

# **Trickle Down Development?**

The Expansion of Asparagus Exports and Water Availability for  
Urban Marginal Groups in Ica, Peru

By

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## ABSTRACT

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This thesis explores the neoliberal approach to development and its influence on resource management in Latin America using a case study of Peru. Peru's neoliberal reforms, beginning in 1990s, were successful in fostering macro-economic growth and helping the country reverse its dismal economic performance of the 1970s and 1980s. Promoted by neoliberal policies natural resource export booms, including in the non-traditional agricultural export (NTAX) sector, have contributed to Peru's economic success. However, this overall economic growth has exacerbated the pre-existing inequalities of Peru. By applying an analysis inspired by structuralist and dependency theories, this thesis critically examines Peru's NTAX expansion to understand why 'underdevelopment' and the country's position as a 'resource periphery' has continued to take place.

This study focuses on the rapid expansion of fresh asparagus exports in the Ica Valley following the 1990 reforms. Fresh asparagus production in the Ica Valley represents the flagship of Peru's NTAX boom, with the industry generating economic growth and eradicating the area's previously high unemployment. However, the industry has also concentrated water access and worsened water non-availability and inequalities in the valley. These problems are disproportionately affecting Ica's marginalised population, yet limited work has documented how marginal urban groups are being impacted. This research therefore investigates how the asparagus export boom has affected Ica's marginal urban groups and their access to water. In doing so, it critically studies the withdrawal of the state from development planning and resource management. Additionally, this research seeks to connect the rural and urban spheres, which are commonly and problematically separated in development study, through a contemporary example of the resource curse argument.

**Keywords:** *Neoliberalism; Water; Water Management; Marginalisation; Non-Traditional Agricultural Exports; Underdevelopment; Resource Curse; Peru; Latin America.*

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## GLOSSARY OF SPANISH TERMS<sup>1</sup>

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<i>Campesino/a:</i>	Peasant farmer, small scale producer or rural worker.
<i>Esteras:</i>	A type of bamboo used as basic housing material, commonly used in marginal areas.
<i>Hacienda:</i>	Large agricultural estate, common in Peru following Spanish conquest.
<i>Junta de Usuarios:</i>	Private water user boards, function as irrigational water service providers.
<i>Mestizo/a:</i>	A person of mixed (European and Indigenous) heritage.
<i>Parcelas:</i>	Small plots of land, mostly created after the separation of the <i>Haciendas</i> in 1969.
<i>Pozo:</i>	Water well or storage pool.
<i>Pueblo joven:</i>	Shanty town, marginal urban area, or a 'young town'. Generally characterised by inadequate housing and lacking in public services.
<i>Riego por goteo:</i>	Drip Irrigation, a modern irrigational system which applies water directly to the crop as opposed to the entire field.
<i>Selva:</i>	The Amazon Jungle Region.
<i>Sierra:</i>	The Andean Mountain Region.

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<sup>1</sup> Note: The definitions of terms above are not necessarily the only definitions which exist. They represent the ways the terms have been applied in this thesis. Some terms may be specific to either Peru and/or parts of Latin America.

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## TABLE OF ACRONYMS<sup>2</sup>

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AFS:	Agro-Food System
ALA:	<i>Administración Local del Agua</i> (Local Administration of Water)
ANA:	<i>Autoridad Nacional del Agua</i> (National Authority of Water)
CEPES:	<i>Centro Peruano de Estudios Sociales</i> (Centre for Peruvian Social Studies)
CODEHICA:	<i>Comisión de Derechos Humanos de Ica</i> (Human Rights Commission of Ica)
CR:	Critical Realism
CSG:	Central Study Group
EG:	Expert Group
EMAPICA:	<i>Empresa Municipal de Agua Potable y Alcantarillado de Ica</i> (Company of Public Potable Water and Sewage of Ica)
FFV:	Fresh Fruit and Vegetables
FPG:	Farmer and Processor Group
FREDEPJUP:	Frente de Defensa de los Pueblos Jovenes y Urbanizaciones Populares (The Front for the Defence and Development of the Young Towns and Populated Centres of Ica)
GDI:	Gender related development index
GDP:	Gross Domestic Product
GEM:	Gender empowerment measure

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<sup>2</sup> The thesis uses Spanish acronyms. The acronyms are introduced in full English translations with the original Spanish names in the body text.

AAI:	<i>Asociación de Agricultores de Ica</i> (Ica Farmer's Association)
IMF:	International Monetary Fund
ISI:	Import Substituting Industrialisation
JUASVI:	<i>Junta de Usuarios de Aguas Subterráneas del Valle de Ica</i> (Groundwater Users' Board of the Ica Valley)
NTAXs:	Non-Traditional Agricultural Exports
PUCP:	University: <i>Pontificia Universidad Católica del Perú</i>
SAPs:	Structural Adjustment Programmes
TNCs:	Trans-National Corporations
USAID:	United States Agency for International Development
WHO:	World Health Organization

# CHAPTER ONE

## THESIS INTRODUCTION

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### 1.1 RESEARCH CONTEXT

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This study examines the agro-exportation boom in Peru, its impact on marginal urban groups and their access to water resources. Peru's agro-export boom began in the 1990s after the country went through widespread neoliberal, or free-market, reforms initiated by President Alberto Fujimori. This thesis explores these reforms and analyses how they have removed the state from resource management, allocation, planning and regulation (Rendon, 2009). As will be shown, at the core of neoliberal development approach in Peru, and in other parts of Latin America, is the imperative that economic development is best achieved by exploiting their 'comparative advantages' in natural resources (Murray, 2009). According to neoliberal thought, the most efficient way to accomplish this is through economic liberalisation and the reduction of state regulation in order to promote investment (Arellano-Yanguas, 2008).

The promotion of non-traditional agricultural exports (NTAXs), particularly along the coast, has been an important part of Peru's neoliberal reforms which drove the sector's growth (Oré, et al, 2011). Agro-export expansion in Peru has driven economic growth since the 1990s pushing the country towards an 'economic transformation' from its previously bleak economic performance of the 1970s and 1980s (IEG/IBRD, 2010). This thesis, however, critically examines this liberalisation by questioning the implications it has had on the state's capacity to plan and regulate resources. Moreover, it explores neoliberal policies to discover whether they are connected to the recent over-exploitation and uneven use of natural resources in Peru. Additionally, the research observes inequality trends in Peru to determine if the country's recent macro-economic growth has been able to alleviate pre-existing inequalities or if it has instead further exacerbated them.

This thesis is centred on a case study which examines the development of the asparagus export industry and how it is affecting water availability for urban marginal groups in the Ica Valley of Peru. Fresh asparagus has been labelled as the 'start product' of the agro-export boom in Peru. It has experienced impressive growth rates since the late 1990s contributing to Peru's growing Gross Domestic Product (GDP) (Salazar, 2012). Moreover, the industry has

become a very important provider of employment in a country suffering from high levels of unemployment. The study focuses on the Ica Valley where nearly all of Peru's fresh asparagus is produced (Hepworth, et al, 2010).

This thesis nonetheless studies a negative side of the rapid and successful expansion of Ica's export asparagus industry. Asparagus production is driving the over-exploitation of Ica's groundwater due to the large-scale expansion of the agricultural frontier into the desert and the crop's heavy water demand (Cancino, 2010; Salazar, 2012; Bayer, 2010). This over-exploitation is pushing Ica to the brink of water crisis, and combined with pre-existent factors, is already generating water stress and unavailability in parts of the valley. Wider literature briefly highlights that some of the most affected groups in Ica are those living in marginal urban areas. However, the views and perspectives of this group in regard to Peru's water management changes and the asparagus industry have been somewhat excluded to date. This thesis attempts to fill this void to better understand how this group is being affected by Peru's neoliberal reforms and what perspectives they have in relation to the agro-export boom, water stress and management.

This study also applies dependency and structuralist ideas through the modern day case study of Ica's asparagus industry. While dependency and structuralism have their differences they are both critical of 'outward oriented' models, that is to say development based on macro-economic growth and exports when controlled by external interests, in similar ways. While these theories focused on older modernisation approaches this thesis demonstrates that they provide relevant critiques of the neoliberal model applied in parts of Latin America. Structuralist and dependency analysis is critical of liberalisation in Latin America, arguing that it only benefits the already wealthy as global and national economic systems are hierarchical and unequal (Kay and Gwynne, 2000). This thesis suggests that Peru's economic liberalisation and the development of the asparagus industry is an example of this. In particular, the study follows the resource curse argument. Resource curse argues that resource endowment can create uneven development and obstruct long term progress, especially in resource rich Latin America (Auty, 1995; Murray, 2009). At the local scale, this thesis investigates the possibility that Ica's comparative advantage in asparagus production represents a modern resource curse. It does so by exploring the type of development the industry has driven, the changes in resource distribution it has caused, and observes if marginal urban groups have been further excluded from water access and management processes. In doing so, this thesis formulates a

constructive critique of Peru's neoliberal model and its implications on marginal groups and resource management.

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## 1.2 RESEARCH AIM AND QUESTIONS

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### 1.2.1 Research Aim

To analyse how the Peruvian agro-exportation boom has affected marginal urban groups and their access to resources through a case study of the asparagus industry and its implications on water availability in marginal urban areas of Ica. Through this aim, the thesis attempts to deconstruct the urban-rural divide common in development studies by exploring the impacts of the agro-export sector on urban water availability.

### 1.2.2 Research Questions

In order to realise the research aim, this thesis has been separated in to four research questions as follow:

1. How have neoliberal frameworks influenced resource management processes and the development of the asparagus industry in Ica?
2. What have these neoliberal changes and the expansion asparagus exports meant for the management and availability of local water supplies?
3. How has asparagus export development and the related resource management changes impacted urban marginal groups; in particular, their access to water?
4. How have urban marginal groups responded to the problems they perceive to be related to the development of the asparagus export industry?

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## 1.3 THESIS OUTLINE

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This thesis has taken on somewhat of an hourglass form. It starts broadly with the overarching theories, then increasingly sharpens its focus when covering the research context until it reaches the specific case study at the local scale representing the slim midpoint of the hourglass. Following from this, the thesis begins to spread out again linking back to the larger theories in the discussion and conclusion stages coming to the other end of the hourglass. As such, the chapters are structured as follows: Chapter Two: *'Methodology and Methods'*, first describes the ways in which the research has been influenced, guided, and carried out. Chapter Three: *'Development and Underdevelopment in Latin America'*, serves as part one of the theoretical background of the thesis. This chapter discusses the grander theories of the thesis in the Latin American context. Chapter Four: *'Development and Underdevelopment in Peru'*, provides part two of the theoretical background. It discusses Peru's development and

traces this through historical and contemporary frameworks. Chapter Five: *'The World Agro-Food System and Peru's Asparagus Export Industry'*, explains how Peru has been integrated into the agro-food system, before outlining the development of Peru's asparagus export industry. Chapter Six: *'The Social and Environmental Impacts of Ica's Agro-Export Industry'*, provides part one of the research findings by discussing the implications agro-exports have had in the Ica Valley. Chapter Seven: *'Marginalised Voices: Views from Ica's Pueblos Jóvenes'*, constitutes part two of the research findings through the application of the larger themes of this thesis at local scale. This was achieved through case studies taken from Ica's marginal shantytowns, known locally as *'pueblos jóvenes'*. Chapter Seven thus displays some of the ways in which the neoliberal reforms have affected Ica's marginalised, and also provides some of the perspectives held by this population. Chapter Eight: *'Drawing from Ica: Connecting the Case Study to the Research Themes'*, serves as the analysis stage of the research and re-addresses the research questions or themes outlined previously before discussing some additional contributions of the work. The ninth and final chapter: *'Conclusions: Reflecting on Water in Ica'*, extends from chapter eight serving to conclude and evaluate this thesis. It does this by engaging with the overall research aim and linking back to the core theories of this thesis. Finally, chapter nine provides some practical contributions and policy suggestions in the areas of: short term emergency measures, the fostering of long term planning and sustainability, and the inclusion of civil society and marginal urban groups.



