Jubileo, 2014).

In Colombia, as in other countries in the region, the NOC Ecopetrol is the main actor in the sector. Despite its prominence, Ecopetrol is structured as a public stock company and is treated like any other economic agent and must compete with international oil companies on equal terms during licensing rounds. Local content measures in Colombia encourage contractors to favour local, regional or national suppliers and provide equal terms (Baker & McKenzie, 2012).

The promotion of national industry participation and knowledge transfer can also be found in the legislation of various Latin American countries. Venezuela's Hydrocarbons Law establishes that the Executive must adopt measures to promote the development of national capital through providing support to nationally based companies

⁵ The Government of Brazil has a majority of the voting capital (55.7%), so it can take decisions without agreement from other shareholders. In contrast, the government only owns 32.3% of the social capital which pays dividends to shareholders.

in the oil sector. Colombian authorities encourage contractors to grant a preferential right to local, regional and national suppliers of goods and services and provide equally competitive working conditions (Baker & McKenzie, 2012). Colombia's NOC-led approach to local content is less control oriented and emphasises competition and foreign investment.

In Argentina, Venezuela, Bolivia and Ecuador local content measures are scattered across sectorial laws and there is limited literature documenting the rationale and institutional framework behind these measures. In addition, there is currently no evidence on the impacts these frameworks have had on local employment, national industry participation or knowledge transfer over time.

Brazil has one of the most comprehensive local content legislations in the region and its experience is often used as an example by other countries wishing to adopt local content (Nordas et.al, 2003; Heum et.al., 2003; Tordo & Anouti, 2013). Within national local content policy, the NOC Petrobras is posited as a key institution for enhancing the competitive basis for local suppliers, generating income and creating job opportunities. Local content is a mandatory component of the bidding processes for oil and gas licenses and companies have to certify local content percentages in goods and services acquired in the country (Global Local Content Council, 2015). Local content legislation also encourages operators to invest 1% of gross revenue in research and development activities.

Institutionally, local content policies are embedded in programmes and through well-connected mechanisms to ensure compliance. The institutional design of Brazil's oil and gas sector includes the Ministry of Mines and Energy and the National Energy Policy Council which are responsible for formulating the national energy strategy and related policy. In 2003, the government launched the Programme for Mobilising the National Oil and Natural Gas Industry (PROMINP), sponsored by Petrobras and the Ministry of Mines and Energy. PROMINP intervenes in areas such as qualification, industrial policies and industry performance. Mechanisms to ensure compliance are also an important part of the Brazilian local content model. For example, if a concessionaire fails to meet its local content obligations by more than 65%, a National Petroleum Agency (Agência Nacional do Petróleo– ANP) fine is issued for 60% of the value of the non-achieved local content (Baker & McKenzie, 2012).

Brazil's local content policies flourished under a nationalistic industrial development plan and strong state control of the oil and gas industry. Under this scheme, Brazil managed to develop a robust national supply industry (Tordo & Anouti, 2013). As an example, the average local content commitments resulting from bidding rounds increased from 27% in 1999 to 84% in 2008 in the development phase. However, these policies have also translated into high bureaucracy costs and lower productivity. Without competition, Petrobras demonstrated inefficiencies that failed to generate the economic resources and technological know-how required to carry out exploration into ultra-deep waters. To respond to these challenges, the government decided to waive local content rules for offshore explorations with the aim of attracting foreign investment (Tordo & Anouti, 2013; Neuhaus, 2013).

Due to the country's importance in the region's oil and gas sector, Mexico is another case that is often observed when it comes to local content. In 1938, Mexico's industrial sector was nationalised and the NOCPMEX was established to run all the oil producing fields and was granted the monopoly in exploration, production, refining, and distribution of oil and gas in the country (Heum et al., 2003). The Mexican Hydrocarbons Law establishes the rules for including local content conditions in bidding processes and projects.

Local content measures in Mexico include the mandate for PEMEX to source capital goods locally. There is also a minimum local content standard in procurement procedures that seeks to support domestic small and medium businesses (Musik Asali et al., 2015). Overall, contractors must prove compliance with at least 40% of local content in their operations. Additionally, procurement proposals that have an inclusive approach towards the participation of Mexican workers, goods and services receive favourable treatment during the selection process (O'Connor & Viscindi, 2015). However, this closed system and the lack of competition for PEMEX have caused corruption and important technological and productive shortcomings. In 2014, Mexico adopted constitutional and legislative reforms to open up its energy industry to private investment for the first time in 75 years in order to attract international investment and increase oil and gas production (Regoli et al., 2014).



Photo 3: [Building an Oil Refinery in Manabi- Ecuador](#)

Credit: Santiago Armas for Office of the Presidency of Ecuador

What Don't We Know About Local Content in Latin America?

As Nordas (2003) observed, evidence from countries with local content policies is diverse and covers highly dissimilar contexts, thus drawing lessons between one country and another presents obvious challenges.

Some very relevant approaches exist regarding how to use the limited, and sometimes inaccessible, data for measuring and monitoring local content (see Tordo & Anouti, 2013). However, few attempts have been made to measure or analyse the outcomes of these frameworks or the factors that have influenced the successful (or unsuccessful) adoption of local content in these countries. Furthermore, there appears to be a lack of studies that try to explain whether different kinds of local content frameworks produce different outcomes. This is mainly due to the relatively recent emergence of these policies, as well as the difficulty associated with observing long-term effects in the oil and gas sector and in the broader economy. Notwithstanding, these types of observations could provide policymakers with useful insights about the choice of approaches to local content.

In the case of Latin America, data and experiences of local content from oil and gas producing countries is scattered and is not compiled into easily accessible formats that would facilitate making comparisons. Although many countries from the region have included local content provisions within their hydrocarbons frameworks (Annex 1), literature has focused on benchmark cases rather than providing analysis of examples from across

the region. Hence, a systematic analysis of local content represents an important first step to allow for further study on the outcomes and impacts of these policies. Furthermore, this study will contribute to existing literature by generating information on cases that are not usually analysed. This “mapping” will provide policymakers in Africa and Latin America with a tool to critically appraise the paths that other countries have taken and the main lessons emerging from these experiences. Finally, understanding why some countries from Latin America have not prioritised the adoption of local content policies will contribute to understanding around the relevance of this strategy to the oil and gas sector. The main lessons extracted from research are expected to be more relevant for countries in Latin America and Africa than existing evidence from benchmark cases such as Norway, Australia, Malaysia, Kazakhstan and Canada.

Local Content: Experiences from Around the World

Important efforts have been made to document cases of local content in countries around the world. Benchmark cases that have been studied in depth include Norway in Europe (Heum, 2008; Nordas et al., 2003), Angola, Ghana and Nigeria in Africa (Heum et al., 2003; Ovadia, 2014), Brazil, Mexico and Trinidad and Tobago in Latin America and the Caribbean (Veiga, 2013; Tordo & Anouti, 2013) and Malaysia and Indonesia in Southeast Asia.

Norway is considered an excellent example when it comes to local content. However, this experience should be considered as an inspiration and not as a concrete template to be followed (Aoun & Mathieu, 2015). Local content policy in Norway enabled the country to become internationally competitive by developing its industrial sector and workforce. It is important to note that by the time oil production started, Norway had already developed an industrialised economy and stable institutions capable of designing, adopting and enforcing local content policies which were easily transferable and produced benefits for other economic sectors (Heum, 2008). For other oil and gas producing countries, the scenario has been quite different in the sense that institutions and an enabling economy began to be developed after oil and gas reserves were discovered. Hence, the adoption of local content frameworks for other countries involves challenges that Norway never had to face. For this reason, experts claim that the experience in Norway is almost impossible to replicate (Heum et al., 2003).

African countries have also gone a long way towards adopting local content measures. Nevertheless, they have not yet managed to translate the benefits to their broader economies and continue to face the challenges of economic imbalances, corruption and capital flight (Balouga, 2012; Mwakali & Byaruhanga, 2011). Despite this, some evidence suggests that local content has had a positive impact on human capital development and sustainable business performance in countries like Nigeria (Unam, 2015). Nigeria is one of the few countries in Africa that has enacted special legislation for local content. Despite implementation challenges (Balouga, 2012), Nigeria provides an interesting example for other countries wishing to adopt local content. Ghana followed the Nigerian example by developing its Local Content and Local Participation Regulation in 2013. In Angola and Mozambique, local content legislation is embedded in oil and gas laws and both countries have adopted active policies to promote national development through this sector (Wilson & Fofaria, 2014; Easo & Wallace, 2014; Ovadia, 2014).

Indonesia is another country that seems to have achieved interesting outcomes regarding local employment and skills development. Nationals occupy at least 95% of jobs in the oil and gas sector and important investments are being made to develop their skills (Tordo & Anouti, 2013). Likewise, Malaysia demonstrates promising outcomes in relation to local employment and skills development. Its local content strategy focused on generating linkages through its manufacturing sector.

Africa and Latin America are regions at different stages of their extractive cycle and so it will be interesting to see what Africa can learn from Latin American experiences regarding local content, especially since their development contexts and challenges are more closely related than with countries of the Global North.

LOCAL CONTENT FRAMEWORKS: CASE STUDIES FROM LATIN AMERICA

This section provides a synthesis of the review of local content frameworks of major oil and gas producing countries in Latin America and their outcomes. The countries selected for this analysis are Argentina, Bolivia, Brazil, Colombia, Ecuador, Mexico and Venezuela. Mexico and Brazil are two cases from Latin America that are frequently studied due to the specific policies they have implemented to promote local content outcomes, in particular relating to national industry participation. Although Argentina, Bolivia, Colombia, Ecuador and Venezuela have not developed specific local content frameworks, they have established provisions within national law to promote local employment, national industry participation and skills development within the oil and gas sector.

As described in the Methods section, the research process was developed through three stages in order to determine the main factors that influence local content outcomes. First, a mapping exercise was conducted to gather information on the main local content provisions that the selected Latin American countries have established within national law (see Annex 1). National archives from each country were reviewed to collect information on local content provisions within policies, legislation and contracts. A lack of information (especially relating to oil and gas contracts) and the different timing of legal frameworks constituted the main challenges when trying to make comparisons across countries.

In order to categorise the countries, the specificity and outcomes of their local content frameworks were scored based on the criteria set out in [Tables 3](#) and [4](#). This information was then interpreted to establish a connection between specificity and outcomes. Subsequently, two case studies were selected in order to identify additional factors that might shape the outcomes of local content.

Local Content Frameworks Specificity

Using the information compiled in Annex 1, local content frameworks from seven Latin American countries were evaluated in terms of their specificity, understood as: a) The degree to which local content is embedded in general or sector specific policies, legislation or contract clauses; and b) The extent to which frameworks include measurement mechanisms, c) The extent to which frameworks include monitoring, and/or implementation mechanisms.

Countries were scored between “-” (lack of information), 0.5 (Low), 1 (Medium), and 1.5 (High) based on the criteria presented in [Table 3](#). [Table 6](#) below shows the scores for each country.

Table 6. Local Content Frameworks - Specificity Scoring

Strategy	Criteria	ECU	COL	BRA	ARG	BOL	VEN	MEX
Local Employment	Presence in Oil and Gas Legal Frameworks	1	1	0.5	1	1	0.5	0.5
	Measurement	1.5	1	0.5	1	1	1	1
	Monitoring and Implementation Mechanisms	0.5	0.5	0.5	0.5	0.5	1.5	0.5
Skills Development	Presence in Oil and Gas Legal Frameworks	1	1	0.5	-	0.5	0.5	0.5
	Measurement	0.5	1	1	-	0.5	-	0.5
	Monitoring and Implementation Mechanisms	0.5	1	1	-	0.5	0.5	0.5
National Industry Participation	Presence in Oil and Gas Legal Frameworks	1	0.5	1.5	0.5	0.5	0.5	1.5
	Measurement	0.5	0.5	1.5	0.5	0.5	0.5	1.5
	Monitoring and Implementation Mechanisms	0.5	0.5	1.5	0.5	0.5	0.5	1.5
Local Employment		1.00	0.83	0.50	0.83	0.83	1.00	0.67
Skills Development		0.67	1.00	0.83	0.00	0.50	0.33	0.50
National Industry Participation		0.67	0.50	1.50	0.50	0.50	0.50	1.50
Total Average		0.78	0.78	0.94	0.44	0.61	0.61	0.89

Source: Own elaboration

Since our research focuses on establishing a relationship between the specificity of local content frameworks and their outcomes, we do not explore why some Latin American countries have adopted more elaborate frameworks than others. However, it should be highlighted that different factors can influence the design of local content policy such as the size of the economy, the industrial base, oil and gas reserves, state capacity to develop and monitor local content policy, the strength of the NOC, the period when the country began producing oil and gas and bargaining power with international companies, among others.

As *Table 6* shows, Brazil and Mexico have developed more specific local content provisions in national law, policy and contracts than other countries in the region. In contrast, Argentina, Venezuela and Bolivia demonstrate the lowest specificity scores, due, in particular, to a lack of local content provisions in their legal frameworks and the poor quality of available information. Ecuador and Colombia obtained the same score showing that both countries have similar frameworks in terms of specificity. However, this does not mean that their frameworks prioritise the same strategies or adopt the same approach towards local content.