## CHAPTER TWO

### METHODOLOGY AND METHODS

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This chapter looks to set the foundations of the research by outlining the applied thesis methodology. It will begin by briefly describing the world view of critical realism which is the framework of the research. The following section explores the three central theories and approaches of the thesis; political ecology approach, structuralism, and dependency theories. The subsequent section will explain the research methods that were used and how the research areas and participants were selected.

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#### 2.1 WORLD VIEW AND THEORETICAL FOUNDINGS

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##### 2.1.2 Critical Realism Worldview

The research is grounded within a critical realist (CR) epistemology. Critical realists assume that there is a 'real world' and there is no way to prove or disprove this assumption (Easton, 2010). However, critical realists accept that our knowledge of this real world has been conditioned socially and is able to be challenged (Della Porta and Keating, 2008). CR is therefore 'located' between empirical analysis, which is blind to value judgements in research; and postmodernist approaches which, to varying degrees, reject empirical views of the world (Murray and Overton, 2003). CR encourages the selection of different research methods according to the research, hence rejecting a 'one size fits all' approach (Fleetwood, 2007).

As explained by Murray and Overton, our role in critical science research is to embark on the discovery of less explicit processes and connections and to frame these findings through moral questions which promote progressive social transformation (Murray, and Overton, 2003). CR is appropriate for my research as it requires a foundation which appreciates empirical data whilst acknowledging the importance of value judgments. CR in short provides a suitable and balanced worldview which enables me to effectively research the case of agro-exports and water resources in Ica by integrating empirical data with value judgements. This allows my research to frame moral questions and promote progressive social and institutional change while providing legitimate evidence to support these recommendations. This thesis investigates the inequalities experienced in Ica as a 'real truth' rather than socially relative constructions and thus, the thesis is change oriented. In line with this approach my research is also flexible in nature as alterations will be made when different ideas and priorities arise

while in the field. In a similar vein, this research will undertake a mixed-method approach, using both primary and secondary data to obtain and validate information.

### 2.1.3 Political Ecology

My research approach combines the socio-environmental concerns or ideas of political ecology approaches with inspiration from dependency and structuralist ideas which have been very influential in Latin American development discourses.

Political ecology is very useful in the joining of concepts, yet it is somewhat difficult to define. Political ecology is better seen as a specific lens to explore the interactions between the social and natural environments, rather than a coherent grand theory (Schubert, 2005; Bryant, 1998). As stated by (Bryant, 1998:80);

*“At the heart of political ecology research is the notion that politics should be ‘put first’ in the attempt to understand how human-environment interaction may be linked to the spread of environmental degradation.”*

In this sense, political ecology is a form of investigating ecological changes, access rights to natural resources, and the political and social implications of environmental change and vice versa (Franklin, 2004).

Interestingly, very different and sometimes opposing theories can use a political ecology lens in cases when human-natural interactions are being studied (Schubert, 2005). This demonstrates the importance of seeing political ecology as a way of investigation which can be applied with a vast range of theoretical backgrounds rather than a theory in itself. Political ecology therefore provides an effective lens in the study of human-environment interaction by placing emphasis on the social causes and implications of environmental problems. This is clearly appropriate when applied to my research in the Ica Valley. For instance, before understanding the causes and implications of the Ica’s unsustainable and unequal water use we must understand how human-environmental interaction is at the crux of these problems. Moreover, to better understand these human-environmental interactions we must also analyse human-human interactions, that is to say political relations in Peru. Accordingly, particular attention in this thesis has been paid to the networks of power and Peru’s neoliberal policies and how these interconnected processes have influenced water management in Ica.

#### 2.1.4 Dependency and Structuralist Theories

While political ecology provides a lens for investigating the human-environmental interactions in Ica, dependency and structuralist theories provide more of a theoretical foundation. The paradigms of dependency and structuralism have been historically central to the study of development in Latin America with many of the key perspectives coming from the region. Additionally, these theories have been very important in the critical analysis of development theories such as modernisation and neoliberalism in the region (Kay and Gwynne, 2000). Although there are a number of fundamental differences between the two theories, they are united in their proposal that historical context and economic and social structures must be considered in development. As will be explored in more detail in the following chapter, these theories thereby argue that classical and neoliberal free market approaches ignore the conditions which created and continue to reproduce underdevelopment in certain parts of the world (Santos, 1970; Frank, 1970; Prebisch, 1950). Structuralist and dependency theorists argue that while data is of course extremely useful, it needs to take into account the historical-structural context from where it is extracted (Cardoso and Faletto, 1979).

Dependency and structuralist ideas provide a theoretical understanding of the historic and current structures and processes occurring in Latin America and Peru at the regional and national and scales and in Ica at the local scale. This has been vital in the critical questioning of Peru's development model, prioritisation of resources in general, and the specific case of agro-export expansion and water availability in Ica. This thesis demonstrates the contemporary relevance of structuralist and dependency analysis and ideas.

Additionally, this research has used a mixed-method approach. The combination of quantitative and qualitative methods have been complementary and hence provided a solid understanding of the processes which are occurring in the field as well the significance of the data extracted (Hanson and Pratt, 2003).

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## 2.2 FIELDWORK AND METHODS USED

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### 2.2.1 Selection of Field Area and Definitions

During time spent in Peru in 2011, I became fascinated with the development issues in the country, specifically in the area of inequality. My interests in neoliberal approaches to development, the expansion of agro-exportation, and how these impact the social landscape lead me to research industries of importance in Peru. Within a very short time of searching it

was clearly evident that asparagus is a very important export product for Peru. As mentioned, this industry has stimulated economic growth in Ica while providing much needed employment, and is therefore sometimes labelled as a miracle boom of economic growth (Hepworth, et al, 2010).

However, I discovered there is also a negative side to this expansion when I came across a report; 'Drop by drop: Understanding the impacts of the UK's water footprint through a case study of Peruvian asparagus' by Hepworth, Postigo, Güemes Delgado, and Kjell, of Progreso, Centre for Peruvian Social Studies or *Centro Peruano de Estudios Sociales* (CEPES) and Water Witness International (2010). This comprehensive report introduced me to the water issues faced in Peru's main asparagus production area; the Ica Valley. With further investigation it became apparent that marginal urban groups in the young towns, or *pueblos jóvenes*, surrounding the city of Ica fell into a research gap and with this I decided that Ica was a suitable area to undertake my research.

Due to a lack of clear and comprehensive definition to exactly what an urban marginal group represents, I have decided to devise and apply my own definition. In this thesis the term *marginal urban group* refers to a group which resides in an urban area yet is excluded from the resources, services, and consultations enjoyed by wider society and are discriminated against based notions of social class or ethnicity. This thesis considers an urban area to be a locality with a high population density, while the rural represents everything outside of this area.

The Ica Valley and city are located to the south of Lima in the region or department also called Ica. On the map below I have labelled Ica with a red arrow and Peru's capital Lima with an orange arrow. The districts of Santiago, La Tinguiña, Guadalupe, Pachacutec and San Martín were selected as case studies with the help of the Human Rights Commission of Ica or *Comisión de Derechos Humanos de Ica* (CODEHICA) while the marginalised towns studied within these districts were selected with the help of the local councils. These districts and towns were selected as they all suffer from chronic water problems.

**PLATE 1: POLITICAL MAP OF PERU**



Plate 1 shows the field area Ica, represented with the red arrow, and Peru's capital city Lima, indicated with the yellow arrow. Source: Instituto Geográfico Nacional del Perú (Accessed, 2012).

### 2.2.2 Literature and Data reviews

The initial stage of my research attempted to gain an in-depth understanding of the historical and social contexts and the issues present within the field. The development challenges encountered in Latin America, and more specifically Peru were studied in order to provide background for the research. In addition, a literature and data review of the development of

the asparagus industry in Peru was undertaken, with the majority of this material coming from my time in Peru and from governmental data bases. Completing these reviews meant I was able to create a picture of the complex issues involved in Ica, as well as the varying perspectives surrounding the growth of Peruvian asparagus production and what this has meant for marginal groups. This included compiling required data, such as available information on water use and the development of the asparagus industry, as well relevant legal, institutional, and political changes. These reviews were critical in informing and setting the context for the later parts of the research and have been used throughout the thesis.

### 2.2.3 Semi-Structured Interviews

The primary data for research came from three different interview schedules which were divided into three distinct groups.<sup>3</sup> These interviews were semi-structured giving the participant the opportunity to voice their opinions while retaining some structure in order to find common themes and ideas for analysis and reducing the problem of the language barrier. Connections with local universities, community organisations and NGOs in Lima and Ica assisted me in finding research participants. As will be noted, the names of the research participants have remained completely confidential in order to protect their identity and these participants are protected under Victoria University's Human Ethics Policy. This was explained to the participants before the interviews were conducted and participants had the ability to withdraw from the project until 01/01/13. Before an interview could take place consent forms were signed and an information sheet was left with the participant with my contact details if they had any further questions or concerns. As the situation in Ica is at times tense and polarised, I made all possible efforts to keep my participants confidential. When participants are referenced in this thesis it is by number. For example, RP1 stands for Research Participant 1, along with a group code:

- CSG – Central Study Group,
- EG – Expert Group,
- FPG – Farmer and Processor Group.

#### ***Central Study Group – Marginal Urban Groups***

Participants were selected through visits to the marginal areas with help from community leaders from each area. We aimed to select a range of participants for interviews including

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<sup>3</sup> Note: Two interviews and consent forms were conducted via email due to logistical reason. These interviews were (RP30-EG and RP55-FPG), see appendix 1 for summaries of these participants.

female and male, Ica born and migrants from other parts of Peru. These participants answered basic question relating to their economic and family situation, their experiences and concerns pertaining to water, and their opinions surrounding the agro-export/asparagus industries and water management in Ica. This group consisted of 26 research participants.

#### ***Secondary Study Group – Experts***

Interviews were undertaken with a somewhat broad group I labelled as ‘experts’. This group included: university and independent academics, employees of non-government organisations (NGOs), representatives of government organisations, employees of private organisations and various other specialists in the fields of water, agriculture and marginal groups. This group answered questions relating to their connection to the research, opinions and knowledge around neoliberal development and the management of resources in Peru and Ica, and the inclusion of marginal groups in the management of water. This group consisted of 23 participants.

#### ***Third Study Group – Agricultural Group***

I also carried out interviews with participants connected to the agricultural sector, this included owners and representatives of farms (both asparagus and other products), processing plants and agricultural engineers. These interviews discussed the specifications of farm operations and exports and issues relating to water use in the valley. Unfortunately this group only consisted of 10 research participants as producers were reluctant to discuss the water problems. All of the largest asparagus producers declined to take part in the interview or give data. The closed off attitudes displayed by the large producers illustrates the polarisation and breakdown in communication that exists in Ica.

#### **2.2.4 Field Research**

My field research involved five and a half months between May and October 2012. The research period was two months longer than planned due to health issues, however, this allowed me to further improve my Spanish. The majority of my time was spent in Ica where most of the interviews were completed and data was collected from various sources. Time was also spent in the capital of Lima where I made the most out of a contact of my supervisor in the university, *Pontificia Universidad Católica del Perú* (PUCP). This contact connected me with a senior academic in the university who has undertaken many investigations about water and Ica and is currently working on a multidisciplinary research project on the effectiveness of water management in Ica. Through this university I made a number of contacts for interviews

and gained secondary resources. I was also fortunate to attend a number of events relevant to my research in the university.

In Ica contacts were made and research participants found through various means. My first point of call was with the local NGO CODEHICA where staff assisted me to locate areas to focus my interviews, and provided data through interviews and secondary sources. Again I was fortunate to be invited to some of their events where I was able to find research participants for both the central and secondary study groups. Following this I made contacts in the local university Universidad Nacional San Luis Gonzaga de Ica. There, I was introduced to a student who assisted me in my research throughout my time in Ica. Together we visited the *pueblos jóvenes* as well as the government and private organisations. Other contacts and participants were generally made through the 'mining' of my contacts I established in Lima and Ica, while some purely came from chance meetings and from 'friends of friends' arrangements.

In addition to PUCP, CODEHICA and CEPES, a significant amount of secondary data was collected in Ica from the Local Administration of Water, or *Administración Local del Agua*, in Ica (ALA), the Ministry of Agriculture and the local Company of Public Potable Water and Sewage of Ica or *Empresa Municipal de Agua Potable y Alcantarillado de Ica* (EMAPICA).

#### 2.2.5 Language

All of the interviews were conducted in Spanish. While I am not completely fluent in the language I am at a conversational level and was able undertake the interviews. Additionally, the semi-structured nature of the interviews assisted in minimising any potential language barrier issues. I also brought a copy of the questions to the interviews so that in the case of any confusion the participant could read the questions to clarify what was being asked. Voice recordings of all the interviews were made after permission to do so was given by the participant. These recordings were then translated into English and then processed. I decided to use the English translation when possible; however in some cases a Spanish term is instead used and printed in italics. This was the case when an English translation simply did not exist or when a translation failed to adequately portray the Spanish term. Translated quotes from the research participants are my own translations throughout this thesis unless otherwise stated. A glossary of Spanish terms is located at the beginning of this thesis.

#### 2.2.6 Positionality and Self-Critical Reflection

Self-critical reflection and attempting to understand my own positionality were guiding principles of the research. Self-critical reflection forced me to question my preconceived



thoughts and to make sure the research was conducted with high ethical standards (Chambers, 2008). Central to this was applying 'do no harm' principles to the research. As such, respect for research participants and protecting their anonymity were paramount throughout the research.

As a university student from a different country I was positioned as an outsider especially when undertaking interviews for my central study group in the *pueblos jóvenes* (Sidaway, 1992). It was therefore important to establish with my participants the best relationships of trust as I possibly could in the limited time available. Building trust between the researcher and the researched is useful to avoid purely extractive research and allows the process to become more of a two-way and rewarding experience (Chacko, 2004). I built trust through making contact with local community leaders who helped me find contacts that were happy to be interviewed. By doing this I was able to use the relationships of trust these community leaders had with the local populations. A social activist in Ica and a respected member within much of the farming community provided me with his contacts and I was able to use pre-existing relationships of trust to find farmers who were willing to be interviewed. In the professional and academic settings there were few problems in finding willing participants. Some were interested in why I had chosen Peru as a place to study and I was always more than happy to explain my interest in development and underdevelopment in Peru and Latin America. Moreover, making contacts through NGOs and the universities in Lima and Ica helped to break down my position as an 'outsider' doing research.

## CHAPTER THREE

### DEVELOPMENT AND UNDERDEVELOPMENT IN LATIN AMERICA

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This chapter outlines the theories central to development and underdevelopment in Latin America. The first section will look briefly at the high levels of inequality in Latin America and what this means for overall human development in the region. The following section will then explore the theories of dependency and structuralism and discuss their relevance in contemporary studies. The third section will examine the implications neoliberalism has had on development throughout the region. The final section will discuss the close relationship between resources and conflict in Latin America. The investigation of these ideas provides a solid theoretical background which can then be applied while exploring the social implications of agribusiness expansion on urban marginal groups in Ica, Peru. These theories create a better understanding of the complex processes and relations involved in Ica which are increasingly impacted on by the neoliberal approach to development.

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#### 3.1 INEQUALITY AND UNDERDEVELOPMENT IN LATIN AMERICA

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It is widely recognised that Latin America is the most unequal region on the globe and that these inequalities have profound impacts on development in the area (Hoffman and Centeno, 2003). An understanding of the relationship between underdevelopment and inequality is crucial in understanding the development problems that exist in Latin America.

According to the United Nations Development Programme, 10 out of the world's 15 most unequal countries are located in Latin America and the Caribbean (UNDP, 2010). For example the Gini coefficient - which measures income inequality - shows that inequality in the region is 65 percent higher than in high-income countries and 36 percent higher than East Asia (UNPD, 2010).

While Latin American countries are labelled as middle income countries under the UN Human Development Index (HDI)<sup>4</sup>, the collective figures used fail to show the inequalities (UNPD,

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<sup>4</sup> The UN human development Index measures, in each country, the average achievements for the population in the dimensions of health, education and income (see UNDP Regional Human Development Report for Latin America and the Caribbean 2010 'Acting on the future: breaking the intergenerational transmission of inequality' from [www.undp.org](http://www.undp.org))

2010). This can have dramatic implications for meaningful human development. For instance, as stated by the UNDP (2010:25);

*“Two countries with the same HDI can have very different social configurations: while one might be moving toward the full realisation of the potential achievements of all its citizens, in the other, achievements may be very unevenly distributed, a situation which may entail considerable limitations for attaining full human development for the entire society.”*

Hoffman and Centeno (2003:366) argue that *“...if the level of inequality was the same [in Latin America] as in countries with comparable rates of development, the poverty rate would be halved.”* This illustrates that while growth can reduce poverty, it is the high levels of inequality, rather than a lack of growth, which most hinder poverty reduction within the Latin American context (Hoffman and Centeno, 2003).

### 3.1.1 Inequality and Society

By definition, inequalities impact upon different groups of society in different ways. The inequalities between different groups, be it people of different gender or ethnic background, combine to form direct and negative implications for human development (UNDP, 2010).

The UNDP's gender related development index (GDI)<sup>5</sup> and the gender empowerment measure (GEM), both show that inequalities between men and women are a problem throughout the region (UNDP, 2010). GDI shows that women are negatively represented in dimensions of life expectancy, income and education (UNDP, 2010). GEM indices show that in the areas of political and economic decisions, access to professional opportunities, and control of financial resources, Latin American women are more likely to be excluded (UNDP, 2010; Hoffman and Centeno, 2003). Women are also more likely to work in the informal sector than men, meaning they are at greater risk of missing out from social security whilst facing greater levels of vulnerability (Márquez and Prada, 2007). This is of course a great concern for the women already living in poverty.

There are also significant inequalities between different ethnic groups. Indigenous and African descendants are under-represented in high-paid employment and higher education, while being over-represented in poverty statistics in Latin America (Hoffman and Centeno, 2003, UNDP, 2010).

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<sup>5</sup> GDI is a component of the UN human development index

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## 3.2 THEORIES OF LATIN AMERICAN DEVELOPMENT

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As discussed previously, this thesis has been inspired by structuralist and dependency theories. These theories were primarily conceptualised in Latin America and are critical to understanding development and underdevelopment in the region. This section will therefore discuss these theories in greater detail.

### 3.2.1 Alternative Approaches to Latin American Development: Structuralism

Structuralism in Latin America began in the 1950s and is principally attributed to economist Raul Prebisch and his associates at the United Nations Economic Commission for Latin America in Santiago, Chile. Structuralism is grounded in conventional capitalism, but it proposes that free market capitalist approaches to development are inappropriate in Latin America (Prebisch, 1950).

The crux of the structuralist argument is that free market theories are not applicable in Latin America since they ignore the international relations and structures between what are commonly known as 'developed' and 'less developed' countries. They also ignore the different historical contexts and social structures present in the developing world (Kay, 1989).

The structuralist perspective proposes a 'core' and 'periphery' world model, whereby the core is the developed world while the periphery is the less developed world. Raul Prebisch recognised a dependency on primary products which existed in the periphery but not in the core, which is able to produce value added products (Prebisch, 1950). This dependence on primary products generates long-term deterioration in terms of trade in the periphery as it is disadvantaged against the industrialised core (Prebisch, 1950).

Structuralism attempted to initiate change in the development focus, identifying the problems with 'externally focused development' and arguing for the need of 'internally focused development' (Prebisch, 1981). In essence, the argument is that the development problems suffered in Latin America cannot be solved externally through market liberalisation (Prebisch, 1981). This promoted the role of the state and the import substituting industrialisation (ISI) experiment which attempted, with some localised success, to push industrialisation.

### 3.2.2 The Development of Dependency Theories

Dependency theories were conceptualised in the 1960s due to the perceived failings of structuralism. Dependency theorists argued that the ISI policies prescribed by structuralism had actually increased the extraction of wealth from the periphery to the core through the expansion of Transnational Corporations (TNCs) (Kay, 1989).

Whilst dependency theories bring vast perspectives, the most influential approaches were inspired by Marxism. These approaches took on the language of structuralism, describing the world as cores and peripheries. However, this core-periphery model was extended into a world system theory where countries were analysed through their links of exchange rather than in isolation (Frank, 1966). This system of exchange is capitalism, which according to dependency theorists, creates and thrives on unequal power relations and exchanges (Frank, 1970; Dos Santos, 1970) .

Dependency theories essentially analyse the inequality of power between the core and periphery which allows the centre to control the periphery (Frank, 1966). Dependency theories state that the relationship of exploitation inherent to capitalism allows the core to develop and by doing so creates underdevelopment in the periphery. Andre Gunder Frank (1970:1178) proposed this when he said development and underdevelopment “...are really the opposite sides of the same coin.” This was a direct critique of Rostow’s and associated modernisation theorists’ ‘development continuum’ ideas<sup>6</sup>. According to dependency theories, underdevelopment ensues when the dominant core extracts surplus value from the periphery by exploiting peripheral labour (Frank, 1970).

In addition to this, the colonial and neo-colonial structures in peripheral countries drive the process of underdevelopment. In line with dependency theory, the colonial relationship between the core and periphery established a dependent ‘bourgeoisie’ (upper classes) and an exploited ‘proletariat’ (working classes) within peripheral countries (Dos Santos, 1970). This bourgeoisie controls resources in the periphery and depends on foreign capital, therefore, having little interest in pursuing policies which equally share development thus producing further underdevelopment (Dos Santos, 1970).

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<sup>6</sup> For the development continuum see; Rostow, W. (1960). *The Stages of Growth: An Anti-communist Manifesto*. Cambridge: Cambridge University Press.

Central to these ideas is the argument that the periphery's dependence on the core does not only result in an extraction of wealth from the poor to the rich, but also creates a colonial system within the peripheral countries (Dos Santos, 1970). This means the periphery is unable to produce enough productive capital to be able to generate development (Dos Santos, 1970; Frank, 1966). The only solution to underdevelopment within the Marxist strand of dependency is the revolutionary overthrow of the capitalist system (Frank, 1974)

### 3.2.3 Commonalities and Relevance of Structuralism and Dependency Theory

The critique of free market development by structuralist and dependency theories remains important and enduring. Both theories shared a view that modernisation was unable to understand or deal with the developmental issues in Latin America (Kay and Gwynne, 2000). In contemporary studies this critique remains relevant. Neoliberal models argue that further liberalisation of the global economy is required to benefit the developing world. In the view of structuralism and dependency, further liberalisation will benefit the already powerful as the world economy is a hierarchical and asymmetric power system favouring the core and elite (Kay and Gwynne, 2000). This provides a relevant criticism of neoliberal development especially for the Latin American experience.

Many of the predictions made by structuralist and dependency theorists have come into fruition. These include the widening wealth gap experienced in Latin America following the neoliberal Structural Adjustment Programmes (SAPs). Also, the rapid economic growth in East Asia showed the importance of developmentalist states and their role in promoting development which supports the structuralist approach (Kay and Gwynne, 2000).

What is particularly relevant to this thesis is the ways in which structuralism and dependency approaches can be used to analyse neoliberal development. It is the aim of this thesis to explore how power relations and neoliberal changes have affected resource use and access. Certain questions need to be asked; such as, is development in Ica relatively equal? If not, who is benefitting and who is paying the price of this neoliberal development? Structuralist and dependency theories are useful as they allow me to observe the structures and power relations present in Ica and how these have formed development there.