In Brazil (specificity score – 0.94), central government makes all decisions related to the oil and gas sector. Local content strategies have prioritised national industry participation. The National Petroleum Agency (ANP) was created under the Hydrocarbons Law to implement, regulate, supervise and measure local content policies and practices. This entity provides a detailed framework on how local content should be managed and measured in the country, with an emphasis on maximising participation of national industry in the oil and gas sector. Brazil’s NOC Petrobras is managed by the state but is partly owned by private shareholders. Petrobras is one of the main mechanisms through which local content is promoted. Finally, Brazil includes an entire section devoted to local content in its exploitation and exploration contracts, including local content quotas applicable to procurement processes.

Mexico (specificity score - 0.89) is another country with highly developed local content provisions. One of its national goals is to encourage local content by strengthening national industries and suppliers. Mexico has a strong national oil company, PEMEX that has controlled the sector for several decades. Within the company,

an active labour union plays an important role in recruitment thereby contributing to local employment within the oil and gas sector. Mexico's Hydrocarbons Law encourages local content through specific provisions with the main aim of strengthening national hydrocarbon sector providers and industries. For example, the law sets criteria for measuring local content in procurement and establishes local content goals forbidding processes, as well as fines and penalties for non-compliance. Finally, Mexico has established a public trust fund to promote the development of national suppliers.

In Ecuador (specificity score - 0.78), the Hydrocarbons Law sets out provisions regarding local employment quotas. In terms of skills development, the Hydrocarbons Law stipulates that oil and gas companies should implement capacity building programmes and internships. Related measures are also present in general laws. National industry participation is defined in the Hydrocarbons Law as the preference for national companies in oil and gas sector related activities and includes specific measures that favour national companies over internationals. Overall, the framework is relatively detailed, however it demonstrates weaknesses in terms of monitoring and evaluation mechanisms.

Local content provisions in Colombia (specificity score - 0.78) are scattered across various laws. Local employment is promoted through general and specific laws which encourage preference for national employees. At the same time, equal competition is encouraged between companies as a means of promoting innovation and growth. As such there are no laws (general or sector specific) that favour national companies. Skills development provisions, on the other hand, are more specific and encourage companies to develop training programmes and contribute to the National Innovation Fund. Skills development is a national priority therefore contracts in the gas and oil sector contain more specific measures in relation to this area.

In Bolivia (specificity score - 0.61) the government has a strong influence over the oil and gas sector led mainly by the NOCYPFB. Local governments have barely any influence in decisions regarding the sector, as is the case in many other countries in the region. Local content provisions are primarily contained in the Hydrocarbons Law and are reflected in contracts drawn between the NOC and private companies, which must include a local content plan. The main priorities of the local content framework in Bolivia are local employment and skills development among national workers. More recently, the Bolivian government has begun to promote national industry participation.

Venezuela (specificity score - 0.61) has a strong NOC, PDVSA, which maintains complete control of the sector. Sector specific laws contain very few provisions on local content. Provisions found in the Hydrocarbon Law are broad and scattered and mainly focus on local employment. The General Labour Law encourages the hiring of nationals and sets minimum quotas for Venezuelan workers, as well as fines if they are not met.

Argentina (specificity score 0.44) demonstrates the lowest score among the countries studied. The National Constitution and the Hydrocarbons Law confer the ownership of natural resources (oil and gas) to the country's provinces. At the national level, local content policies are basic and lack specific measures to regulate implementation. National laws contain provisions regarding the percentage of local employees that must be hired in oil and gas operations. At the provincial level, four of the ten oil-producing provinces have a Hydrocarbons Law, some of which include basic provisions for local content.

Local Content Outcomes

Once the legal frameworks were scored and categorised based on their specificity, a complementary analysis was developed to identify how oil and gas producing countries report local content outcomes. Since comparable data on local content is not available at the national level from official sources in every country, information was also gathered from voluntary reports published by oil and gas companies in each country. Local content outcome indicators are based on measurements obtained from the literature review and are presented in Annex 2.

Based on an analysis of these indicators, it can be concluded that due to the size of their oil and gas sectors, Mexico, Venezuela and Brazil have the largest number of workers in this sector. It is also worth highlighting that in every country for which employment information is available, the percentage of local employees working in the oil and gas sector is higher than 90%. Regarding skills development, Colombia and Brazil appear to demonstrate higher investments in human capital with both Ecopetrol and Petrobras spending more than USD1,500 per employee per year. Only minimal information was available on national industry participation, largely due to the fact that in many countries companies do not publish information about the value of contracts awarded to providers. In fact, information on this indicator was only available for Colombia, Ecuador and Brazil.

Since it is possible that companies implement local content standards without reporting on them, a complementary analysis was conducted using secondary sources in order to gain a better sense of the current situation. This analysis focused on measuring the presence of the three strategies - national industry participation, skills development and local employment -in national debate, understood for this study as information available in the media. Finally, the presence of local content targets in oil and gas contracts was also analysed as an outcome indicator.

Table 7 presents the outcomes scores based on the criteria described in Table 4. Brazil, Mexico and Colombia appear to lead the way, however it is important to note that the persistent lack of available data in the case of Argentina didn't allowed us to include this country as part of the outcome analysis and therefore of the analysis of the relation between frameworks and outcomes.

Table 7. Local Content Frameworks - Outcomes Scoring

Dimension	Criteria	ECU	COL	BRA	ARG	BOL	VEN	MEX
Local Employment	Data from oil and gas companies	1.5	1.5	1.5	-	-	1.5	1.5
	Contracts	1	0.5	0.5	0.5	1	-	0.5
	Secondary sources	1	0.5	1	1	1	1	1.5
Skills Development	Data from oil and gas companies	0.5	1.5	1.5	-	-	0.5	1
	Contracts	0.5	1	1.5	-	1	0	1.5
	Secondary sources	0.5	1	1	0.5	0.5	0.5	0.5
National Industry Participation	Data from oil and gas companies	0.5	1.5	0.5	-	-	-	-
	Contracts	0.5	0.5	1.5	-	0.5	-	1
	Secondary sources	0.5	1	1.5	0.5	0.5	0.5	1.5
	Local Employment	1.17	0.83	1.00	-	0.67	0.83	1.17
	Skills Development	0.50	1.17	1.33	-	0.50	0.33	1.00
	National Industry Participation	0.50	1.00	1.17	-	0.33	0.17	0.83
	Total average	0.72	1.00	1.17	0.28	0.50	0.44	1.00

Source: Own elaboration



Photo 4: Pipes for Oil Pipeline in Ecuador
Credit: Pato Chavez

As *Table 7* shows, Brazil received the highest score due to its national personnel rates, investment in skills development and on-going debate around the role of the oil and gas industry as a mechanism for boosting national industries. The score reflects the efforts made by the government to strengthen its industrial sector. The score obtained by Colombia (*Table 7*) shows positive outcomes relating to local employment practices, investment in human capital and procurement practices.

Mexico, on the other hand, reports good outcomes pertaining to all three categories. It should be noted that there is no information available on the outcomes of PEMEX's procurement practices, hence the total average for Mexico is lower than for Colombia and Brazil. By consulting secondary sources, however, it was possible to identify that PEMEX's procurement practices are entirely focused on fostering national industry participation by strengthening the capacity of national providers. Hence, it can be assumed that Mexico's outcomes score could be higher.

Finally, Ecuador reports high outcomes regarding its national employment practices. In general terms, there appears to be a lack of interest in Ecuador towards local content and its potential benefits. Furthermore, investments by Petroecuador and Petroamazonas (Ecuador's two NOCs) in skills development are minimal.

Correlation Between Local Content Framework Specificity and Outcomes

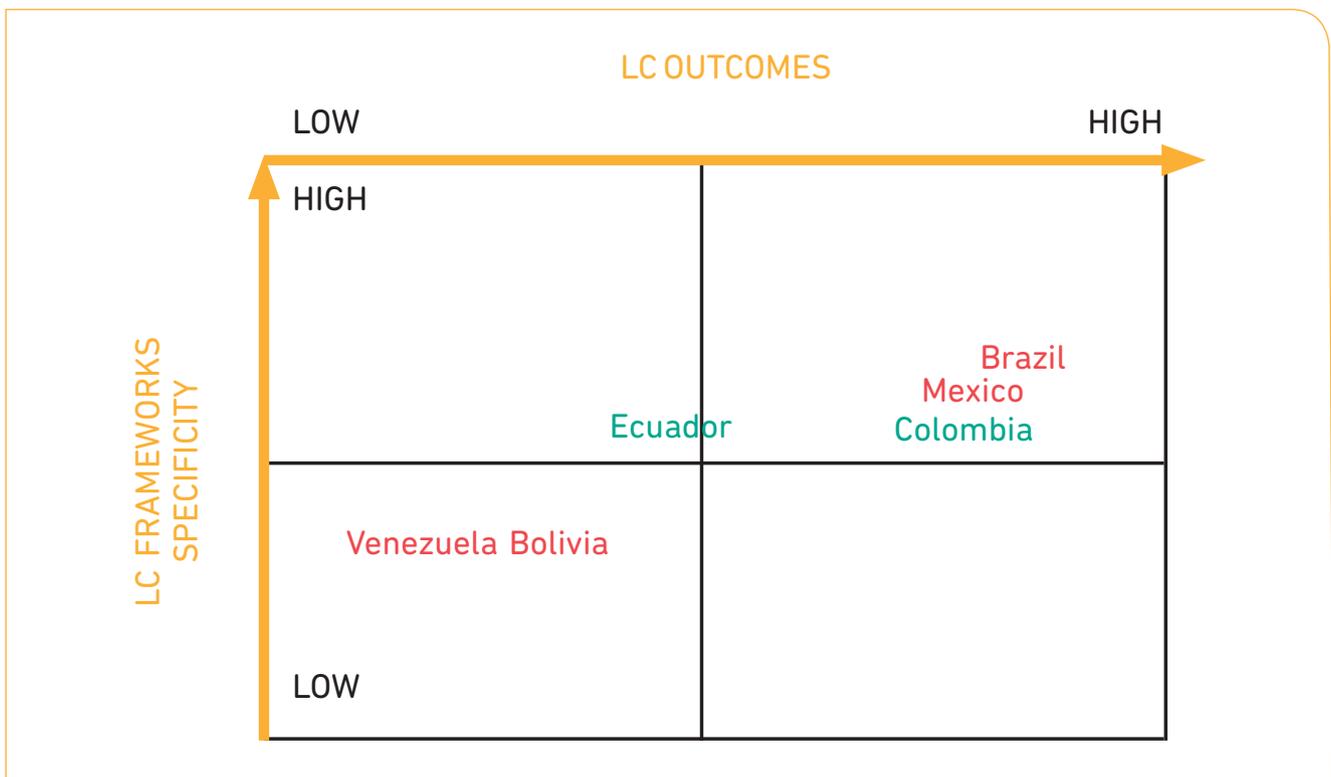
Using the specificity and outcomes scores, a 2x2 diagram was developed in order to visualise the relationship between these variables in every case study and to compare between countries, and is shown in *Figure 2* below.

The diagram indicates two clearly identifiable groups. Bolivia and Venezuela are located in the section that corresponds to a low level of specificity and a low level of outcomes. On the other hand, Brazil, Colombia and

Mexico are located in the section that corresponds to a high level of specificity and a high level of outcomes. According to this behaviour, countries with more specific local content frameworks achieve better outcomes than countries with more general provisions.

However, a third group of countries shows a different relationship. Ecuador and Colombia scored similarly in terms of the specificity of their local content frameworks yet they scored differently for outcomes. Colombia achieved one of the best scores for local content outcomes while Ecuador scored closer to the general average. This difference provides an interesting opportunity to identify additional factors that can influence the performance of local content outcomes. Although both countries demonstrate similar economic performance, the economic models and oil and gas management policies they implement possess different characteristics. As such, further examination of these case studies can shed light on the additional factors that policy makers should take into account when designing local content policy.

Figure 2. Relation Specificity – Outcomes



Source: Own elaboration

Case Studies

Ecuador and Colombia were selected for further analysis in order to identify the factors that account for different local content outcomes in two countries with fairly similar frameworks in terms of specificity. In order to do so, key actors and institutions from both countries were mapped and interviews and meetings were conducted in the capital cities of Quito and Bogota with representatives from government ministries, special government agencies and secretariats, NOCs, private companies, academia and other experts.

The mapping exercise was conducted to ensure that interviewees were either decision-makers or actors related to relevant decision-making process at present or in the past. A review of complementary literature and secondary sources was also conducted to obtain a better understanding of the local content context in both countries. The following section presents the main findings from these exercises.

Colombia

Colombia has created business friendly conditions for companies to operate and invest in the oil and gas sector, which, according to the majority of interviewees, is one of the key factors that has influenced local content outcomes. Both the Colombian government and the general public consider private investment as a key driver for national development.

According to many interviewees, Colombia is an interesting case since the country has a strong NOC, Ecopetrol, which has balanced its presence with the creation of a competitive business environment for private and international companies.