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### 3.3 RESOURCES AND NEOLIBERALISM IN LATIN AMERICA

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The following section will explore in more depth the neoliberalism which is the dominant paradigm in parts of Latin America, and its relationships with development, resource exports and socio-environmental change.

#### 3.3.1 Latin America and the Neoliberal Paradigm

Since the 1970s and 1980s, certain Latin American countries have steadily replaced their inward-oriented development strategies for outward models, based on further integration into the global market and the withdrawal of the state driven by the neoliberal paradigm (Kay, 1997). Any study into contemporary development in Latin America must understand how this paradigm developed and what it seeks to achieve. As defined by Murray (2009:379);

*“Neoliberalism is an economic, political, and it can be argued, cultural paradigm, which is all but hegemonic at the governmental scale across the globe. Echoing back to early capitalist thinking, neoliberalism argues that governments fail inherently.”*

According to neoliberal thought, state intervention lessens the efficiency of the capitalist market which in turn decreases the potential for economic development (Baer and Maloney, 1997). There is the belief within neoliberalism that market liberalisation is desirable as it will increase trade and encourage foreign investment, eventually maximising global welfare (Murray, 2009). It is this theoretical background which established the large scale withdrawal of governments having massive implications across the global and in Latin America in particular.

This raises the question; why has neoliberalism been so influential in parts of Latin America? The debt crisis of the 1980s was felt especially hard in Latin America and as a result the SAPs were the most far reaching there (Kay, 1997). The SAPs attempted to stabilise the balance of payments and foster economic growth in the region (Barham, et al, 1992). According to neoliberal thinking this could best be achieved by widespread liberalisation (Kay and Gwynne, 2000). The imposition of these SAPs can be seen as the catalyst for the spread of neoliberal policies throughout Latin America (Kay and Gwynne, 2000). This, in conjunction with aid conditioned by neoliberal policies, asserted the dominance of neoliberalism over alternative theories, such as dependency and structuralism in the region (Murray, 2009).

These SAPs signified increased neo-colonial relations as developing countries surrendered high levels of economic and political independence to external actors (Kay and Gwynne, 2000; Murray, 2009). The region has suffered some of the most striking and negative implications of the neoliberal approach due to the large scale of the debt crisis and the SAPs in Latin America. The combination of the SAPs, which brought austerity measures, and the high levels of debt, led to what has been labelled as a 'lost decade of development', where development was seen to be regressive. In this 'lost decade' the GDP in most of Latin America fell while inequalities and poverty rates grew and the precarious informal labour market expanded (Kay and Gwynne, 2000). Following from this, SAPs are often criticised for disproportionately impacting upon vulnerable groups and ignoring environmental concerns (Murray, 2009)

### 3.3.2 Latin American Non-Traditional Exports and Neoliberalism

As mentioned, the debt crisis of the 1980s reoriented the development focus of Latin American countries to outward-looking development strategies. An important part of this neoliberal reorientation was the exportation of products which countries have a comparative advantage in. In parts of Latin America this led to the development of NTAXs industries which were promoted by international financial institutions (such as the IMF and the World Bank) and aid agencies (Barham, et al, 1992). The basic premise is that Latin American countries can gain a comparative advantage by specialising in the export of natural resources which they can produce efficiently in relation to others. Following this argument, in the long term, specialisation as well as liberalisation of the global economy would encourage improved overall productivity, allowing greater economies of scale and increased competition to the betterment of all (Barham, et al, 1992; Murray, 2009).

A particularly compelling critique of comparative advantage is that long term growth based on the exports of primary products generates problems (Murray, 2009; Barham, et al, 1992). According to Murray (2009:382); the exploitation exclusively of primary and agricultural products can result in; *"...declining long-run terms of trade, Dutch disease (overvalued exchange rates), the evolution of enclave economies, and vulnerability to commodity boom and bust cycles..."* These relate to the structuralist concerns first outlined by Raul Prebisch and his colleagues.

Of similar concern is what is known as the resource curse thesis or argument. As summarised by Auty (1995:258); *"Resource curse refers to the process by which a bountiful natural resource endowment proves a handicap to development rather than a blessing."* This essentially argues



that possessing large quantities of resources can hinder development by creating over-reliance and an uneven sharing of the benefits of resource exploitation (Auty, 1995). This is an important criticism of neoliberal assumptions, raising questions as to whether the commodity boom in Latin America will actually impede the needed changes in development strategies for long term and holistic growth (Murray, 2009).

A final concern involves the socio-environmental implications of the growing of NTAX industries. The development of 'non-traditional' exports often has negative impacts on environmental sustainability as rapid growth often ignores or down-plays environmental concerns (Barham, *et al*, 1992). As illustrated in a number of studies, the promotion of NTAX has created widespread environmental degradation and natural habitat destruction through excessive use of chemicals and deforestation (Williams, 1986; Leonard, 1987; Hoppin, 1989). In addition to this, NTAX expansion has created human displacement and health issues as well exacerbating local inequalities (Douglas and Hoppin, 1990; Barham, *et al*, 1992; Kay, 1997).

However, a void in the literature exists at this point. Many critiques based on the resource curse focus on the problems of resource exploitation. However, little work has been done on the indirect effects of this exploitation, such as implications for urban areas. The important links between urban issues and neoliberalism in the rural sphere have been greatly overlooked. This thesis seeks to at least provide a starting point for such a discussion in an attempt to break down the urban-rural divide in studies of development.

### 3.3.3 Agricultural Reforms and the Rural Society

The Latin American region has long experienced agricultural and rural land reforms creating dramatic changes in the rural sphere. Early reforms throughout the 20<sup>th</sup> century attempted to break-up the inefficient large estate, or *hacienda* system and to promote productivity. Moreover, the attempt to break up the *haciendas* was to reduce land and resource concentration in order to encourage political stability (Kay, 1997). These reforms were also seen as a way to overcome the national market and foreign exchange limitations impeding the industrialisation process in the region (Kay, 1997). As discussed, the 1980s (and the 1970s in the case of Chile)<sup>7</sup>, witnessed a change from this inward approach of development to an acceleration of neoliberal globalisation through neoliberal reforms (Gwynne and Ortiz, 1997; Murray, 2002). As this thesis will explain - through the case of Peru - neoliberal land policies

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<sup>7</sup> For an in-depth study of neoliberalism in Chile see; Kay, C. (2002). Chile's Neoliberal Agrarian Transformation and the Peasantry. *Journal of Agrarian Change*, 464–501.

have tended to reverse the older land reforms leading to the re-concentration of land and resources. This has been principally caused by the removal of restrictions on ownership (Cancino, 2010; Murray, 2002).

Some researchers argue that agricultural reforms have departed greatly from the original purposes established in the 1960-70s, and the drive behind reform is now to modernise and capitalise the *hacienda* system rather than focusing on the equal distribution of land (Kay, 1997; Gwynne and Ortiz, 1997). Research shows that this process is exacerbating rural inequalities by widening the gap in economic power between large and small scale farmers (Murray, 2006). Furthermore, the peasant farmer, or *campesino*, sector has been increasingly unsupported by the state while their rapid integration into the global market has made them particularly vulnerable to market forces. Additionally, peasant farmers in different parts of Latin America are being progressively locked into asymmetric contract relations with agribusinesses<sup>8</sup> (Murray, 2006). At the same time, agribusinesses, which are often internationally owned, have ironically been able to find support through systems of tax exceptions and incentives (Gwynne and Ortiz, 1997). Those who have benefitted from the neoliberal approach to development have been only those who had the capital to take advantage of the NTAX expansion, hence, creating very unequal rural development (Kay, 2002).

#### 3.3.4 The Emergence of Neo-Structuralism

It is important to mention that the failings of neoliberalism discussed previously resulted in the emergence of the neostructuralist approach from the 1990s. Neostructuralists still stress the structural and internal economic problems in Latin America, yet, have an altered view on the appropriate roles of the world economy and the state in development (Bidwell, 2011). These approaches attempt to foster more equal and inclusive development through the integration of diverse national industries into the global economy. Neostructuralist theorists thereby promote the importance of the State in directing their national economies to be more competitive (Sunkel, 1993). Like structuralist and dependency theories, neostructuralist approaches acknowledge the social and environmental issues caused by large scale industrialisation (Bidwell, 2011). However, similar to neoliberal approaches, neostructuralist

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<sup>8</sup> The contracts between agribusiness and peasants are often asymmetrical as the agribusinesses are able to exert their dominant power to design the rules and regulations to their advantage. For examples of these asymmetric contracts relations (in a Chilean context) see; Murray, W. E. (2006). Neo-feudalism in Latin America? Globalisation, agribusiness, and land re-concentration in Chile. *The Journal of Peasant Studies*, 646–677

policy seeks to promote development through the expansion of non-traditional industries and greater integration in the global economy. According to neostructuralist proponents, a key difference to neoliberal approaches is that neostructuralist policies promote value-added production rather than purely extractive exports. This creates larger links to the local economy and allows for greater integration of marginalised groups (Murray and Silva, 2004; Bidwell, 2011).

The neostructuralist approach, however, has not gone without criticism. According to Kay and Gwynne (2000:61), *'Some authors have dismissed neostructuralism as being merely the human face of neoliberalism and its second phase.'* A central concern is that the neostructuralist approach has abandoned the ideas of re-distributing the economic surplus as propounded by earlier structuralist models (Leiva, 2008; Bidwell, 2011). In line with this critique, neostructuralist thought has been criticised for ignoring the social inequalities and unequal power structures which exist. Some authors argue that while neo-structuralism is more holistic than neoliberal approaches, it also symbolises an important academic and practical retreat of critical thinking in Latin America (Leiva, 2008).

On the other hand, a positive implication of neostructuralist thought is that it challenges the state to learn from past failings and actively promote more inclusive and equal development through facilitating and but also regulating the market (Kay, 1997).

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### 3.4 RESOURCES AND CONFLICT LATIN AMERICA

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#### 3.4.1 Agricultural Reform and Conflict

Throughout the developing world competition over resources remains an important issue and one which can create confrontation. Of specific importance to my research is the relationship between agricultural land reform and conflict in Latin America.

Interestingly, the past few decades in Latin America have been the most violent period of the 21<sup>st</sup> century. This leads to the question; what has created this period of unrest? What comes to mind are *campesino* revolution groups and empowerment struggles. But evidence shows this has not been the case as the majority of conflicts have been oppressive from above (Kay, 2001). The purposes of such conflicts have been to reassert the power of the elite classes and have been especially prevalent when elite power has been challenged from below (Kay and Gwynne, 2000).

As argued by Kay (2001:742) *“Latin America's potential for rural violence is largely rooted in its unequal and exclusionary agrarian socioeconomic system...”* Countries with a more equal agrarian system witness less violence than characteristic in Latin America. What may be taken from this is that the structures which create the unequal distribution of land and power in the rural sphere need to change in order to reduce the violent confrontations witnessed there. The liberalisation and resulting re-concentration of resources through the neoliberal reforms have contributed to social unrest in the rural sphere (Murray, 2006). This links into the neostructuralist ideas that the state is needed to guide more inclusive rural development

### 3.4.2 Trans-National Corporations and Conflict

Ricardo Villarroel argues that the principle cause of environmental conflict in Latin America is the ways in which TNCs plunder natural resources (Villarroel, 2006). According to Villarroel (2006:32);

*“This process is characterized by handing over territory, granting tax exemptions, facilitating water right concessions and mining exploitation permits, obtaining cheap services generally provided by public funds, handling unprotected labour force and environment.”*

The motivation for profit drives the incentive to invest in industries which have good returns such as agro-exports and mining. As discussed, these industries often ignore the negative socio-environmental implications which their operations create. This has been exacerbated by a lack of government regulation which has been only further weakened by the neoliberal reforms (Arellano-Yanguas, 2008). Villarroel claims that self-servicing national governments allow plunder to take place by campaigning in favour of the interests of TNCs over meaningful development and social justice (Villarroel, 2006). However, as communities in Latin America are starting to better understand, the destruction TNCs are having on their environment, health and culture and economy, conflict in the region is beginning to arise (Villarroel, 2006).

This critique is a little simplistic in its description of complex relations and the different pressures involved in the exploitation of resources in Latin America. Evidence illustrates that in supposedly reformist governments such as the Morales and Correa regimes in Bolivia and Ecuador respectively the regimes gain political support through anti-extractive rhetoric but they now favour the extractive industries. This is because these industries provide government funding through taxes which these regimes require to fund their social policies (Bebbington,

2009). These examples contradict the view that all governments encourage the plunder of their resources solely for the benefit of the political elite.

The critique of TNCs does, however, hold some valid criticism of a possible lack of democratic process in Latin America. This would allow elite classes and TNCs to benefit from resource exploitation while ignoring lower classes and thus leading to confrontation.

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### 3.5 CHAPTER CONCLUSIONS

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My research is informed by this broad range of ideas which provide historical, economic, environmental, social and political perspectives on underdevelopment in the region. By gaining a greater understanding of theories we are better able to appreciate the complex processes and structures - both external and internal - which have driven unequal development in the region. Of particular relevance to this research are the criticisms of free market or neoliberal approaches in Latin America, and how these have exacerbated further pre-existing inequalities thereby perpetuating underdevelopment. My research seeks to uncover the indirect effects of neoliberal agro-export expansion by framing the ideas above in the case of the asparagus industry in Peru. While there is considerable research on the direct implications of agro-export industries, relatively little has been done on the indirect impacts of these industries. In addition, my research will link together issues of urban and rural development which are often treated separately in development theory and research. The following chapter will analyse underdevelopment in relation to the country of interest to this thesis, Peru.

## CHAPTER FOUR

### DEVELOPMENT AND UNDERDEVELOPMENT IN PERU

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This chapter explores Peru's development and underdevelopment. The chapter begins by giving an historical account of Peru's underdevelopment and its establishment as a resource periphery. This section also discusses Peru's colonial and neo-colonial statuses and explains how these have created and perpetuated inequalities. The following section will look at the recent macroeconomic growth achieved in Peru and how this was partly fostered by neoliberal reforms. The subsequent section will explore the ways in which Peru's neoliberal forms have reduced poverty but also worsened inequalities. Furthermore, this section will argue that Peru's neoliberal approach has only deepened the country's position as a resource periphery which is consequently re-producing the process of underdevelopment. The final section will take the time to look into the relationships between development and the water resources in South America and Peru with particular focus on the neoliberal reforms and unequal distribution.

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#### 4.1 UNDERDEVELOPMENT IN PERU: 'A BEGGAR SITTING ON A GOLDEN BENCH?'<sup>9</sup>

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##### 4.1.1 Spanish Colonialism and the Establishment of Underdevelopment

The colonisation of Peru, as with the rest of Latin America, established a set of exploitative social structures and relations. While these have continued to transform over the centuries they continue to influence the development and underdevelopment of Peru (Frank, 1966).

The establishment of a hierarchical system within the Spanish empire was seen as the natural order of things. The white Spaniard "caste" or class held certain rights, such as exemption from paying tribute whilst being able to hold elite positions in the colonial structure (Bidwell, 2011). The Spaniards exerted dominance over the Indians through the imposition of tribute and forced labour, though the Indians held juridical status which afforded them some legal rights (Friedman, 1984; Gelles, 2000). The mixing of Spaniards, Indians, and also of African

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<sup>9</sup> The phrase "a beggar sitting on a golden bench" was coined by influential Italian-born Peruvian geographer and scientist Antonio Raimondi; who commented that poverty exists in Peru despite vast natural wealth (seen in Berrios, R. (2007) 'Growth Without Development.' University of Pennsylvania, USA.)

slaves confused the colonial social system by creating a mixed group known as '*mestizos*'. According to Friedman (1984:49) this new caste formed

*"...the basis of a society graded hierarchically in terms of "whiteness". A quite complex system of discrimination based on caste was instituted which existed until the end of the colonial era (and informally to this day)."*

Both the Spaniards and the Indians regarded the *mestizos* as a "degraded race", and it was this disgruntled and growing mass that later formed the strength of the independence armies (Friedman, 1984). As discussed by dependency theorists, this colonial structure of hierarchy contributes to underdevelopment as the elite caste or class have little interest in encouraging national development (Dos Santos, 1970).

The conquest and colonial period also saw the establishment of Latin America as a resources periphery, supplying large quantities of gold and silver to Spain and Portugal (Frank, 1970). As the centre of the Spanish empire, Peru was at the heart of wealth extraction. Throughout Peru's colonial period the country supplied gold and silver to the Spanish Crown through the Callao port of Lima (Bidwell, 2011). The crown maintained control of the mining system in Peru through partial ownership and a monopoly over the mercury required for mining (Friedman, 1984). These mines operated through a highly exploitative system of forced labour imposed on the local Indian people, resulting in many overworking-related deaths. During this period the internal Peruvian economy remained very limited; mainly based on subsistence agriculture and forced labour which supplied the local market with commodities (Friedman, 1984). What was most important about this period was the structure of dependence and subordination distilled in Peru. This allowed for large-scale exploitation by elites, in both Spain and Peru, thus establishing the processes of widespread underdevelopment in Peru.

#### 4.1.2 The End of Colonialism and the Development of Underdevelopment

The Wars of Independence took place after a failed attempt by the Spain state, under the Bourbon dynasty, to re-concentrate its political and economic powers in Spanish America including Peru. This pitted colonial elites against the Spanish State as well as against each other leading to the eventual end of Spanish rule (Friedman, 1984). Peruvian Independence was declared in July 1821 by José de San Martín, but this was not recognised by Spain until 1879.

Following independence, the hierarchical systems established in the colonial period have continued to shape Peruvian society. The largest change was the status of the *mestizos* who, following the Wars of Independence, escaped their inferior placing in society with many acquiring wealth and power (Friedman, 1984). While modified, ideas around race remain strong in Peru. Western culture is seen by the governing elites to be superior whereas Indigenous or Andean culture is perceived as backwards or inferior (Rutgerd and Gelles, 2005; Herzfeld, 1992). Due to this cultural ranking, whereby indigenous culture is discriminated against, it is common for individuals of indigenous descent to forgo their cultural identity in order to improve their chances of achieving greater status. While this may assist the individual, it also helps to reinforce the stigmas that harm indigenous peoples in the first place (Gelles, 2000). Therefore, in contemporary Peruvian society, culture has taken the place of race or caste in an informal yet influential modern hierarchal system (Bidwell, 2011).

As with much of the rest of Latin America, post-colonial Peru has continued to function as a resource periphery for the core in Europe and later Northern America. Theorists, particularly those who contribute to dependency theory, argue that the end of formal colonialism has merely resulted in unequal neo-colonial structures which sustain underdevelopment (Frank, 1970; Dos Santos, 1970). The continuation of Peru as a resource periphery means the internal economic structure is based on rigid specialisation in primary products making very it susceptible to bust and boom cycles (Dos Santos, 1970; Thorp, 1987). For instance, directly after independence Peru witnessed a boom in the guano (fertiliser) industry, which then busted leading to a short term economic crisis. Peru would later experience similar booms and busts in sugar, cotton, copper, and fishmeal, among other industries. The inability of the state to deal with boom economies and the fact that the market cannot resolve the problems inherent in such industries has resulted in one economic crisis after another (Thorp and Bertram, 1978). In addition, due to Peru's neo-colonial structure the economic benefits of Peru's exports are channelled to the small group of elites.

#### 4.1.3 Military Coup and the Peruvian Structuralist Project

As mentioned, the Peruvian economy has suffered many crises resulting from boom and bust industries since the inception of its Independence. This is because the export model in Peru suffers from internal problems which make it ill-equipped to take advantage of expanding industries once the initial "easy phase" ends. These problems create a inability to diversify export production in Peru (Thorp, 1987).



A military coup in 1968 ousted President Belaunde, and Peru was administered by a 'Revolutionary Government of Armed Forces' headed by General Velasco Alvarado between 1968 and 1975. The military government attempted to reform the problematic structures following prescriptions of structuralism (Kay, 1982; Thorp, 1987). The military government recognised the problems apparent with land ownership in the *hacienda* system which became a pressing issue following *campesino* uprisings and strikes. This resulted in significant structural reforms in the agricultural sphere, which saw the redistribution of large amounts of *hacienda* land to *campesinos*, who were organised into collective groups. However, hope for these groups declined as they were later disadvantaged by national economic policies (Kay, 1982; Bidwell, 2011). Additionally, the military government nationalised key industries, such as transportation and communication, throughout its reign.

The military government implemented plans based on oversimplified and flawed analyses of the economic problems experienced in Peru (Thorp, 1987). Due to this, the structuralist experiment was unsuccessful there. Furthermore, the experiment never managed to assist Peru out of its subordinate position as a resource periphery. By 1975 its failings became clear as the country was suffering from severe external imbalance. This led to a right wing shift through President Belaunde, who had been president before the coup, and was re-elected in 1980. Belaunde followed prescriptions of the IMF by focusing on combating high inflation and balance of payment deficiencies rather than the boom and bust 'development crisis of Peru' (Thorp, 1987). Successive governments followed this model, becoming increasingly neoliberal over time while ignoring the structural problems experienced in Peru.

#### 4.1.4 Internal Conflict and Economic Decline

Prior to the 1990s, Peru suffered grave political and economic problems; including a declining economy and internal conflict. During the 1980s, Peru suffered high inflation and spending deficiencies leading to high external debt and economic decline. Successive governments, including the Belaunde and Garcia Regimes, failed to stabilise the economy or address the boom and bust problems experienced in Peru, resulting in further economic crises. These economic problems were part of the Latin American debt crisis which affected many countries in the region, however, Peru was impacted particularly badly. Throughout the 1980s Peru's economy had diminished every year by 1.5 per cent and by the 1990s Peru had defaulted on most of its International debt (IEG/IBRD, 2010). Additionally, policies encouraged by the IMF to combat these economic problems were seen to be socially costly due to their cuts pro-poor policies and services (Thorp, 1987).

Perhaps to some result of these social costs the Shining Path group began an internal conflict in the 1980s. The group used Maoist rhetoric about historical inequalities and grievances in an attempt to overthrow the government. While socialist in rhetoric, the group murdered many of Peru's Andean poor as well as members of left wing parties (Bidwell, 2011). The conflict resulted in what The Peruvian Truth and Reconciliation Commission (CVR) (2003) labelled as; *"...the most intense, extensive and prolonged episode of violence in the entire history of the Republic."* The CVR estimates that close to 70,000 people died in this conflict with the Shining Path being responsible for nearly half of these deaths. The government military and paramilitary groups were named to be responsible for the remaining deaths (CVR, 2003; Human Rights Watch, 2003). In 1992, Shining Path Leader Abimael Guzman was arrested by the Peruvian police which resulted in the effective end of widespread conflict in Peru and established a more peaceful environment which has continued, notwithstanding frequent social unrest, to the present day.

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#### 4.2 NEOLIBERAL REFORMS AND MACROECONOMIC GROWTH

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In 1990, Alberto Fujimori was seen as the country's saviour and was elected president (Manrique, 2006; Mauceri, 1995). President Fujimori quickly began rolling out neoliberal reforms after being elected, with the aim of fostering economic stability and liberalising the Peruvian economy. These measures included increased liberalisation of trade, cuts in subsidies, privatisation of government sectors, and reduced restrictions to private and foreign investment (IEG/IBRD, 2010).