Colombia ranks 34 in the World Bank's Doing Business Index (World Bank, 2014), whereas Ecuador stands in position 115. In this regard, interviewees were clear when they stated that one of the main changes Colombia faced was a shift towards competitiveness instead of protectionism. In this scenario, the government played a key role in creating an adequate environment for private companies to operate.

This approach can be observed in the management of Ecopetrol, which, according to its Directors, has to compete in the National Hydrocarbons Company's (Agencia Nacional de Hidrocarburos – ANH) licensing rounds on equal terms with other oil and gas companies wishing to engage in extractive activities in Colombia. Thus, Ecopetrol has become a business-oriented company with a legal framework to match. The absence of favoritism towards Ecopetrol is strong evidence of the Colombian government's commitment to promoting equality between public and private sectors, thereby encouraging foreign investment.

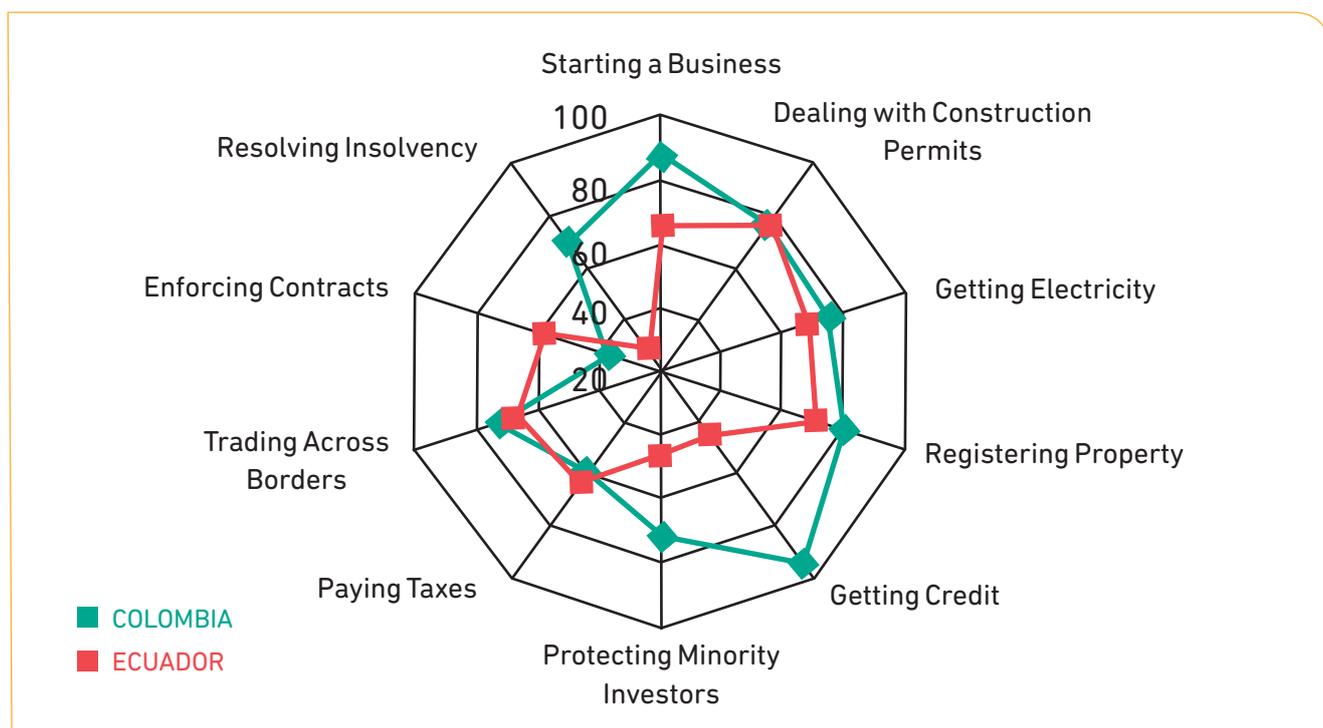
Along the same line, there is a strong belief that the state can and should accompany private companies in their endeavours. In this sense, divisions have been set up within various public institutions that are dedicated entirely to dealing with matters related to the oil and gas sector, such as in the Office of the General Procurator of the Nation where the role of this division is two-fold. It not only ensures that private companies comply with Colombian laws, it also guarantees that the state respects the rights of companies so that they can operate in viable conditions. One public official interviewed for this study mentioned that the state and the private sector share the responsibility to generate and enhance a culture of corporate responsibility.

The fiscal regime can also be considered friendly towards private companies. Royalties from the hydrocarbons sector are paid based on a scale between 8% and 25% depending on production levels. Other taxes include a periodic payment to be made by the contractors for the exclusive right to use the subsoil within the allocated area. The rate of this payment varies depending on the size of the concession and the stage of the project. Value Added Tax (VAT), customs tax and income tax also form part of the fiscal regime applied to the gas and oil sector, with income tax representing 25% and VAT 16%. Customs tax varies depending on the product. Finally, companies are expected to invest a percentage of profits in technology transfer, however this is not a fixed amount and can often be very small relative to the earnings of the company.

Colombian law also makes provisions for a large number of tax reductions for private companies operating within the hydrocarbons sector such as VAT and customs tax deductions related to the importation of extraction machinery. In addition, companies may be exempt from paying certain taxes when they invest in the hydrocarbons sector.

Given the conditions described above, the fiscal regime in Colombia is considered one of the key factors that has created an enabling environment for the expansion and consolidation of businesses in the oil and gas sector. The World Bank Doing Business Index (World Bank, 2014) scores Colombia 86/100 in terms of its openness to new businesses and 95/100 regarding access to credit. The combination of these two indicators shows that the economic environment in Colombia is positive for starting-up and expanding a business. Figure 3 below shows how Colombia and Ecuador rank in relation to these and other key indicators.

Figure 3. Relation Specificity – Outcomes



Source: World Bank, 2014

In order of priority, local content in Colombia is focused on skills development, local employment and national industry participation (see [Table 6](#)). The outcomes of its local content policies scored among the highest in the region. Colombia’s approach towards skills development is closely related to strengthening local suppliers within the oil and gas sector. The purpose for developing its local content framework was to encourage participation and competitiveness among oil and gas companies and suppliers along the value chain. Ecopetrol has invested in developing a strong capacity building programme for suppliers, even though it is not legally required.

Ecuador

During interviews and meetings, key actors from Ecuador’s oil and gas sector expressed a common sentiment, that even though national legislation establishes fairly specific measures, local content is not a priority hence outcomes regarding local employment, skills development and national industry participation are poor. Different actors, especially from the public sector, affirmed that government efforts are focused on increasing oil production and obtaining as much revenue as possible. This is another reason why local content outcomes are weak,

especially in terms of national industry participation. On the other hand, private actors pointed to the lack of institutions and mechanisms for monitoring the enforcement of local content provisions contained within legal frameworks, therefore some companies do not comply.

Managers and officials from Ecuador's two NOCs stated that outcomes regarding local employment are promising because both companies employ high rates of national workers. According to them, two factors explain these outcomes. First the requirement to comply with the Hydrocarbons Law and second, the fact that the cost of wages for Ecuadorian workers is lower than for foreigners. This second factor was confirmed by representatives of the private sector who mentioned that the cost of an "expat" is much higher than that of an Ecuadorian worker, even if the company has to invest in training the Ecuadorian in the beginning.

Regarding skills development, both public and private sector representatives agree that although recent outcomes may look promising, it is necessary to take several factors into account. First, although companies make important investments in human capital and capacity building, the main aim is to obtain higher profits through more efficient staff. Hence, capacity building programmes implemented by oil and gas companies focus on topics such as security, occupational health, equipment management and risk reduction, rather than technical and managerial issues. Likewise, representatives from both sectors highlighted the general lack of capacity among Ecuadorians, especially at the technical level. They agree that despite being an oil producing country, there are insufficient university and vocational courses geared towards training technicians for the oil sector.

Regarding national industry participation, interviewees tended to agree that Ecuador lacks national industries with the capacity to meet the needs of the oil and gas sector. Furthermore, most national companies, especially small businesses, fail to meet the standards set by oil and gas companies. Hence, IOCs have to import materials or hire international companies.

Weak relations between the private sector and the state were also cited by representatives from the private sector. During interviews, there was a consensus around the lack of state incentives for companies to invest in Ecuador, especially in the oil and gas sector. Private companies feel that their investments have declined in recent years due to a fragile business environment. According to them, the Government of Ecuador has established many protectionist measures for national companies which have reduced competitiveness and increased legal uncertainty.

The fiscal regime for oil and gas companies has contained strict rules since 2010 when a kind of nationalisation process of the sector began. Private companies were forced to renegotiate and adopt a service contract; a contract model that also applies to new companies interested in investing in oil and gas projects. Moreover, Ecuadorian NOCs and international NOCs (PDVSA, YPF etc.) are given preference over private companies during bidding processes and taxes for private oil and gas companies are among the highest in the region.

According to experts, these characteristics of Ecuador's business environment actually discourage companies from investing. What is more, these measures weaken competitiveness and national industries deteriorate as a result.

Finally, many actors from the public and private sectors recognised that of the three dimensions to local content, local employment is the most important for Ecuadorian policy makers. Even though national policy aims to promote diversification of the productive matrix, this does not specifically focus on the oil and gas sectors. As a consequence, although skills development is promoted to a certain extent, national companies are unable to compete with international ones as suppliers to the oil and gas sector.

Additional Factors

Based on a comparative analysis between both countries, two additional factors can be identified as shaping the outcomes of local content frameworks.

Business Environment

A business enabling environment refers to the conditions under which businesses and transactions take place in a country. This includes such issues as how easy it is for private enterprises to engage in business with the state, whether there are enough incentives for companies to be competitive and productive, investment conditions and whether there is any public-private collaboration. Likewise, the fiscal regime is an important factor since it can shape and influence incentives for private sector investment and can determine the ability of local enterprises to participate and compete in the oil and gas value chain.

According to interviewees, a business friendly environment is fundamental for oil and gas companies to be able to operate. Furthermore, if companies are guaranteed a competitive and non-protectionist environment, they are more likely to foster local content. For example, Colombia has developed a business friendly environment that has encouraged private sector investment, despite the strong presence of its NOC.

There is an important difference between Ecuador and Colombia in respect of their business environments. An indicator that is often used to measure this concept is the “doing business ranking” developed by the World Bank which measures variable such as cost, time, payments and documents required to start or engage in business, legal rights, fiscal security, regulations, taxes, credits and contracts, among others.

A total of 189 countries were included in the 2014 World Bank ranking. Of the seven countries included in this study, Colombia (34/189) and Mexico (39/189) reported the highest scores. The second group of countries with similar scores consists of Ecuador (115/189), Brazil (120/189) and Argentina (124/189). Finally, Bolivia (157/189) and Venezuela (182/189) scored the lowest.

These results lead us to conclude that countries such as Colombia and Mexico which present high scores regarding local content outcomes also demonstrate a good business enabling environment. In the same way, countries that report low scores on local content outcomes such as Venezuela and Bolivia, also report badly in terms of the quality of their business enabling environments. This evidence supports the conclusion that there is a relationship between the business environment of any given country and the outcomes this country achieves in terms of local content.

Local Content Strategies

The vision a country has of its oil and gas sector can at once determine the local content strategies it adopts and at the same time influence the outcomes of these policies. Indeed, when countries prioritise just one kind of local content strategy, this may be to the detriment of other dimensions. This may depend on whether the country adopts a short or long-term vision. For example, when countries want to achieve local content outcomes in the short-term, they might prioritise the generation of local employment and require companies to employ a minimum quota of local labour. On the other hand, when countries want to achieve long-term outcomes they might focus on skills development and the participation of their national industry.

From our analysis of local content frameworks in seven Latin American countries, it is possible to determine which countries have prioritised which strategies. This is shown in *Figure 4* below which has been elaborated based on the average specificity scores for each category ([Table 6](#)).