The year 1992 proved to be an important period for Peru. As stated, it witnessed the capture of Shining Path leader Guzman which saw the demise of the movement. But also in the same year, Fujimori closed Congress and suspended the Constitution, resulting in a long lasting attack on Peru's already weak democratic system (Levitsky, 1999). For the following decade the Fujimori Government proved to be a repressive and authoritarian regime (Bidwell, 2011). In fact, Fujimori and other government members were later found guilty of committing a range of human rights abuses (IEG/IBRD, 2010; Human Rights Watch, 2003). This included Fujimori's advisor, Montesinos, who was linked to the infamous 'Colina' death squad which was responsible for massacres, assassinations and disappearances throughout the Shining Path conflict (CVR, 2003). Yet, it has also been claimed that the Fujimori Government helped foster a more stable business environment through large-scale liberalisation (IEG/IBRD, 2010). The

National Institute of Planning was also disbanded by the government in 1992 signalling the official opposition to long term state planning. Consecutive governments followed this model, seeing state planning as useless or even detrimental to development (Arellano-Yanguas, 2008). As will be explained, this has resulted in a lack of state regulation and government capacity.

Peru went through a large economic transformation, and has experienced solid macroeconomic growth since the beginning of the 1990s. Between 1993 and 2002 Peru's GDP growth rate averaged 4.6 per cent. This success was claimed to be a result of the neoliberal reforms (The World Bank, 2011). It is important to note that the most significant factor has been the unprecedented boom in mineral prices which has boosted Peru's GDP growth rates (Bidwell, 2011). Economic growth has continued throughout the 2000s with Peru's GDP growth rate remaining at over 6 per cent between 2002 and 2010. In 2008 this rate reached 9.2 per cent making it the 11<sup>th</sup> highest rate on the globe in that year. (IEG/IBRD, 2010; Hepworth., *et al*, 2010). From 2002 until the late 2000s successive governments have maintained neoliberal policies. This has furthered privatisation and upheld strict government spending limits, resulting in a stable macroeconomic environment with low inflation and a stable exchange rate (IEG/IBRD, 2010). In addition, an expansion in free trade agreements and further liberalisation has attracted higher levels of foreign investment, especially to mining but also in agriculture and manufacturing. In fact, Peru now has trade agreements with the U.S.A, Japan, and the European Union, among others (USTR, 2009; METI, 2012; ICTSD, 2011). This liberalisation and investment, in conjunction with high mineral prices, has allowed Peru's economy to expand greatly (Hepworth, *et al*, 2010). It therefore appears that Peru's neoliberal reforms have been successful in terms of macroeconomic growth. However, as will be discussed following this section, macroeconomic growth is not necessarily the best indicator of overall development as it can mask poverty and inequalities (RIMISP, 2011). Moreover, a critique of attributing Peru's growth to the neoliberal reforms is that similar booms in countries not following neoliberal development models, such as Venezuela and Bolivia, have experienced macro-economic growth during the recent resource boom (Bebbington, 2009).

#### 4.2.1 Peru's Export Expansion and Resource Reserves

As shown, like neoliberal programmes in other Latin America countries, a lot of Peru's macroeconomic success has been due to an expansion in the export of raw materials and commodities. Peru is endowed with abundant natural resources and, in line with the neoliberal approach, this provides the country with strong potential for economic growth (IEG/IBRD, 2010). For instance, Peru possesses abundant mineral and fishery resources and is a

leading exporter in both industries. In addition, the country's natural environments and culture heritage signify a strong tourism potential. The expansion of the NTAX sector is also providing economic growth (IEG/IBRD, 2010; Hepworth., *et al*, 2010).

These attributes, in conjunction with the withdrawal of the state and large increases in foreign investment, have encouraged booms in exports especially through the 2000s, making Peru one of the fastest growing economies on the globe (IEG/IBRD, 2010; Painter, 2007). Peruvian exports have expanded from an average of \$6.3 billion between 1998 and 2000, to an average of \$28.8 billion<sup>10</sup> between 2007 and 2009 with commodity goods accounting for more than half of the country's overall exports (World Bank, 2011). Nonetheless, as discussed in the previous chapter and as will be further discussed, economic growth based on resource exploitation often brings limited success and can even be regressive to development in a more holistic and long term sense.

#### 4.2.2 Growth with Inequality

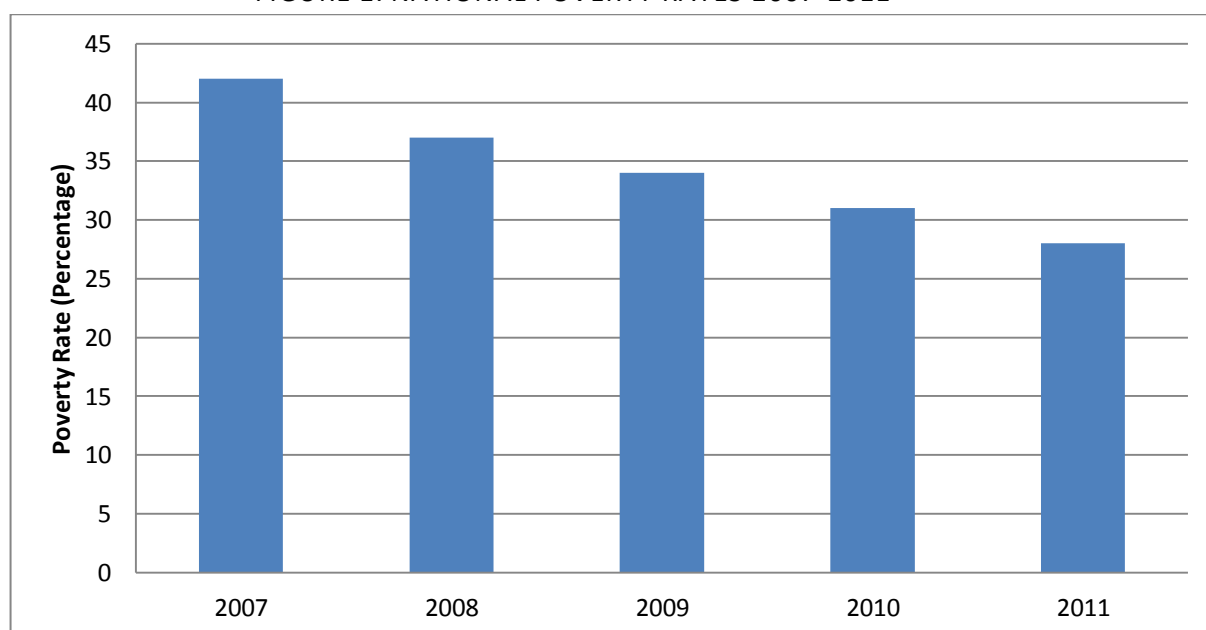
As explained, the neoliberal reforms started by the Fujimori Government and continued by successive governments throughout the 1990s and 2000s created an economic transformation in Peru. This transformation has brought some success in reducing poverty levels<sup>11</sup>. In 1990, the proportion of poor in Peru was at 55 per cent, while by 2002, poverty had declined to 50 per cent with additional improvements in health and education indicators (IEG/IBRD, 2010). Continuing economic growth during the 2000s meant that by 2007 the proportion of people living in poverty had dropped to 42 per cent (INEI, 2012). Figure 1, shown below, illustrates that between 2007 and 2011 poverty rates have dropped a further 33 per cent lowering to 28 per cent in 2011.

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<sup>10</sup> Values shown in U.S. Dollars.

<sup>11</sup> In Peru the official poverty and extreme poverty lines are monetary measures based on the income required to purchase a basket of basic goods and/or fulfil basic nutritional needs. If a person is unable to purchase a basket of basic goods they are living in 'poverty' and if they are also unable to fulfil their basic nutritional needs they are living in 'extreme poverty'. (See INEI. (2012). *Evolución de la Pobreza en el Perú al 2011*. Instituto Nacional de Estadística e Informática. At; [www.inei.gob.pe](http://www.inei.gob.pe)).

FIGURE 1: NATIONAL POVERTY RATES 2007-2011



Source: Elaborated by author, statistics from; Instituto Nacional de Estadística e Informática (INEI, 2012).

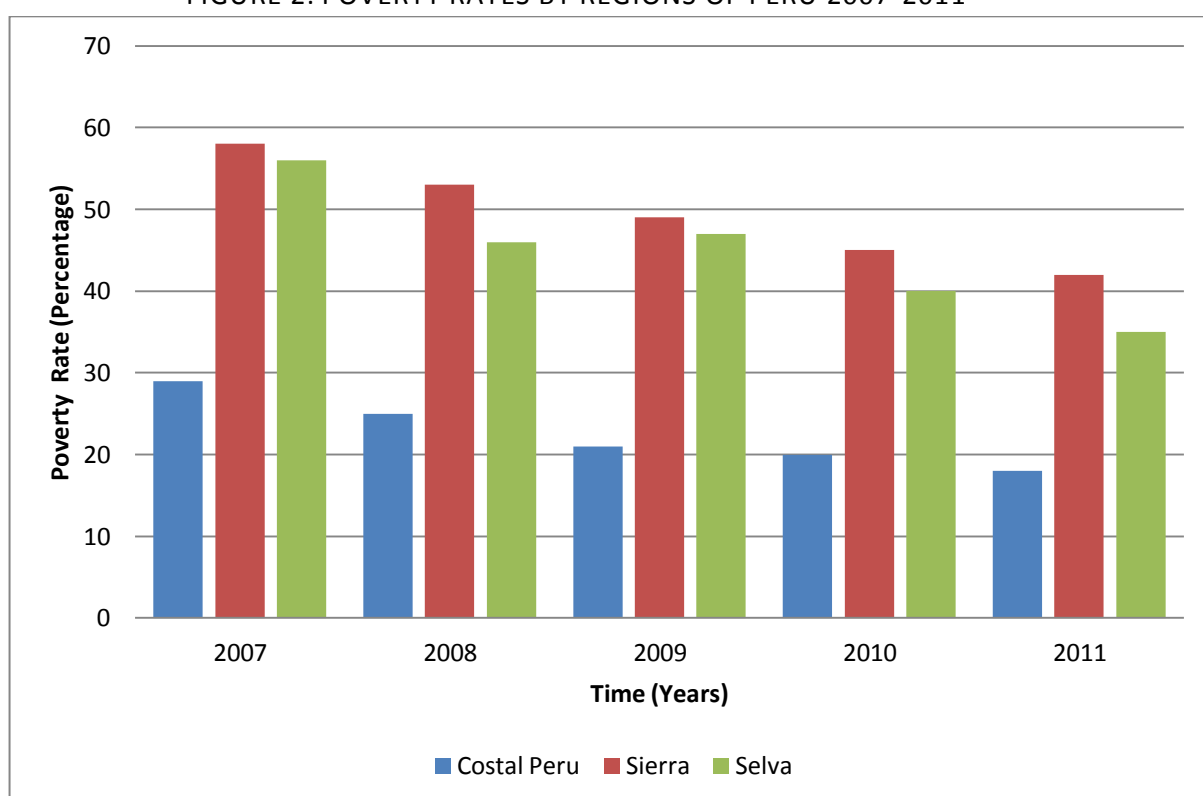
These statistics illustrate how the steady macroeconomic growth associated with Peru's neoliberal approach has had a positive effect on overall poverty reduction. However, they fail to show that poverty reduction has exacerbated pre-existing inequalities. Figure 2 shows that economic growth has helped lower poverty rates in all regions, yet the differing rates of decline across the regions has actually worsened historical inequalities. For instance, between 2007 and 2011 poverty decreased by 39 per cent in Coastal Peru and 37 per cent in the Amazon *selva* region but in the poorest region, the Mountain *sierra* Region, poverty was only reduced by 29 per cent (INEI, 2012). This meant that the area with the lowest levels of poverty has benefitted the greatest from the recent economic growth while the area with highest poverty levels has seen the least positive outcome.

Likewise, analysing the urban-rural divide demonstrates the challenges Peru faces in equally sharing the benefits of its healthy macroeconomic growth. For example, despite the fact that the national poverty rate dropped to 28 per cent in 2011, rural poverty remained to be double this at 56 per cent while urban poverty was relatively low at 18% (INEI, 2012).