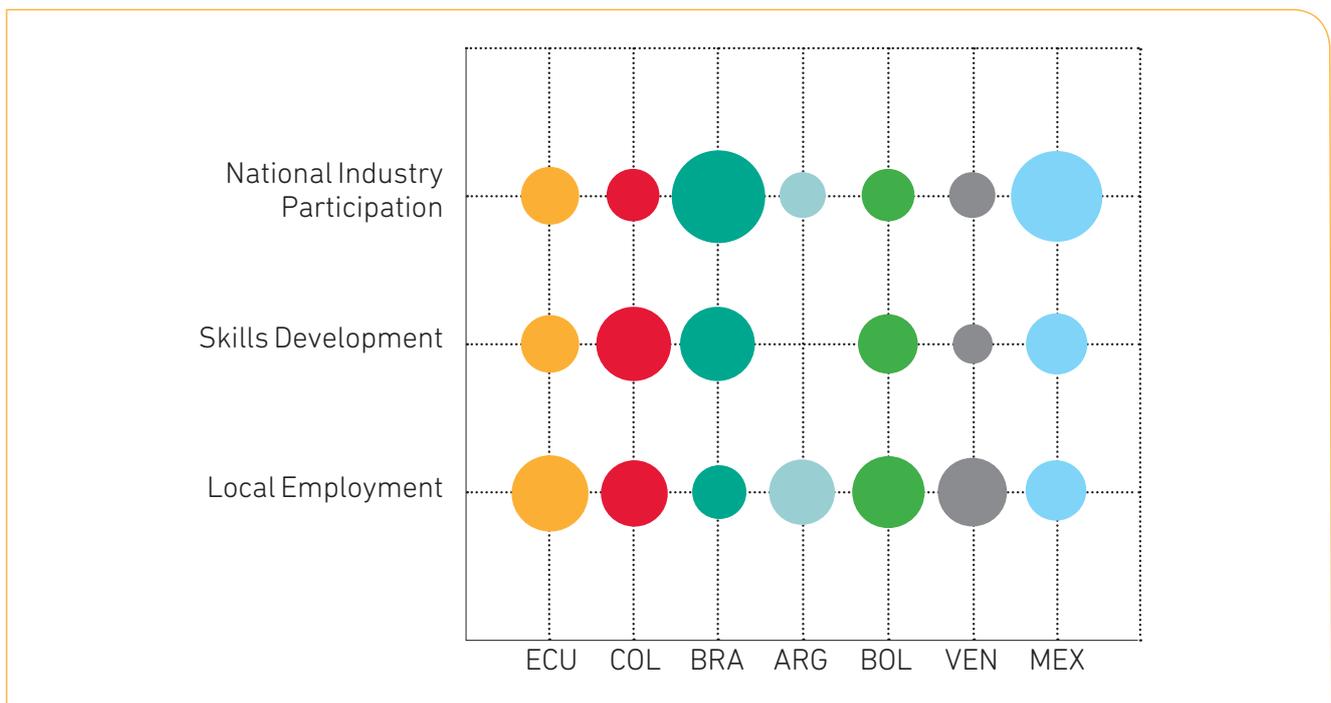
Figure 4 shows that the majority of countries prioritise local employment, which is unsurprising since local employment quotas are easily adopted in the short-term. However, without a strong skills development framework and an industry diversification plan, this scenario faces the risk of enhancing employment dependency on extractive industries. Ecuador and Bolivia have established the most provisions regarding local employment within their frameworks. However, neither country has developed specific provisions regarding national industry participation and skills development.

Skills development is the category with the lowest average score in the region, although most of the countries have made some provisions to enhance technology transfer and capacity building. Colombia and Brazil scored highest in this category mainly due to the provisions they have set to promote capacity building by oil and gas companies and the measurement mechanisms they have established to verify compliance.

Brazil and Mexico show a stronger focus on national industry participation, followed by skills development. Both countries have established mechanisms such as local content minimums for bidding processes and capacity building programmes for suppliers. This approach requires a long-term vision and demands higher institutional capacity to generate favourable conditions that can strengthen the participation of national industry in the oil and gas sector. As discussed previously, Brazil and Mexico also show higher outcomes scores than other countries in the region. The case of Colombia is interesting since its main focus is on skills development. However, this concept is not limited to enhancing human capacity since it also includes capacity building for local suppliers.

Bolivia and Venezuela focus less on national industry participation and skills development and there is little evidence of a long-term vision to diversify the production matrix. These countries also attained the lowest scores when it comes to outcomes.

Figure 4. Local Content Strategies in Latin America



Source: World Bank, 2014

In general terms, there is a clear trend amongst certain countries from the region (Mexico, Brazil and Colombia) to focus local content strategies on national industry participation and skills development. These countries also registered the highest scores in terms of local content outcomes. On the other hand, countries such as Ecuador, Bolivia and Venezuela prioritise local employment and two of these countries presented the lowest outcomes scores. In this sense, the kinds of strategies prioritised in local content frameworks appear to represent an additional factor that might influence outcomes.

DISCUSSION OF FINDINGS

Local content in Latin American oil and gas producing countries has been adopted differently than in other regions of the world. With the exception of Brazil and Mexico, local content has not been widely institutionalised among other oil and gas producing countries in the region. Even though local content provisions are present in every country's legal framework, it is exceptional to find an explicit local content strategy.

Overall, local content provisions in Latin America are scattered across policy and legislative tools and include local employment, skills development and the promotion of national industry participation. Our analysis shows that promoting local employment is the most popular strategy in the region. This can be explained by several factors: benefits can be seen relatively quickly, limited investment is required (in comparison to other strategies), and local employment might help alleviate the social and economic pressure that extractive projects can cause in communities living close to operation areas. As for companies, hiring national/local employees can actually reduce costs and have a positive effect on their corporate image. On the other hand, the promotion of local employment can generate negative outcomes since it relies on the viability of extractive projects and can, in the long run, heighten a country's or a region's dependence on the oil and gas sector.

National industry participation, on the other hand, seems to represent a more promising local content strategy in terms of its correlation with positive outcomes. Yet only Mexico, Brazil and to some extent Colombia, showed strength in this area. This strategy seems to require a stronger and well-developed industrial base that can serve as a catalyst to ease the participation of national industries into the oil and gas value chain. For many countries in the region, this remains a challenge since national/local companies lack the capacities required to be competitive or to provide the highly specialised goods that the extractive sector often needs.

It was observed that countries that place a stronger emphasis on skills development and national industry participation tend to achieve better local content outcomes. The cases of Brazil, Mexico and Colombia illustrate this. This can be explained with a long-term logic, meaning that national industry participation goals have to be included within a long-term vision for development of the oil and gas sector and, consequently, these goals demand more comprehensive policies in order to be achievable. Our findings show that a long-term vision towards the diversification of a country's productive matrix has more potential to contribute to local content outcomes as well as stronger and more flexible extractive sectors in general. However, it must be highlighted that these countries, especially Brazil and Mexico, benefit from a strong national industry with the capacity to compete with and coexist alongside international companies. In this sense, countries interested in promoting local content through national industry participation must include comprehensive plans for developing their national industry.

Strong National Oil Companies were identified in all seven countries included in this study where they play an important role in shaping the sector's policies and practices. However, the importance of the NOCs does not necessarily translate into positive local content outcomes. In Latin America, it is possible to find strong NOCs such as PEMEX (Mexico) and Petrobras (Brazil) that have led the implementation of local content policies while their counterparts in other countries, such as Petroamazonas (Ecuador) and PDVSA (Venezuela), play a weaker role. The role of NOCs merits further investigation since it will help policy makers understand how to enhance local content outcomes in their countries.

This study was developed on the premise that more specific local content frameworks lead to better outcomes, and the evidence confirms this to be the case. This means that countries wishing to adopt local content will do well by developing more specific frameworks as a first step. It is also important to highlight the fact that

the specific strategies used to promote local content also make a difference to outcomes. Evidence from Latin America shows that countries with strategies focused on national industry participation embedded in a long-term vision are more likely to achieve positive outcomes.

Focusing on the cases of Ecuador and Colombia, we were able to identify additional factors that can shape the outcomes of local content. Both countries had similar frameworks in terms of specificity, however their outcomes were different. What explained this difference were the conditions under which local content took place, namely the existence of a business friendly environment and a collaborative relationship between the state and the private sector in Colombia

Despite being a public company (with 10% private shares), Ecopetrol management resembles the operations of a private business and it is precisely this aspect that partly accounts for the company's success. Due to Colombian legislation, Ecopetrol has to compete in the same conditions with other extractive companies. This has resulted in the NOC making constant improvements to its operations and presenting competitive bids for exploration and extraction of natural resources. Ecopetrol has also developed a series of programmes to strengthen the capacities of local suppliers and enhance skills among the local workforce. While maintaining its role as regulator of the extractive sector, the state has also positioned itself as a partner for private companies thereby ensuring the fulfilment of their rights and creating incentives for investment. Our research shows that both public and private companies in Colombia attribute the success of their local content strategies to the existence of an enabling business environment.

Ecuador, on the other hand, runs a more protectionist system in which the NOCs play a central role. Since the NOCs control approximately 75% of production and 100% of exports, there are limited incentives for either company to develop the capacities of local suppliers or to improve the overall conditions under which they operates. In addition, the challenging business environment in Ecuador was reported as one of the main reasons why private oil companies are not in a position to favour local suppliers. Private companies confirmed that despite the existence of preferential measures in favour of national suppliers, heavy taxation and import barriers made the offers of national bidders highly uncompetitive. Limited support from the government on this matter appeared to be an additional barrier to private companies adopting and implementing local content strategies.

CONCLUSIONS AND POLICY IMPLICATIONS

The main purpose of this research is to generate relevant information for decision-makers in Latin America and Africa by improving understanding around local content and its implications at the policy level. Even though local content strategies in countries worldwide have been well documented, in general existing literature overlooks Latin America. In this sense, this research contributes important insights to the current debate and lays the foundations for further analysis into additional aspects that might influence local content outcomes. Furthermore, the regional approach developed in this study sets the ground for future comparative studies into the approaches adopted by Latin American countries with regards to local content. It is expected that the findings will be particularly valuable for policy makers in Africa where development contexts more closely reflect scenarios in Latin American than other countries typically covered in the literature.

Policy implications for Latin American oil and gas producing countries are clear. First, policy makers need to decide whether local content is an option they want to pursue in the oil and gas sector. To make this decision, they must be aware of the potential benefits that local content policy can generate as well as potential challenges. Local content frameworks in Latin America demonstrate many weaknesses that can be improved if the political will exists. Specifically, there is an opportunity for policy makers from Ecuador to introduce local content into debates around the need to diversify the productive matrix as a national priority. The findings of this research go some way to demonstrating how local content can act as a mechanism to contribute to this goal and shed light on the factors that should be considered in doing so, such as strengthening the role of the NOC in implementing local content, improving the business environment and investing in skills development.

A secondary aim to this research was to highlight the value of local content as a development strategy while at the same time identifying its limitations and other nuances. Our analysis demonstrates that well-designed, specific frameworks form the foundations of a successful local content strategy. In order for these strategies to achieve positive outcomes, policy makers must develop a long-term vision that goes beyond the immediate extraction of natural resources to include more comprehensive measures aimed at strengthening the national industry. Resource rich countries should bear in mind that the generation of local content is not a goal in itself, rather it should be understood as a strategy for achieving sustainable development even after mineral resources have depleted.

For many countries in Latin America and Africa, this realisation implies that local content should prioritise the development of a strong and dynamic industrial sector that is able to supply the extractive sector and also generate positive spill-over effects into other sectors of the economy. Local content can represent an effective tool for achieving this, however additional factors, such as fostering an enabling and collaborative business environment to promote competitiveness, and long-term vision are also central.

REFERENCES

- ▶ Adefulu, A. 2010. [Nigerian Local Content](#). Odujinrin & Adefulu, Lagos, Abuja, Port-Harcourt.
- ▶ African Development Bank. 2014. *Flagship Report Paper Series. Paper 6: [Creating Local Content for Human Development in Africa's New Natural Resource-rich Countries](#)*. African Development Bank Group and the Bill and Melinda Gates Foundation, online publication.
- ▶ Amoako, J., Aubynn, T. and Atta-Quayson, A. 2015. [Local Content and Value Addition in Ghana's Mineral, Oil, and Gas Sectors: Is Ghana Getting it Right?](#) ACET, Accra.
- ▶ Aoun, M.-C. and Mathieu, C. 2015. *Local Content Strategies in the Oil and Gas Sector: How to Maximise Benefits to Host Communities*. French Institute for International Relations, Paris.
- ▶ Auty, R. 2006. Mining Enclave to Economic Catalyst: Large Mineral Projects in Developing Countries. *Brown Journal of World Affairs*, 135-145.
- ▶ Baker & McKenzie. 2012. [Latin America: Oil and Gas Handbook](#). Baker & McKenzie, online publication.
- ▶ Balouga, J. 2012. Nigerian Local Content: Challenges and Prospects. *International Association for Energy Economics*, 23-26.
- ▶ British Petroleum. 2015. [BP Statistical Review of World Energy](#). British Petroleum, online publication.
- ▶ Columbia Center for Sustainable Investment. (No date). [Local Content Nigeria-Petroleum](#). CCSI, online publication.
- ▶ Easo, J. and Wallace, A. 2014. *Notes from the Field. An English Law Perspective on The Oil & Gas Market. Understanding Local Content Policies in Africa's Petroleum Sector*. Andrews Kurth, online publication.
- ▶ Ecopetrol. 2013. *Reporte Integrado de Gestión Sostenible 2013 (Sustainable Management Report)*. Ecopetrol, online publication.
- ▶ Fundación Jubileo. 2014. *Impacto Económico Local de las Industrias Extractivas (The Economic Impact of Extractive Industries)*. Fundación Jubileo, La Paz.
- ▶ Global Local Content Council. 2015. [Adding Value In-Country: A selection of Local Content Country Case Studies](#). Global Local Content Council, online publication.
- ▶ Grupo FARO. 2014. *Impacto Económico Local de las Industrias Extractivas (Local Economic Impact of the Extractive Industries)*. Grupo FARO, Quito.
- ▶ Hansen, M., Buur, L., Therkildsen, O. and Kjaer, M. 2014. [The Political Economy of Local Content in African Extractives: Lessons from Three Countries](#). Copenhagen Business School, Copenhagen.