Wealth inequalities in Peru are therefore continuing to follow geographic and cultural lines; with the *Mestizo* and European cultures being located on the coast and indigenous Andean culture in the Highlands (Hepworth., *et al*, 2010). As this section shows, the Andean rural poor have especially been neglected by the reforms, while benefits have been concentrated on the coast. It has therefore become evident that the benefits of macroeconomic expansion and the

benefits of sustained export growth have eluded man of those living in poverty (Berríos, 2007). It is clear that although economic growth and poverty reduction are closely related, Peru has not been able to strategise its growth in order to reduce inequalities. It is important to highlight that Ollanta Humala, the current President of Peru, was elected in 2011 promising to spread the benefits of Peru's economic growth to the poor (Painter, 2007). How well this spread will be achieved will only become apparent with. What is clear is that while macroeconomic booms have led to poverty reductions these reductions have been unequally distributed to date.

FIGURE 2: POVERTY RATES BY REGIONS OF PERU 2007-2011



Source: Elaborated by author, statistics from; Instituto Nacional de Estadística e Informática (INEI, 2012).

Moreover, this section reveals that Peru is likely to suffer from underdevelopment as long as it adheres to exclusionary development which leaves out the most vulnerable of society to benefit a wealthy minority. Neoliberal principles have only further deepened this type of development by promoting the exploitation of resources in a manner which mainly favours the elite and restricts the country to a resource periphery position.

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### 4.3 WATER RESOURCES IN SOUTH AMERICA AND PERU

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This final section will briefly explore the immense problems relating to water in South America and Peru. This section will first examine water problems at the South American level before outlining the specific water issues experienced in Peru. Following this, it examines the water implications of Peru's neoliberal reforms. To finish, the section will briefly explain how climate change is likely to exacerbate these problems.

#### 4.3.1 Water Stress at the South American Scale

The Southern American region suffers from somewhat of a water resource paradox: South America has some of the richest water resources on the globe as well as high per capita supplies, however, the region is also increasingly water stressed which is generating the potential for conflict (Jones and Scarpati, 2007).

The first problem faced by South America is that most of the water supplies are located in the Amazon *selva* region where very low percentages of the region's population live (Jones and Scarpati, 2007). This creates a raft of problems involving costly transportation of water to supply the more vastly populated areas of the Pacific and Atlantic coasts. The high rates of urbanisation in South America only exacerbate this problem as per person consumption of water increases radically in urban areas in comparison to rural ones (Jones and Scarpati, 2007). In addition, the problems associated with climate change<sup>12</sup> and water pollution further worsen water stress in South America (Chevallier, et al, 2003).

Water management is also a problem throughout the entire Latin American region. It has historically been top down, undemocratic and exclusionary (Castro, 2007). Poorer groups are thereby often excluded from the majority of water management decisions and suffer the most from unequal water distribution. This exclusionary system, in conjunction with rapid urbanisation, industrialisation and water privatisation debates, has, unsurprisingly, worsened previous conflicts and generated new ones throughout region (Castro, 2007).

#### 4.3.2 Water Stress at the Peruvian Scale

Peru also suffers from a water paradox problem. It possesses large reserves of water yet it is also one the most water stressed nations in Latin America. This section seeks to explain why

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<sup>12</sup> For an exploration into the localised predictions of climate change see; Chevallier, P., Pouyaud, B., Suarez, W., Condom, T. (2003). Climate Change Threats to Environment in the Tropical Andes: Glaciers and Water resources. Reg Environ Change, 179–187.

this is the case. Physical geography is the beginning of Peru's water issues. As illustrated by Hepworth, *et al*, (2010);

*"70 per cent of Peru's population of 28.7 million people live along the dry Pacific coastal strip, west of the Andes watershed. This area receives only 1.8 per cent of the country's rainfall, the vast majority of which falls to the east of the Andes and flows to the Atlantic Ocean through the Amazon basin..."*

Peru's urban and agricultural centres are therefore located far from the country's water supplies and this generates great challenges in the transportation and supply of water (Chevallier., *et al*, 2010). Peru's capital Lima is a key illustration of this problem. The city's population is more than eight million people, located in a desert environment on the western coast and receives very low rates of rainfall (Lubovich, 2007). Lima's water supply is pumped from the eastern side of the Andes relying on a single water tunnel. Painter (2007) reports that this;

*"...situation soon may become untenable, as city water managers are concerned that water reserves in Lima will not be enough to meet demand if there are drought conditions for two consecutive years."*

This deficiency in water reserves and infrastructure is seen throughout the country explaining why Peru is one of the most water-stressed nations in South America (Lubovich, 2007; Painter, 2007).

#### 4.3.3 The Unequal Distribution of Water in Peru

Also of great concern is the underinvestment of government funds into public water and its unequal distribution. These interrelated issues disproportionately burden poorer sectors of society who suffer from inadequate water supplies (Páez, 2009; Hepworth, *et al*, 2010). Figure 3 shows the vast water inequalities which exist in Peru by comparing households which do not have access to potable water and wastewater systems by poverty category in 2011. It highlights the large amount of those living below the poverty lines that have no access to these facilities in comparison to the 'non-poor' group.

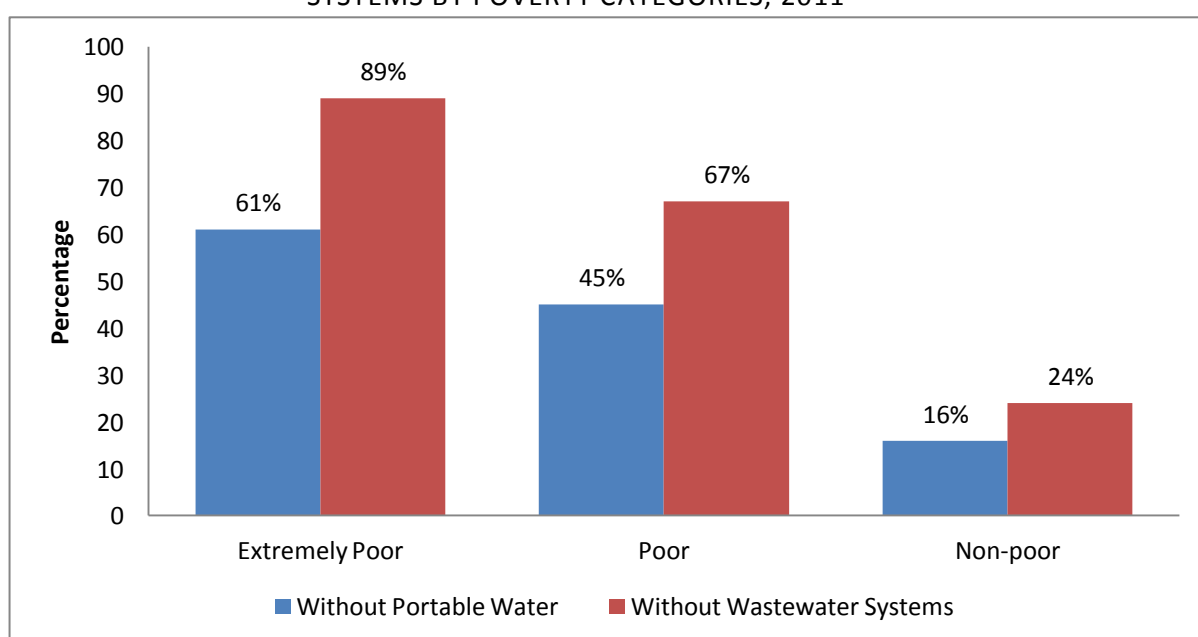
Again, Lima can be used as an example. In Lima it is not uncommon for people in shantytowns to pay more for water than those in wealthier neighbourhoods. This is because poorer districts



lack water infrastructure meaning water needs to be transported, thereby, costing more. As stated by Cruz, the head of the Peruvians without Water Movement; *"There is a gap between rich and poor. The rich pay less than the poor for drinking water – an offensive, shocking, insulting reality..."* (Páez, 2009). Unfortunately, this problem is widespread throughout Peru. According to Cruz, water management needs to be democratised in order to lessen inequalities and the exclusion of poor groups from water management and distribution (Paez, 2009). Historical evidence shows that despite rhetoric of pro-poor focus, it is unlikely the current liberalisation programme in Peru will aid this process to the benefit of poor groups (Castro, 2007).

Rural areas also suffer from the unequal distribution of water. Contributing to this is the ineffective and exclusionary management of rural water supplies whereby large agricultural producers have significant amounts of control over water distribution. The problem with this is that these groups tend to ignore the water needs of other water users as well as the limits of available water resources. Farmer allocation means that water is open and free for those who can afford to source it, while leaving out those who cannot, creating a beneficial system for the agricultural sector (Hepworth., *et al*, 2010). This has been disastrous in the neoliberal period, as agribusinesses are now extracting water at rates never before seen while state regulation of water has been weakened (Rendon, 2009). Poor groups suffer the most as public water endures underinvestment and degradation.

FIGURE 3: HOUSEHOLDS WITHOUT ACCESS TO POTABLE WATER AND WASTEWATER SYSTEMS BY POVERTY CATEGORIES, 2011



Source: Elaborated by author, statistics from INEI

This thesis will demonstrate that the Ica Valley is no exception to these water problems which disproportionately affect marginal and poor groups. Data from the Ica Valley shows that people living in marginal rural and peri-urban parts of Ica live off as little 10 litres of water per day, rather than the 50 litres minimal water for basic health needs indicated by the World Health Organisation. This is due to a lack of water available to poor groups because of an underinvestment and disproportionate amounts of water being distributed to wealthy agricultural producers in an unregulated environment (Hepworth., *et al*, 2010).

#### 4.3.4 Neoliberal Pressures on Peru's Water Resources

As Peru's economy continues to grow so too does the competition over its scarce water resources. Peru's neoliberal reforms have had major implications on its scarce water supplies. The expansion of agro-export industries has been particularly negative through the withdrawal of large amounts of the limited water in the coastal agricultural zone. For example, expanding agro-exports in the Ica Valley, especially since the 1990s, have driven water supplies into a level of scarcity (Rendon, 2009; Hepworth, *et al*, 2010). Additionally, a liberalised environment has attracted large amounts of foreign investment to extractive mining. Mining uses large quantities of water locally and its implications on water quality are far reaching (Bebbington and Williams, 2008). These industries, along with others, illustrate that neoliberal development based on the exploitation of natural resources is increasing business based demand for water in water-stressed Peru (Rendon, 2009). It is possible that in an unregulated market, scarce resources will become more accessible to the powerful, whilst leading to further exclusion of poor groups (Bayer, 2009b). This become extremely concerning when the resource in question is as vital as water.

#### 4.3.5 Climate Change and Water Supplies

While it is not in the scope of this thesis to delve into the complexities of climate change it is important to note that the implication of climate change may be very serious for Peru. Expert studies have concluded that almost everywhere on the global climate change has caused temperatures to increase (Chevallier, *et al*, 2003). These studies have shown that the tropical Andean glaciers are especially vulnerable to climate variations. According to Chevallier, *et al*, (2011:186)

*"Warming will very likely reduce their [glacier] area, and with this reduction, there will be deep and long-lasting adverse changes to the river flow regimes, hence water availability, on the western side of the Andes and along the adjacent Pacific Coast."*

As Peru already suffers from water availability problems, glacier retreat could threaten the country's long-term human and economic development (Painter, 2007). This is because Peru's productive coast depends on the Andean glaciers as a key water source especially in Lima and the agricultural regions to north of the city. The loss of this key supply will increase competition over water in an already water stressed area (Lubovich, 2007).