- ▶ Heum, P. 2008. [*Local Content Development - Experiences from Oil and Gas Activities in Norway*](#). SFN Report No. 25/03. Institute for Research in Economics and Business Administration, Bergen.
- ▶ Heum, P., Quale, C., Karlsen, J., Kragha, M. and Osahon, G. 2003. [*Enhancement of Local Content in the Upstream Oil and Gas Industry in Nigeria*](#). SFN Report No. 25/30. Institute for Research in Economics and Business Administration, Bergen.
- ▶ Kennedy, C. 2014. [*Mexican Local Content Rules Could Complicate Oil Investment*](#). Oil Price, online publication.
- ▶ Looney, R. 2012. *Handbook of Oil Politics*. Routledge, London.
- ▶ Magelah, P. 2014. [*Local Content in Oil and Gas Sector: An Assessment of Uganda's Legal and Policy Regimes*](#). ACODE Policy Briefing Paper Series. ACODE, Kampala.
- ▶ Mwakali, J. and Byaruhanga, J. 2011. *Local Content in the Oil and Gas Industry: Implications for Uganda*. Makerere University, Uganda.
- ▶ Musik Asali, G., Espinasa, R. and Walter, M. 2015. [*Energy Reform and Local Content in Mexico: Effects in the Mining Sector*](#). Inter-American Development Bank, Washington, D.C.
- ▶ Natural Resource Governance Institute. 2015. [*Local Content: Strengthening the Local Economy and Workforce*](#). NRG, online publication.
- ▶ Neuhaus, F. 2013. [*New Local Content Rules for the Brazilian Offshore Oil Exploration Sector and the Challenges for the Next Decades in the Ultra-deepwater Pre-salt Layers*](#). Boavista Executive Consultants, online publication.
- ▶ Nigerian Government. 2010. [*Nigerian Oil and Gas Industry Content Development Act*](#). Policy and Legal Advocacy Centre, Abuja.
- ▶ Nordas, H., Vatne, E. and Heum, P. 2003. *The Upstream Petroleum Industry and Local Industrial Development: A Comparative Study*. Institute for Research in Economics and Business Administration, Bergen.
- ▶ O'Connor, R. and Viscidi, L. 2015. [*La Reforma Energética en México: Cerrando la Brecha de Habilidades \(The Energy Reform in Mexico: Closing the Skills Gap\)*](#). Inter-American Dialogue, online publication.
- ▶ Ovadia, J. 2012. The Dual Nature of Local Content in Angola's Oil and Gas Industry: Development vs. Elite Accumulation. *Journal of Contemporary African Studies* 30 (3) 1-23.
- ▶ Ovadia, J. 2014. Local Content and Natural Resource Governance: The Cases of Angola and Nigeria. *The Extractive Industries and Society Journal* 1 (2) 137-146.
- ▶ Pacific Rubiales Energy. 2013. *Sostenibilidad y Responsabilidad Social (Sustainability and Social Responsibility)*. Pacific Rubiales, online publication.
- ▶ Palmer, G. 3 August 2015. *Oil Firms Should Act Now to Stay Ahead of Local Content Rules*. Oil Voice.

- ▶ PEMEX.2013. [Sustainability Report 2013](#). PEMEX, online publication.
- ▶ Petrobras Argentina S.A. 2013. [Informe Social y Ambiental](#) (Social and Environmental Report). Petrobras Argentina S.A. online publication.
- ▶ Petrobras Bolivia S.A. 2013. [Informe Social y Ambiental](#) (Social and Environmental Report). Petrobras Bolivia, online publication.
- ▶ Petrobras. 2013. [Sustainability Report 2013](#). Petrobras, online publication.
- ▶ *Petroecuado. 2013. Memoria de Sostenibilidad 2013 (Sustainability Report 2013). Petroecuador, Quito.*
- ▶ PDVSA. 2014. [Balance de la Gestión Social y Ambiental 2014 \(Social and Environmental Management Report\)](#). PDVSA, online publication.
- ▶ Place, M. 5 May 2015. *Brasil Revisará Contenido Local para Atraer Inversionistas Petroleros (Brazil Will Review Local Content Measures to Attract Oil Investors)*. BN Americas.
- ▶ Regoli, N., Torres-Barron, B. and Polley, B. 12 December 2014. *Uncertainty Lingers About Local Content Rules as Mexico Prepares for Competitive Bid Round*. Oil and Gas Journal.
- ▶ Repsol. 2010. [Informe de Responsabilidad Corporativa-Ecuador \(Corporate Responsibility Report-Ecuador\)](#). Repsol, online publication.
- ▶ Santiso, J. and Dayton-Johnson, J. 2012. *The Oxford Handbook of Latin American Political Economy*. The Oxford University Press, Oxford.
- ▶ Teka, Z. 2011. [Backward Linkages in the Manufacturing Sector in the Oil and Gas Value Chain in Angola](#). Discussion Paper No. 11. The Open University, online publication.
- ▶ Tordo, S., Warner, M., Manzano, O. and Anouti, Y. 2013. *Local Content Policies in the Oil and Gas Sector*. World Bank, Washington, D.C.
- ▶ Tordo, S. and Anouti, Y. 2013. [Local Content in the Oil and Gas Sector: Case Studies](#). World Bank, Washington, D.C.
- ▶ Unam, J. 2015. Local Content Policy, Human Capital Development and Sustainable Business Performance in the Nigerian Oil and Gas Industry. *Journal of Management and Sustainability*, 75-83.
- ▶ Veiga, M. 2013. *The Oil is Ours: An Investigation of Brazil's Petrobras*. Bachelor's dissertation. Wesleyan University.
- ▶ Wilson, T. and Fofaria, A. 2014. [Africanisation: Local Content and the Evolving Investment Reality](#). The Africa Sessions. Africa Practice, online publication.
- ▶ World Bank. 27 January 2016. [Local Content in Oil, Gas, and Mining](#). World Bank, online publication.
- ▶ World Bank's [Doing Business Index 2014](#), accessed October 2015.

ANNEXES

Annex 1: Local Content Frameworks in Latin America – Regional Catalogue

Argentina

LOCAL CONTENT GOAL	SPECIFICITY	POLICIES	LEGISLATION	CONTRACTS
EMPLOYMENT	GENERAL	No local employment provisions	No local employment provisions	<p>Joint Venture Contract for operations in the “Bajada del Palo” zone, clause 3.5 states that: companies granted a concession shall prioritise the hiring of labour from Neuquén. In the event that, due to the characteristics of the works to be carried out, it is not feasible to hire local labour, the companies shall be relieved of this obligation.</p>
	SECTOR SPECIFIC	No local employment provisions	<p>Hydrocarbons Law, Article 71, establishes that at least 75% of staff at all levels of work should be Argentinean. Companies must develop programmes to prepare their employees.</p>	No local employment provisions
			<p>Hydrocarbons Law, Chubut, Article 12. 70% of workers hired during all phases of the project must be native workers from the province of Chubut. This article also includes criteria for determining a native from Chubut. Native workers are provided an extra retirement pension.</p>	
			<p>Hydrocarbons Law, La Pampa, Article 12. 80% of workers must be native workers from the province of La Pampa. The law also provides the criteria for determining a native from La Pampa.</p>	
			<p>Hydrocarbons Law, Neuquen, Article 94. Companies should give preference to hiring Argentinean citizens (especially from Neuquen) at all levels of activity, including management. The proportion of national staff cannot be less than 75%.</p>	
		<p>Hydrocarbons Law, Mendoza, Article 5. 75% of employees must have been born in the province of Mendoza.</p>		
SKILLS DEVELOPMENT	GENERAL	No skills development provisions	<p>Labour Law (25877), Chapter II, Article 20. Mentions professional training.</p>	No skills development provisions
	SECTOR SPECIFIC	No skills development provisions	<p>Hydrocarbons Law, Chubut, Article 13. This article encourages the participation of universities and other public and private provincial agencies in conducting studies in the oil and gas sector. These elements must be included in a socio-economic plan.</p>	No skills development provisions
			<p>Hydrocarbons Law, Neuquen, Article 94. Companies must provide specific capacity building plans to increase technical knowledge among local workers.</p>	

NATIONAL INDUSTRY PARTICIPATION	GENERAL	No national industry participation provisions	No national industry participation provisions	No national industry participation provisions
	SECTOR SPECIFIC	No national industry participation provisions	Hydrocarbons Law, Chubut, Article 12. Establishes that companies must demonstrate preference for buying services and goods from the province of Chubut.	No national industry participation provisions
			Hydrocarbons Law, Article 101. Promotes the participation of Argentinean companies in oil extraction.	
			Hydrocarbons Law, La Pampa, Article 12. Establishes that 80% of services and supplies should be purchased from local (native of La Pampa) providers. The law also provides the criteria for determining services and suppliers native from La Pampa.	
		Hydrocarbons Law, Mendoza, Article 5. Government authorities should encourage the participation of local industry in the exploration and exploitation of hydrocarbons.		

Bolivia

LOCAL CONTENT GOAL	SPECIFICITY	POLICIES	LEGISLATION	CONTRACTS
EMPLOYMENT	GENERAL	No local employment provisions	Departmental Law for the Promotion of Employment (Law 66), Article 1, subparagraph a) promotes local employment.	San Antonio Field Operation Contracts Between YPF and - Repsol - Petrobras - Total, Clause 7.4.establishes a work plan that should contemplate local content. Article g) subparagraph ii) the plan should include local employment and training for local employees.
			Labour Law, Article 3. Companies cannot exceed 15% of foreign staff in all areas.	No local employment provisions
	SECTOR SPECIFIC	No local employment provisions	Hydrocarbons Law, Article 15 (Staff Recruitment). Companies cannot exceed 15% of foreign staff in all areas, this includes administrative, technical and operational areas.	San Antonio Field Operation Contracts Between YPF and - Repsol - Petrobras - Total, Clause 16.3.refers to Article 15 of the Hydrocarbons Law on hiring local staff.
SKILLS DEVELOPMENT	GENERAL	No skills development provisions	Departmental Law for the Promotion of Employment (Law 66), Article 1, Subparagraphs b, c, and d promote capacity building among local employees.	San Antonio Field Operation Contracts Between YPF and - Repsol - Petrobras - Total, Clause 7.4. stipulates that companies should include information about local content in their work plan. Article g) ii) the plan must include local employment and training for local workers.
			Law 516, Article 14. Companies should establish mechanisms to transfer technology to Bolivian universities and Bolivian workers.	San Antonio Field Operation Contracts Between YPF and - Repsol - Petrobras - Total, Clause 15.1, Subparagraph q,the company must take on students or graduates of technical courses related to the oil industry through internships.
			Law 516, Article 21. Investment incentives are established in general terms in Bolivia. Ministers in charge of this subject should determine which incentives apply to each company.	San Antonio Field Operation Contracts Between YPF and - Repsol - Petrobras - Total, Clause 16.4.establishes that personnel training can be included as recoverable cost for the company. The training should be for local staff and staff of YPF.

	SECTOR SPECIFIC	No skills development provisions	Hydrocarbons Law, Article 67 (Mandatory Clauses of Oil Contracts), Subparagraph o), companies must give preference to local workers and local domestic goods and services. Likewise, priority must be given to NOC YPFB workers regarding training programmes.	No skills development provisions
NATIONAL INDUSTRY PARTICIPATION	GENERAL	National Development Plan, Section 4.4.1, the government prioritises the industrialisation of hydrocarbons	National Constitution, Article 311. The Bolivian Government must prioritise the industrialisation of natural resources, to overcome dependence on export commodities and develop an economy based on national production.	San Antonio Field Operation Contracts Between YPFB and - Repsol - Petrobras - Total, Clause 7.4, Subparagraph gi) requires the use of Bolivian goods and services. iii) Promotes the industrialisation of hydrocarbons.
			National Constitution, Article 316. The Bolivian Government should promote the industrialisation of renewable and non-renewable natural resources.	
			National Constitution, Article 334.4. Micro and small enterprises, rural economic organisations and associations of small producers will be given preference in government procurement.	San Antonio Field Operation Contracts Between YPFB and - Repsol - Petrobras - Total, Clause 15.1, Subparagraph s) gives preference to the procurement of goods and services produced by domestic companies.
			National Constitution, Article 335, Subparagraph III. Industrialisation processes will take place near to extractive sites to promote competitiveness in domestic and international markets.	
			National Constitution, Article 363, Subparagraph I creates The Bolivian Company for the Industrialisation of Hydrocarbon (EBIH).	
			DS 27328 This framework regulates the "Compro Boliviano" initiative which promotes the purchase of Bolivian products. Article 25 establishes the conditions and preferences for the acquisition of local goods and services.	
			DS 368, Article 6. Promotes the development of the hydrocarbon industry in Bolivia.	
	Departmental Law for the Promotion of Employment (Law 66), Article 1, Subparagraph e promotes the use of local goods and services in Tarija.			
	SECTOR SPECIFIC	No national industry participation provisions	Hydrocarbons Law, Article 13. The Bolivian Government will promote the industrialisation of hydrocarbons and the execution of other activities for the benefit of national development, providing incentives and creating favourable conditions for domestic and foreign investment.	No national industry participation provisions
	DS 329 Regulates the bidding process for the acquisition by oil companies. Article 17 states the preference for local goods and services.			
DS 29511 Creation of the Bolivian Company for the Industrialisation of Hydrocarbons to promote the petrochemical industry in Bolivia.				
DS 27328, Article 32, Section II contains the concept of local fairs, where local providers offer their products and services to oil companies. Local suppliers perform two fairs each year.				

Brazil

LOCAL CONTENT GOAL	SPECIFICITY	POLICIES	LEGISLATION	CONTRACTS
EMPLOYMENT	GENERAL	No local employment provisions	No local employment provisions	Exploitation and Exploration Model Contract, Clauses 19.1.1 and 19.6.1. Recruitment may be carried out in Brazil or abroad and according to the selection criterion of the Concessionaire, provided the Applicable Law is respected, even with regards to the minimum percentage of Brazilian labour used.
	SECTOR SPECIFIC	No local employment provisions	Hydrocarbons Law, Article 1, Subparagraph II. Promotes development and growth of the labour market.	No local employment provisions
SKILLS DEVELOPMENT	GENERAL	No skills development provisions	No skills development provisions	No local provisions
	SECTOR SPECIFIC	No skills development provisions	Hydrocarbons Law, Article 49, Subparagraph 2) 25% of royalties are to be directed to the Ministry of Science and Technology in order to finance programmes supporting scientific research and technology development within the petroleum industry.	Exploitation and Exploration Model Contract, Clause 24. 1% of the Concessionaire's gross revenue must be invested in resources for research, development and innovation. 50% of this fund should be assigned to universities and institutes accredited by the National Petroleum Agency (ANP) and 10% for research, development and innovation in companies supplying the oil industry. The rest can be used in research projects determined by the concessionaire.
			Hydrocarbons Law, Article 49, Paragraph 1. From the total resources directed to the Ministry of Science and Technology, a minimum of 40% shall be used to fund programmes for promoting the qualification and the scientific and technologic development of the Northern and Northeast Regions.	Exploitation and Exploration Model Contract, Clause 24.7. Establishes fines for noncompliance regarding investment in research and innovation
NATIONAL INDUSTRY PARTICIPATION	GENERAL	No national industry participation provisions	Constitution, Article 173, Subparagraph 2. The government will promote and support microenterprises.	Exploitation and Exploration Model Contract, Clause 20.1.2. Stipulates preference should be given to hiring Brazilian suppliers, when their offers include competitive terms regarding price, time and quality that are more favorable or equivalent to those of non-Brazilian suppliers, irrespective of local content percentage as per Annex IX.
	SECTOR SPECIFIC	No national industry participation provisions	Hydrocarbons Law, Article 5. Enterprises that have oil operations in Brazil must be registered under Brazilian law, including establishing their headquarters and administration in Brazil.	Exploitation and Exploration Model Contract, Clause 20.5. In order to determine the percentage of local content, the monetary values of purchases of property and services shall be updated, using the General Market Price Index of the Getulio Vargas Foundation, or any other index based on ANP criteria.
			Hydrocarbons Law, Article 1, Subparagraphs XI. Promotion of the country's competitiveness in the international market.	Exploitation and Exploration Model Contract, Clauses 20.16 – 20.23. These articles explain the fines for noncompliance with local content. Article 20.16 contains the formula for calculating the percentage of local content, as well as the parameters.
			Hydrocarbons Law, Article 2, Subparagraph X. The National Energy Policy Council (CNPE) must promote the increase of minimum local content rates for goods and services. These minimums should be upheld in bids, concessions and production sharing contracts.	No national industry participation provisions

		<p>Law 12351, Article 10, Subparagraph e. The Ministry of Mines and Energy must set minimum requirements for local content and other criteria related to the development of the national industry.</p> <p>ANP Resolution #36. Sets the criteria and procedures for calculating of local content.</p> <p>ANP Resolution # 37. Sets the criteria and procedures for registration and accreditation of the entities that will be in charge of local content certification.</p> <p>ANP Resolution # 38. Sets the criteria and procedures for the auditing companies authorised to certify local content.</p> <p>ANP Resolution # 39. Sets the schedule, format and content of local investments reports to be presented by operators to the ANP.</p> <p>Law 12351, Article 2, and Subparagraph VIII. Local content is the proportion between the amount of goods produced and the services rendered in the country for execution of the contract and the total amount of the goods used and the services rendered for that purpose.</p>	
--	--	---	--

Colombia

LOCAL CONTENT GOAL	SPECIFICITY	POLICIES	LEGISLATION	CONTRACTS
EMPLOYMENT	GENERAL	<p>National Development Plan. A competitive environment for business development requires the standardisation and formalisation of working conditions. Formal workers are more productive than informal workers. Enterprise growth potential is restricted by limited access to a qualified workforce.</p>	<p>Labour Code, Article 74. Every employer with more than 10 employees should hire at Colombian citizens for at least 90% of ordinary jobs and no less than 80% of qualified positions.</p>	<p>Exploration and Production Contract-Harken Limited (Luna Llana) 2005, Clause 23.4, Personnel. The contractor shall comply with legal provisions that establish the proportion of national and foreign employees and workers.</p>
		<p>National Development Plan. Stipulates the establishment of an internship programme to promote the participation of Colombian citizens and highly qualified foreign workers who provide human capital in less developed areas of the country.</p>	<p>Labour Code, Article 75. The Ministry of Labour can reduce the requirements in Article 74 in the event that specific technical personnel are required and only for the time required to prepare Colombian personnel to take over. Employers that need to hire foreign workers will present documents justifying this need. Authorisation will be granted for a limited time during which Colombian personnel must be prepared.</p>	
	SECTOR SPECIFIC	<p>No local employment provisions</p>	<p>Decree 1056, Article 8. Colombian citizens will be given preference to be hired as high-level employees in petroleum companies with the same conditions and wages as foreign employees, unless their competencies are lower than those of foreign personnel. Colombian workers will be given preference over foreign workers when technical skills are not required or when they have the same level of skills.</p>	<p>Exploration and Production Contract No. 09, 2008, Hupecol Caracara LLC, 3.4. The contractor shall comply with the legal provisions that regulate the proportion of national and foreign employees and workers.</p>

				Exploration and Production Contract No. 27, 2009 Llanos 34 Joint Venture, Clause 51.1. The contractor must comply with the legal regulations indicating the percentage of local and foreign employees and workers.
SKILLS DEVELOPMENT	GENERAL	National Development Plan. When establishing partnerships aimed at strengthening the economy, it is key to develop local skills and transfer the benefits to the population.	Constitution, Article 71. The state will create incentives for people and institutions to foster science and technology.	Association Contract – Argosy Energy International, Clause 32. The operator will train the Colombian personnel required to substitute the foreign personnel that the operator considers necessary for its operations. In all cases, the operator will comply with any legal provisions that stipulate the proportion of local and foreign employees and workers.
		National Development Plan. One of the country’s priorities will be to train highly qualified personnel in order to link the productive and academic sectors.	Labour Code, Article 81. An apprenticeship contract is a contract whereby an employee provides a service in exchange of training provided by the employer.	Exploration and Production Contract No. 27, Llanos 34 Joint Venture, Clause 51.1. The contractor will train any Colombian personnel required to replace foreign personnel that the contractor considers necessary for its activities.
		National Development Plan. Human capital will be trained based on the requirements of the productive sector.	Labour Law, Article 86. Once the apprenticeship contract is over, the employer must give preference to the apprentice to access available work positions under equal conditions.	Exploration and Production Contract-Harken Limited (Luna Llena)-2005, clause 23.4. The contractor shall adequately train the Colombian personnel required to replace foreign personnel that the contractor believes necessary for performing operations pursuant to this contract.
			Labour Law, Article 286. Companies with capital higher than 8,000,000 Pesos must provide their workers with technical training on a continuous basis.	
	Legislative Act 05-2011. Income collected under the national royalty system is to be distributed as follows: 10% for the Science, Technology and Innovation Fund; 10% for territorial savings, and; 30% for the Saving and Stabilisation Fund.			
	Law 1530, 2012, Article 29. The Science, Technology and Innovation Fund must build the country’s scientific capacity and regional competitiveness through projects that promote production and knowledge generation within the country’s productive system.			
SECTOR SPECIFIC	No skills development provisions	Decree 1056, Article 18. The contractor should provide technical capacity building for a period of two years to 3 students. The selection of these students and their payment will be defined by common agreement between the Government and the contractor.	Association Contract – Argosy Energy International (Rio Magdalena), Clause 32.3. The associate agrees to implement a training programme for ECOPETROL professionals in areas related to the development of the contract. For fulfilment of obligations regarding technology transfer, the associate commits to carrying out training programmes directed at ECOPETROL professionals for a value up to USD25,000 for each phase of the exploration period.	

			<p>Decree 1056, Article 119. The obligation that the contractor has referring to Article 18 will only be effective from the beginning of the contractor's operations. The government and the contractor, by mutual agreement, can cancel the scholarship or internship of one or several students from the learning programme at any time (as indicated in Article 18).</p>	<p>Exploration and Production Contract No. 09, Hupecol Caracara LLC, Clause 23.5. The company must carry out research, training and education programmes and support the National Hydrocarbons Agency (ANH) scholarship programme. The contractor agrees to carry out and pay for research, training and education programmes in each phase of the exploration period.</p>
			<p>Agreement 04-2014, Article 4.3. Skills development, institutional development and technology transfer allocations are those provided by Exploitation and Production (E&P) Contractors to the ANH in order to invest in the hydrocarbons sector, support skills, institutional development programmes or initiatives to enhance knowledge transfer.</p>	<p>Exploration and Production Contract-Harken Limited (Luna Llena)-2005, Clause 23.5. The contractor shall host training programmes for professionals or by sponsoring research projects designated by ANH. Training shall be related to technical, environmental, commercial and legal areas of the oil industry. The contractor shall commit to carrying out technology transfer programmes to the value of up to 25% of the amount resulting from multiplying the number of hectares and any fraction of the Contracted Area, by the value presented in the chart defined in Clause 16. With regard to Exploitation Areas, technology transfer shall be carried out to a value of up to 10% of the amount of the right of use of subsoil pursuant to Clause 16 per calendar year. In no event shall the total value of technology transfer exceed USD\$100,000 per phase or calendar year.</p>
NATIONAL INDUSTRY PARTICIPATION	GENERAL	<p>National Development Plan. The Regional Commissions for Competitiveness are mechanisms to link the public and private sectors, promote productive development and generate competitive and innovative environments.</p>	No national industry participation provisions	<p>Exploration and Production Contract No. 09, Hupecol Caracara LLC, Clause 23.3. Domestic Component: the contractor will make an effort to give priority to domestic bidders providing assets and services of a domestic origin, with equal competitive conditions for quality, opportunity and price.</p>
		<p>National Development Plan. National priorities: modernisation of the energy-mining transportation infrastructure, development of energy-mining clusters and diversification of the economy.</p>		<p>Exploration and Production Contract-Harken Limited (Luna Llena), Clause 23.3. The contractor shall endeavour to give preference to national bidders of goods and services of national origin in equal conditions of quality, opportunity and price.</p>

		National Development Plan. An integral competitiveness policy is based on increasing the competitiveness of national companies in international markets. The objective of this policy is to increase productivity and investment rates above 30%.		
		National Development Plan. Productivity growth is possible when there is an adequate environment for competitiveness reflected in a well-developed financial system, simple and business friendly regulations.		
		National Development Plan. Competition generates the incentives required to boost innovation and technical change.		
		National Development Plan. An attractive country for investment should be able to attract entrepreneurs and enable companies to invest, grow and develop.		
SECTOR SPECIFIC	No national industry participation provisions	Agreement 01, Contracting Principles ANH 4.1.1. The ANH will not grant unjustified advantages to any company during a bidding process, and will offer all the necessary information to the participants.	No national industry participation provisions	
		Agreement 01, Contracting Principles ANH 21.2. When granting contracts related to knowledge management, price will not be a causal factor for the selection of an offer.		

Ecuador

LOCAL CONTENT GOAL	SPECIFICITY	POLICIES	LEGISLATION	CONTRACTS
EMPLOYMENT	GENERAL	National Development Plan, Goal 1.8. Build a pluri-national and intercultural State and promote the incorporation of professionals from all nationalities and peoples without discrimination.	Constitution, Article 284. Economic Policy should promote employment and support all forms of occupation respecting people's rights.	No local employment provisions
		National Plan for Good Living, Goal 1.6. 14% of public sector employees should be of Afro-Ecuadorian or indigenous descent	Labour Code, Article 329. The State will adopt specific measures to end all types of discrimination that affect communities, peoples and nationalities and will guarantee access to employment under equal conditions.	
	SECTOR SPECIFIC	No local employment provisions	Hydrocarbons Law, Article 31. Petroecuador, the contractors and other associates in the exploration, exploitation, refining, transportation and commercialisation of hydrocarbons are obliged to employ within 6 months after the start of their operations a minimum of 95% of Ecuadorian labourers, 90% of Ecuadorian administrative employees, and 75% of Ecuadorian technicians, unless these minimums are not available among Ecuadorian workers. Within two years, 95% of the administrative staff shall be Ecuadorian.	Service Contracts: Tecpecuador 2011 (8.2.10); AGIPGAS (8.2.10); and ENAP SIPEC (8.2.10). Employ in the execution of services a minimum of 95% Ecuadorian workers, 95% Ecuadorian administrative staff and 75% Ecuadorian technicians, unless there are no national personnel available, according to the law.
SKILLS DEVELOPMENT	GENERAL	National Plan for Good Living, Goal 2.1. Build capacities to foster economic inclusion and social promotion through the implementation of skills development processes, vocational training, professional development and other mechanisms to foster the diversification of the productive matrix.	Constitution, Article 234. The State will guarantee the development and continuous training of public employees through institutes and skills development programmes provided by the private sector in coordination with national and international institutions.	No skills development provisions
			Labour Code, Article 168. The industry will establish apprenticeship agreements for specialist skills development. Apprentices cannot exceed 10% of the total number of workers and the apprenticeship agreement cannot last longer than 2 years.	
			Labour Code, Article 165. Employers must hire and train apprentices or pay a fine equivalent to 5% of the total value of the salaries of potential apprentices. The fine will be paid annually to the National Service of Professional Training (SECAP).	
			Organic Law for the Public Procurement System. Article 25.2. The Public Procurement Secretariat will supervise the inclusion and implementation of technology and knowledge transfer mechanisms in any contracting process in which non-Ecuadorian suppliers participate.	
			Organic Law for the Public Procurement System, Article 41. When national companies present a proposal to foreign companies, procedures and methodologies will be taken into consideration to ensure the adequate transfer of technology and the best use of the technical capacity of Ecuadorian professionals.	

SECTOR SPECIFIC	<p>Hydrocarbons Ministry Operative Plan, Objective 7. 1) Support the training of human capital linked to the hydrocarbons sector; 4) Assign resources for research, innovation and new technologies; 5) Manage and facilitate agreements for scientific assistance between the government, universities and public and private sector at the national and international level.</p>	<p>Hydrocarbons Law, Article 31. The service contractor will implement technical and administrative skills development programmes in order to ensure that within 5 years after the start of exploitation activities the execution of operations is entirely carried out by Ecuadorian labourers and administrative employees and by 90% of Ecuadorian technicians. Foreign personnel facilitating the transfer of technology to national personnel will form the remaining 10%.</p>	<p>Service Contract, Tecpecuador/AGIP (8.2.9)The contractor is responsible for bearing the cost of the implementation of skills development programmes according to the law. Foreign technical and administrative personnel will provide training to national personnel and will promote technology transfer.</p>
	<p>Petroecuador Operative Plan 2014-2017, Objective 4.1. Increase skills development training related to the adoption of new international practices by 2018. Related objective: Develop and implement a knowledge transfer management system. Related Goal: 8,000 training hours in the Esmeraldas Refinery. Indicator: Hours of training.</p>	<p>Hydrocarbons Law, Article 31. j)During the exploitation process, the contractor is responsible for contributing to the development of national technical education and will grant sector specific scholarships in the country or abroad.</p>	<p>Service Contract, Tecpecuador/AGIP (8.2.26) The contractor will hire students of technical studies so they can engage in internships. The duration of the internships and the number of interns should not be higher to 4% of the total number of employees per year.</p>
	<p>Petroecuador Operative Plan 2014-2017, Company Objective 1) Increase and promote the specialisation of personnel skills.</p>	<p>Regulation of the Hydrocarbons Law, Article 31, p)The contractor is responsible for arranging internships for students from technical studies related to the hydrocarbons sector. The contractors must cover the costs of the internships.</p>	
	<p>Hydrocarbons Ministry Strategic Plan, Sectorial Objective 7, 1) Promote skill development linked to the hydrocarbons sector.</p>	<p>Regulation of the Hydrocarbons Law, Article 15. 9) It is a priority of the hydrocarbons sector to promote scientific and technological development and to promote skills training, preferably through public universities.</p>	
	<p>Petroamazonas Strategic Plan 2014-2017. Strategic Objective 7) Strengthen human resource capacities. Related strategies: a) promote continuous skills building; b) provide competitive remuneration to employees. Related Indicators: a) training b) remuneration. Related goals: a) 15,000 training courses provided during the reporting period (2014-2017).</p>	<p>Hydrocarbons Accounting Regulation, Article 5.6.1 Training activities (i.e. contribution to the development of national technical education and scholarships) are defined as contractual obligations that must be included in financial reports under the category of "exploration investments".</p>	<p>Service Contract, Tecpecuador/AGIP (19.3.6) The Supervision Committee is in charge of supervising compliance with the skills development plan and recommending areas where skills development is most needed.</p>
	<p>Hydrocarbons Ministry Strategic Plan, Sectorial Objective 7, 5) Manage agreements and exchanges with local governments, national and international universities and public institutions.</p>	<p>Hydrocarbons Accounting Regulation, Article 9, 9.1. h) Training and skills development for national personnel is considered an operational cost.</p>	
		<p>Hydrocarbons Accounting Regulation, Article 15. Contribution for scientific research. Contractors are obliged to pay 1% of the total amount of services provided to promote research and scientific and technological development.</p> <p>Hydrocarbons Secretariat Processes Statute, Article 18. The Sub-secretariat of Hydrocarbons must g) recommend the establishment of internship and learning agreements by companies in order to ensure the participation of students from technical fields. This entity should recommend the number of students the contractors should receive.</p>	

NATIONAL INDUSTRY PARTICIPATION	GENERAL	National Plan for Good Living, Goal 1.6. Strengthen public enterprises as agents of productive transformation, promote good practices in the private sector and social responsibility in the public sector, f) consolidate the functioning of public enterprises focusing on strategic sectors, by changing the production and energy matrix, j) promote and diversify the production chain and import substitution.	Constitution, Article 315. The State will establish public enterprises to manage strategic sectors, provide services and ensure the sustainable use of natural resources and public goods.	No national industry participation provisions
		National Plan for Good Living, Goal 2.4. Generate equal conditions and opportunities to j) generate incentives and develop affirmative actions for improving access to production infrastructure, science and technology and skills development.	Constitution, Article 339. The State will promote national and foreign investments and will establish specific regulations in order to prioritise national investment. Foreign investment will be complementary and will be subjected to strict compliance of national regulations.	
			Organic Law for the Public Procurement System, Article 9. Priorities of the State are to 4) transform public procurement into a key aspect of national production, 11) promote and guarantee the participation of competitive suppliers.	
			Organic Law for the Public Procurement System, Article 25. Every bidding process will include evaluation criteria that promote national and local participation through a margin of preference for the local provision of goods and services.	
			Organic Law for the Public Procurement System, Article 25.2 The State will give preference to the procurement of goods and services of Ecuadorian origin and from small and medium enterprises. Mechanisms to enhance participation include preference margins over bids from other providers and market shares, among others. For the acquisition of goods and services not considered Ecuadorian according to the law, previous verification of the inexistence of Ecuadorian bids should be verified.	
			Organic Law for the Public Procurement System, Article 37. The participation of foreign consultants in the public bidding process will be limited to those services, fields and activities where there is no technical capacity or experience among national consultants. In order to certify this, the National Procurement Service should publicly request offers from national providers.	
			Organic Law for the Public Procurement System, Article 39. Foreign companies must be registered in Ecuador according to the law.	
		SECTOR SPECIFIC	Hydrocarbons Ministry Operative Plan, Objective 1. 5) Foster the participation of the national industry in the hydrocarbons sector.	

		<p>Hydrocarbons Ministry Operative Plan, Objective 7. 2) Improve infrastructure and productivity by giving preference to the national industry.</p>	<p>Hydrocarbons Law, Article 2. Works or specific services Petroecuador needs to carry out can be performed by Petroecuador itself or through contracts, giving preference, under equal conditions, to national enterprises.</p>	
		<p>Hydrocarbons Ministry Strategic Plan, Sectorial Objective 1.5) Foster national industry participation in the hydrocarbons sector.</p>	<p>Regulation of the Hydrocarbons Law, Article 15. 5) Give preference to the national industry and its technological development. National enterprises will be favoured even when their prices are 15% higher compared to other offers.</p>	
			<p>Regulation of the Hydrocarbons Law, Article 7. When Ecuadorian public enterprises do not have the technical or economic capacity to engage in exploration or exploitation activities, the Hydrocarbons Secretariat will delegate these activities to international state-run companies that can participate independently or in association with other state companies.</p>	
			<p>Regulation of the Hydrocarbons Law, Article 10. When public enterprises do not have the technical or economic capacity to engage in exploration or exploitation activities, the Hydrocarbons Secretariat will delegate these activities to private companies, national or international, through a public tender process and according to the law.</p>	
			<p>Regulation Hiring Processes for Petroecuador and its Subsidiaries, Article 4. In the case of acquisition of goods or services, Petroecuador and its subsidiary companies will favour Ecuadorian enterprises or Ecuadorian production over foreign companies. Terms of reference will include criteria to motivate local and national participation through a margin of preference for local and national suppliers.</p>	

Mexico

LOCAL CONTENT GOAL	SPECIFICITY	POLICIES	LEGISLATION	CONTRACTS
EMPLOYMENT	GENERAL	No local employment provisions	Federal Labour Law, Article 7. Every company in Mexico must hire at least 90% of Mexican personnel. Technicians and professionals must all be nationals unless there are insufficient Mexican personnel to meet this requirement. Employers and foreign workers must build capacities in Mexican workers.	No local employment provisions
	SECTOR SPECIFIC	No local employment provisions	PEMEX Law, Article 72. PEMEX and its subsidiaries have a special remuneration scheme different to that established in the Constitution.	No local employment provisions
			PEMEX Law, Article 74. The recruitment of non-unionised staff requires that requests be published and submitted through PEMEX's website. PEMEX Law, Article 75. PEMEX and its subsidiaries shall make acquisitions, leases and service contracts based on the principles of economy, efficiency, effectiveness, fairness and honesty, in order to ensure the state the best available conditions in terms of price, quality and financing.	
SKILLS DEVELOPMENT	GENERAL	No skills development provisions	No skills development provisions	No skills development provisions
	SECTOR SPECIFIC	No skills development provisions	PEMEX Law, Article 5. V. PEMEX may conduct research and technological development required for the activities carried out in the oil industry, and the training of highly specialised human resources. These activities can be done directly through the Mexican Petroleum Institute or through any specialised third party.	Service Contract (Santuario Area) Between PEMEX and PETROFAC, Clause 19.4. The company shall provide PEMEX with an annual capacity building programme. The budget destined to this purpose must always be higher than 1% of its annual budget. Service Contract (Santuario Area) Between PEMEX and PETROFAC, Clause 19.6. The company shall foster research and technology development and shall transfer the knowledge generated to PEMEX personnel. The company's annual plan shall include a chapter on technology transfer.
NATIONAL INDUSTRY PARTICIPATION	GENERAL	No national industry participation provisions	Industrial Property Law, Article 6. The Mexican Institute of Industrial Property aims to encourage the participation of industry in the development of technologies that increase quality, competitiveness and productivity, and to conduct research into the progress and implementation of national and international industrial technology. Regulation of the Procurement Act, Leases and Public Sector Services, Article 35. The invitation to public tender should include a requirement for a written statement establishing that the bidder is Mexican. Also, the bidder must state that the goods that will be delivered are going to be produced in Mexico and will have the corresponding local content percentage.	No national industry participation provisions

	<p>SECTOR SPECIFIC</p>	<p>PEMEX Strategy for the Development of Suppliers, Contractors and Local Content. Includes formulas for calculating local content based on goods manufactured in Mexico and requires local content of 50%.</p>	<p>PEMEX Law, Article 76. The Board of Directors of PEMEX shall ensure require minimum percentages of local content, according to the nature of the procurement and in accordance with international treaties to which Mexico is party.</p>	<p>No national industry participation provisions</p>
<p>National Development Plan. 4.7.4 Design and implement a strategy to attract investment, create jobs and increase local content.</p>		<p>PEMEX Law, Article 78. In cases where an open bidding process fails, PEMEX may opt to issue a direct award based on criteria indicating potential beneficiaries that are residents of the locality where the project is developed.</p> <p>Hydrocarbons Law, Article 19. Contracts signed by PEMEX shall include clauses relating to a minimum percentage of local content.</p> <p>Hydrocarbons Law, Article 46. All activities carried out through exploration and production contracts should reach, on average, at least 35% of local content. Contractors shall progressively meet this minimum requirement for local content. These contracts should include a programme for complying with this percentage, including deadlines and stages. The goal of local content should be included in the basis of the tender procedure.</p> <p>Hydrocarbons Law, Article 46. The Secretary of Economy shall establish the methodology for measuring local content in contracts and shall verify compliance of these percentages. To establish this methodology, the Secretary will consider: 1. Goods and services purchased according to origin; 2. National and skilled labour; 3. Training of the national workforce; 4. Investment in local and regional infrastructure, 5. Technology transfer. If the contractor fails to comply with the local content percentage, the National Hydrocarbons Commission shall impose penalties.</p> <p>Hydrocarbons Law, Article 125. The Secretary of Economy will define strategies for the industrial development of local production chains and promote direct investment in the hydrocarbons industry, with particular emphasis onto small and medium enterprises.</p> <p>Hydrocarbons Law, Article 125. The strategy for the industrial development of local production chains shall: a) Identify the industrial sectors and regions aligned with the demands of the hydrocarbons sector b) Integrate, manage and update a register of local suppliers for the oil industry; c) Implement programmes for the development of national suppliers and contractors; d) Establish a consultative council to support the promotion of national industry, the formation of production chains and capacity building.</p> <p>Hydrocarbons Law, Article 125. The strategy for promoting investment shall: a) Encourage participation of Mexican companies within the hydrocarbons sector; b) Foster partnerships between Mexican and foreign companies; c) Foster investment in activities related to the hydrocarbons sector; d) Promote technology and knowledge transfer.</p>		

		<p>Hydrocarbons Law, Article 125. The Secretary of Economy is responsible for developing an annual report on the progress of industrial development strategies. To fulfil this, the Secretary of the Economy will have the support of the Public Trust Fund to Promote the Development of National Suppliers and Contractors of the Energy Industry.</p>	
		<p>Hydrocarbons Law, Article 126. The Secretary of Economy shall establish the methodology for measuring local content and also for measuring its verification. Contractors shall provide information to the Secretary of the Economy about local content in the activities they undertake.</p>	
		<p>Hydrocarbons Law, Article 127. The Public Trust Fund established in Article 125 will be created in a development bank. It will promote the development of suppliers and contractors through financing schemes and support programmes for training, research and certification.</p>	
		<p>Hydrocarbons Law, Article 128. The Secretary of Energy, the National Hydrocarbons Commission and the Energy Regulations Commission, with support from the Secretary of Economy, shall establish within the conditions included in contracts that preference should be given to: I. The acquisition of national property, and II. The procurement of national labour, including training and recruitment of Mexicans.</p>	
		<p>Hydrocarbons Law, Transitional Eighteenth. The Secretary of Economy will create a specialised unit that will: I. Follow up strategies for industrial development of local production chains and direct investment II. Propose a methodology for measuring local content in contracts III. Verify compliance of the contracts with the goals of local content.</p>	
		<p>Hydrocarbons Law, Transitional Fourteenth. The average minimum percentage of local content in the exploration and extraction of hydrocarbons will increase gradually from 25% in 2015 to at least 35% in 2025 and should be reviewed every five years.</p>	
		<p>Regulation of the PEMEX Law, Article 38. PEMEX and its subsidiaries will devise an annual procurement programme which should include a chapter relating to purchases from small and medium enterprises and another chapter regarding policies related to the incorporation of local content.</p>	
		<p>PEMEX Statutes, Article 146. VII. The Corporate Procurement and Supply Division will establish mechanisms and forums for participation and exchange between relevant authorities, chambers and associations relating to supplies and contracts</p>	
		<p>PEMEX Statutes, Article 146. The Corporate Procurement and Supply Division will manage the implementation of policies and measures for the development of suppliers, contractors and local content.</p>	
		<p>PEMEX Statutes, Article 146. The Development and Relations with Suppliers and Contractors Division will be tasked with coordinating actions for quantifying and reporting local content of PEMEX and its subsidiaries. Likewise, this Division will contribute to the development of the methodology for measuring local content.</p>	

Venezuela

LOCAL CONTENT GOAL	SPECIFICITY	POLICIES	LEGISLATION	CONTRACTS
EMPLOYMENT	GENERAL	No local employment provisions	<p>Hydrocarbons Law, Article 32. The State guarantees the collective bargaining regime and access to the benefits provided in the labour legislation.</p> <p>Labour Law, Article 27. Companies or employers employing more than 10 people must ensure that at least 90% of workers are Venezuelans.</p> <p>Labour Law, Article 27. The remuneration of foreign personnel shall not exceed 20% of the total wages paid to other workers. Workers of Venezuelan nationality will be required to perform certain responsibilities.</p> <p>Labour Law, Article 28. The Ministry of Labour may authorise temporary exceptions to the provisions of Article 27 when:</p> <ol style="list-style-type: none"> 1. Activities require special skills and there is no Venezuelan personnel available. However, the employer must train Venezuelan personnel within a defined period; 2. The demand for a specific job exists and the Ministry verifies that this requirement cannot be met with Venezuelan personnel; 3. In the case of immigrants entering the country; 4. In the case of people defined as refugees. <p>Labour Law, Article 29. When foreign staff are hired preference will be given to those who have Venezuelan children, are married to Venezuelans, are resident in Venezuela or who have been resident for a period greater than five years.</p> <p>Labour Law, Article 527. Any employer who violates the provisions regarding the percentage of foreign workers will be fined between thirty and sixty tax units.</p>	No local employment provisions
	SECTOR SPECIFIC	National Development Plan 1.2.10.2. Foster the participation of workers during the planning of activities in the oil and mining industry.	No local employment provisions	No local employment provisions
SKILLS DEVELOPMENT	GENERAL	National Development Plan 1.5.1.8. Foster capacity building for science, technology and innovation through the socialisation of scientific knowledge.	Hydrocarbons Law, Article 36. Legal frameworks that grant the right to carry out oil activities may provide special advantages to Venezuela, such as the use and transfer of new technologies, as well as scholarships, technical training opportunities or other activities related to human capital development.	No skills development provision
		National Development Plan 3.2.3.3. Ensure comprehensive and continuous training of workers to adopt techniques and technologies that foster efficient production and humanise the work	Law on Promotion and Protection of Investments, Article 16. The Executive shall establish arrangements for granting benefits related to human capital training, productive development and the integration of the national economy into international markets. Preference will be given to: 1) Training and activities related to technological research; 2) Improving competitiveness of the productive sectors; 3) Higher value-added export activities; 4) Promotion of business networks and supply chains.	No skills development provision
			Labour Law, Article 25. The social work process should help to ensure economic sovereignty by creating and innovating in technologies and by generating scientific knowledge based on the development of the country and the service of society.	No skills development provision
			Labour Law, Article 297. Collective guidance focused on training and technological innovation must be guaranteed by the state through a system of trainees, apprentices and interns.	
Labour Law, Article 312. Every worker has the right to technical and technological training related to the processes, equipment and machinery linked to his/her activities.	Labour Law, Article 318. In order to institutionalise the collective formation of the working class, workers and employers may sign agreements with educational institutions to facilitate this process.			

	SECTOR SPECIFIC	National Development Plan 1.2.4. Foster scientific research and technological development to secure the operations of the oil industry.	No skills development provisions	No skills development provisions
		National Development Plan 3.1.9. Strengthen the technological sovereignty of the hydrocarbons sector.		
		National Development Plan 3.1.11.3. Ensure the training of human resources to implement activities along the hydrocarbons sector value chain.		
		National Development Plan 3.1.9.3. Create the "Socialist Petroleum Technical School" for training technicians required in the oil industry.		
NATIONAL INDUSTRY PARTICIPATION	GENERAL	National Development Plan 2.1.3. Expand productive chains, generating added-value to meet social needs through the diversification of the productive matrix.	Reform of the Bidding Law, Article 4. The contracting entity must take the necessary measures to ensure that the procedures for selecting contractors contain mechanisms to incorporate the maximum participation of domestic supply of goods and services.	No national industry participation provisions
			Reform of the Bidding Law, Article 7. In the evaluation criteria, the contracting entity must take the necessary measures to incorporate domestic supply of goods and services produced by small and medium enterprises. The contracting entity must also set conditions for promoting national development through the use of technology.	
			Public Procurement Law, Article 8. During the hiring process, the contracting entity must ensure the inclusion of goods and services produced in the country with resources from public financing and that comply with technical specifications.	
		National Development Plan 3.1.5 Expand national refinery infrastructure to increase capacity for hydrocarbon processing.	Public Procurement Law, Article 9. During bidding processes, priority will be given to offers that meet the following criteria: 1. In the procurement of goods, the bid that provides greater domestic value added. 2. For procurement of works and services, bidders whose primary residence is in Venezuela. 3. The offer that incorporates a greater amount of domestic inputs and higher participation of national human resources.	
			Public Procurement Law, Article 25. In order to develop productive capacity and promote the participation of small and medium enterprises, the National Procurement Service may organise meetings with bidders for the socialisation of offers.	
			Regulations of the Public Procurement Law, Article 10. The highest authority of the contracting entities shall take measures to ensure that contracts signed with resources from international agreements contain provisions to foster participation of national components.	
			Regulations of the Public Procurement Law, Article 11. The National Procurement Service is responsible for consolidating information on the demand and supply of goods and services and for organising meetings with small and medium enterprise to develop their productive capacity and foster their participation in these processes	

SECTOR SPECIFIC	National Development Plan 3.1.8.1. Increase the assembly capacity of drills, valves and other inputs for oil operations.	Regulations of the Public Procurement Law, Article 58. The National Procurement Service should organise a quarterly meeting with potential bidders. These meetings may be organised at the regional level.	
		Regulations of the Public Procurement Law, Article 112. The contracting authorities should foster the participation of small and medium enterprises, cooperatives or other associative initiatives located in the site where the contract is executed.	
		Labour Law, Article 25. The social work process should contribute to ensure integral human development through the generation of jobs, domestic value added and economic growth.	
	National Development Plan 3.1.8.1. Increase the assembly capacity of drills, valves and other inputs for oil operations.	Hydrocarbons Law, Article 5. The activities regulated by the Hydrocarbons Law aim to promote comprehensive and sustained development of the country, considering the rational use of resources. The State shall promote the strengthening of the productive sector and the transformation of raw materials from hydrocarbons.	No national industry participation provisions
		Hydrocarbons Law, Article 18. The Executive shall adopt measures to promote domestic human capital development and training for the creation and consolidation of manufacturing and supply companies of goods of national origin for activities under the Hydrocarbons Law. The State and the companies referred to in this Law shall incorporate the participation of national companies into their hiring processes.	
		Hydrocarbons Law, Article 51. The Executive shall adopt measures for the industrialisation of hydrocarbons within the country. These measures should encourage investment in projects that generate substances that support the development of national industry.	
		Hydrocarbons Law, Article 52. The Executive will give priority to hydrocarbons industrialisation projects which stimulate the formation of national capital and generate greater added value to become competitive in foreign markets.	
		Hydrocarbons (Gas) Law, Article 31. The Executive shall provide the necessary regulations for the industrialisation of gas in the country. These frameworks should contain measures to ensure that companies that carry out industrialisation processes promote downstream industrialisation to produce their inputs.	
		Hydrocarbons (Gas) Law, Article 32. The Executive will give priority to hydrocarbons industrialisation projects that stimulate the formation of national capital and generate greater added value to become competitive in foreign markets.	

Annex 2. Data Assessing the Outcomes of Local Content Frameworks in Latin America (2012 – 2014)

Category	Indicator		Ecuador ⁶	Colombia ⁷	Mexico ⁸	Brazil ⁹	Venezuela ¹⁰	Bolivia ¹¹	Argentina ¹²
Local Employment	# of Employees	NOC	5.946	8.8	141.875	86.111	116.806	2.131	n/d
		Private	548	2.273	n/a	n/d	n/a	571	2.959
	% Local employees	NOC	95%	90%	92 – 95%	91.27%	93 – 95%	n/d	n/d
		Private	94%	n/d	n/a	n/d	n/d	95.44%	100%
Skills Development	Annual Investment in Skills Development (USD)	NOC	2,288,591.00	16,052,223.23	79,047,284.12	196,104,944.73	48,291.105.88	n/d	n/d
		Private	n/d	n/d	n/a	n/d	n/a	n/d	n/d
	Skills Development Investment per Employee	NOC	384.89	1824.11	557.16	2277.35	413.43	n/d	n/d
National Industry Participation	Annual Value of Contracts Awarded to Providers, (USD)	NOC	3,403,216,046.03	10,995,565,608.42	n/d	40,797,246,185.88	n/d	n/d	n/d
		Private	137,693,372.00	n/d	n/a	n/d	n/a	258,000,000.00	n/d
	% of Contracts Awarded to National and Local Companies	NOC	71%	90%	n/d	77%	n/d	n/d	n/d
		Private	n/d	n/d	n/a	n/d	n/a	n/d	96%

⁶ Repsol.2013. [Informe de Responsabilidad Corporativa-Ecuador](#) (Corporate Responsibility Report-Ecuador). Repsol, online publication.

Petroecuador.2013. Memoria de Sostenibilidad 2013 (Sustainability Report 2013). Petroecuador, Quito.

⁷ Pacific Rubiales Energy.2013. Sostenibilidad y Responsabilidad Social (Sustainability and Social Responsibility). Pacific Rubiales, online publication.

Ecopetrol. 2013. Reporte Integrado de Gestión Sostenible 2013 (Sustainable Management Report). Ecopetrol, online publication.

⁸ PEMEX 2013. [Sustainability Report 2013](#). PEMEX, online publication.

⁹ Petrobras.2013. [Sustainability Report 2013](#). Petrobras, online publication.

¹⁰ PDVSA.2014. [Balance de la Gestión Social y Ambiental 2014](#) (Social and Environmental Management Report). PDVSA, online publication.

¹¹ Petrobras Bolivia.2013. [Informe Social y Ambiental](#) (Environmental and Social Report). Petrobras Bolivia, online publication.

¹² Petrobras Argentina S.A. 2013. [Informe Social y Ambiental](#). (Environmental and Social Report). Petrobras Argentina S.A. online publication.