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#### 4.4 CHAPTER CONCLUSIONS

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There is evidence that the neoliberal reforms have helped drive a much needed economic transformation in Peru by generating macroeconomic growth since the 1990s. What is clear is that while there have been some benefits to poverty reduction these have not been as widespread as may have been hoped for. The benefits of macroeconomic growth have been distributed unequally which has exacerbated existing inequalities. In sum, Peru's macroeconomic situation is somewhat misleading when we consider the high levels of both relative and absolute poverty which still exist. This chapter has also shown the importance of understanding Peru's historical development as the external and internal structures, relationships, and status, which were established in the colonial period, continue to be significant in present day. This is crucial in understanding the development and underdevelopment which Peru continues to experience. Of particular significance to underdevelopment have been the structures which cause Peru to be a resource periphery which is over-dependent on primary resources. The case of water exemplifies how exclusive development is harming many in Peru to the benefit of a few. This exclusive development has been driven further by Peru's neoliberal approach as wealth divisions have grown larger since the 1990s. This understanding of development and underdevelopment of Peru allows a more informed analysis of the Peruvian asparagus industry. The next chapter will now move to investigate this expanding industry which is a part of Peru's neoliberal transformation.

## CHAPTER FIVE

### THE WORLD AGRO-FOOD SYSTEM AND PERU'S ASPARAGUS EXPORT INDUSTRY

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This chapter provides a bridge from the theoretical underpinnings of globalisation and agriculture to the real-world outcomes in Ica. The chapter begins by exploring globalisation and recent changes to the world agro-food system and what this has meant in developing world including Latin America. The second section then investigates Peru's increasingly important role as an exporter of fresh fruits and vegetables and more specifically the expansion of the Peruvian asparagus exports. The final section discusses the agro-boom of fresh asparagus in the Ica Valley and how this has been encouraged through neoliberal reforms.

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#### 5.1 GLOBALISATION AND THE RESTRUCTURING OF THE WORLD FOOD SYSTEM

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The position of this thesis fits into the 'transformationalist' paradigm which stresses the importance of the differentiating globalisation depending on global and local economic, social, political, and cultural domains<sup>13</sup> (Murray, 2006; Oosterveer, 2005). More specifically, I have utilised a definition provided by Braun and Díaz-Bonilla (2008:2) that globalisation is; *"...the multiplication and intensification of economic, political, social, and cultural linkages among people, organizations, and countries at the world level."*

In the later part of the 20<sup>th</sup> century the world has experienced a widespread and complex restructuring or globalisation of the global agro-food system (AFS) (McMichael, 1994; Bonanno, et al, 1994; Oosterveer, 2005; Watts and Goodman, 1997). This restructuring has involved global integration of the production and the distribution of food into a world supply chain which has been driven and is controlled by powerful TNCs (McMichael, 1994; Watts and Goodman, 1997; Phillips, 2006) These TNCs are usually involved at all levels of the agro-food chain through the process of vertical integration which is where one corporation controls the different stages of production through direct ownership or 'in-direct ownership' through contracts (Murray, 2006; Murray, 1999). The global production and the distribution of food have therefore become increasingly dictated by these powerful TNCs and the demands of their global customers. There, this has made it erroneous to analyse the trade of agro-foods in

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<sup>13</sup> For a comprehensive study of globalisation including the different concepts and debates see Murray, W.E. (2006). *Geographies of Globalization*. London: Routledge/Taylor and Francis.

terms of inter-nation exchange since it is now dominated by a network of globalised food chains in an increasingly liberalised market (Watts and Goodman, 1997). Driving this international integration and globalisation has been the liberalisation of national economies which has seen the withdrawal of state regulation and has allowed and promoted the entry of the TNCs (Kohl, 2003).

Global restructuring has been widespread, not only in the sense that it is global but also because it has been influential outside of the agro-food sector (McMichael, 1994). This, to begin with, is because at the state level the processes of globalisation have diminished the ability of governments to regulate national agriculture since state power is now outweighed by market forces. At the sectoral level, these processes have eroded boundaries as agricultural sectors have become increasingly integrated into the corporate and financial realms, having widespread implications for the reshaping of labour models. And finally the globalisation and restructuring of the AFS has produced regional niches. This has been exploited by TNCs which have proliferated NTAXs, especially in fresh fruit and vegetables, throughout different regions of the world (McMichael, 1994). It is clear that these processes of globalisation have followed a model of market liberalisation which has allowed TNCs to spread their operations globally (Watts and Goodman, 1997; Phillips, 2003).

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## 5.2 GLOBALISATION AND THE INTEGRATION OF THE DEVELOPING WORLD INTO THE AFS

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The liberalisation of the global market mentioned above has resulted in a progressive integration of the parts of developing world into the global AFS. This increased integration has been driven greatly by global trade liberalisation but also by specific domestic reforms which have brought a withdrawal of state intervention from national economies and increased privatisation (Kohl, 2003; Cancino, 2010). This means that market forces have become increasingly deterministic in domestic affairs for these integrated countries and they are more exposed to both international competition as well as the opportunities of the global economy (Kohl, 2003).

Since the 1980s, or the 1970s in the case of Chile, developing countries have become increasingly integrated into the global AFS as suppliers of agricultural products. This has been driven by niche food markets such as off-season fruits and vegetables or exotic foods demanded in developed countries where consumers have greater purchasing powers. This has

resulted in an increased number of developing countries being incorporated into the commercial food chain (Cancino, 2010). In the decades since the 1980s, the fresh fruit and vegetable (FFV) trade has been one of the most globally integrated agricultural sub-sectors with a large amount of international trade and investment into the industry. This expansion has drawn a range of developing countries into the FFV system especially countries of Latin America. As explained by Murray, (2006: 21) underpinning this development has been; *“...the search for profits among transnational distribution companies [TNCs] which have become increasingly mobile in their search for low cost/resource rich production sites.”*

The integration of Latin American countries into global markets accelerated following the debt crisis of the early 1980s. Many Latin American countries promoted the exportation of NTAX products in an attempt to find solutions to their economic problems (Murray, 1999; Barham, et al, 1992). As discussed in chapter three, this forced a transformation from inward oriented structuralist development models to outward-oriented free-market approaches based on supplying the demand of wealthy consumers (Llambi, 1994a). This change of orientation, or readjustment in conjunction with the globalisation of agro-food, led to a boom in off-season FFV and exotic products throughout Latin America (Barham, et al, 1992; Murray, 1999), including in Peru (Finan, 2008; Marshall, 2012).

However, this is not to say that the integration of developing countries in to the global AFS has been a homogenous process. By analysing the trends of agricultural integration through import and export ratios we can see that the processes of globalisation have had different outcomes in different parts of the developing world. For example, the ratios of imports and exports show that Sub-Saharan Africa experienced some of the greatest integration to the world market in the 1960s but has since seen the greatest retraction (Braun and Díaz-Bonilla, 2008). Asia conversely, has had some of the lowest integration up-trending slowly until the 1980s and has been reversing since. These diverge from the Latin America experience where these ratios show that countries have become increasingly integrated into the global economy through the exportation of non-traditional agricultural products (Braun and Díaz-Bonilla, 2008; Llambi, 1994b).

This is not to say integration is always a positive process for all involved as problems can develop within the countries which have been heavily integrated into the AFS. For instance, an OCED study shows that although the processes of globalisation have not been a major cause of poverty they can make pre-existing problems worse by negatively affecting the most

vulnerable groups and thereby widening social and economic inequalities (Kohl, 2003). As will be illustrated in later parts of this thesis this is occurring in Ica. The globalisation of the AFS has often had this effect as the most vulnerable producers in developing countries have been pushed out of the system by agribusinesses and the demands of the global consumer (Braun and Díaz-Bonilla, 2008). These problems have been well documented throughout Latin America where the expansion of NTAX and the increased exposure to market forces have worsened regional and local inequalities (Finan, 2008; Barham et al. 1992; Murray, 1999).

#### 5.2.1 Peru as a Global Agro-Food Exporter

Peru has followed this trend, experiencing large expansions in non-traditional fruits and vegetables production, including asparagus, along the coast (Finan, 2008). This has been encouraged by both political and economic transformations as well as pre-existing 'comparative advantages'. As examined in chapter four, Peru experienced a neoliberal transformation beginning in the 1990s and has observed steady economic growth ever since. An important contributor of this economic progression has been this expansion of Peru's non-traditional fruit and vegetable agro-industries which started to boom in the later part of the 1990s (Hepworth, et al, 2010).

Peru's increasingly important role as an agro-exporter has been determined by a set of dual processes. Firstly, external forces of neoliberal globalisation and the demands of the global economy have been influential in integrating Peru into the world agro-food system since the early 1990s (Rendon, 2009; RedGE, 2012). Peru's coastal production runs counter to the seasonal production of many fruits and vegetables in the northern hemisphere providing Peru with an 'off-season' market in the U.S and Europe, thus fuelling the expansion of the coastal agricultural frontier (Cancino, 2010). Moreover, the neoliberal reforms initiated in 1990 have been instrumental in channelling private investment into Peru's NTAX sectors (Hepworth, et al, 2010). Natural conditions along the coast have also supported the growing agro-export industries in Peru. The dry desert conditions, low temperature variations, high sun-shine rates and available underground water have all granted year-round production and created 'booms' in niche markets (Rendon, 2009). In fact, over the past 13 years more than 400 new agricultural products have been added to Peru's agricultural exports list (OxResearch Daily Brief Service, 2005). Asparagus has been the star product of this agro boom as will be demonstrated in the subsequent section.

Agricultural production has been concentrated in two areas; La Libertad in the north of Peru and the area of this study; Ica, to the south of Lima. This production has re-energised the local

economies and generated new employment in these regions (OECD , 2007). However, Peru's NTAXs have brought a re-concentration of land ownership with a small number of economic actors along the coast with connections to the global market benefiting (Hepworth, et al, 2010; RP46-EG, 2012). Small scale traditional producers concentrated in the *sierra* are being displaced by these few powerful industrial producers on the coast (Hepworth, et al, 2010,). This is because government support, including tax incentives and land ownership rights, have been re-oriented towards the coastal agro-exporters at the expense of these traditional producers (Cancino, 2010). Simultaneously, market liberalisation means there is an abundance of imported subsidised food which is destabilising the unsubsidised nationally grown crops (OxResearch Daily Brief Service, 2005; Crabtree, 2010).

It is evident that a combination of global and internal changes as well as pre-existing conditions have allowed Peru to become integrated into the global AFS and has hence generated a boom in the country's agro-exportation. This has been associated with trends of growing land ownership and water access concentration by large agro-exporters to the detriment of marginal groups of small farmers and urban populations (Hepworth, et al, 2010).

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## 5.3 THE DEVELOPMENT OF ASPARAGUS IN PERU

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### 5.3.1 Global Trends in Global Asparagus Production and Peru

Until the 1970s asparagus was predominately consumed in the same countries it was produced; the U.S. and parts of Europe. However, from the mid-1960s Taiwan rapidly began to export large amounts of preserved asparagus, emerging as the world's largest producer in the 1970s. Due to rapid Taiwanese industrialisation in the 1980s its production of asparagus dramatically decreased while Peru's production in preserved asparagus started to increase (Shimizu, 2009). Potential demand for Peruvian asparagus was, however, challenged by cheaper asparagus from China, which then became the largest producer of preserved asparagus in the mid-1990s (Cancino, 2010).

Globalisation has meant a more internationalised and logistically improved fresh fruit and vegetable network has developed, thus allowing Peru and China to also export fresh asparagus globally (Shimizu, 2006). Partly due to this logistical improvement Peru's fresh asparagus exports began to expand in the 1990s. Between 1990 and 2000 exports of fresh asparagus grew remarkably, increasing by more than tenfold and almost reaching the same value and volume as the longer established exportation of preserved asparagus (Shimizu, 2006; Hepworth, et al, 2010).



In the 2000s preserved asparagus, which is mainly exported to Europe, decreased while fresh asparagus, mainly for the U.S. market, continued to expand rapidly. Fresh exports surpassed their preserved counterparts in 2002 (Shimizu, 2009). By 2004, the value of fresh asparagus exports reached almost double that of preserved asparagus and Peru secured its place as the world's largest exporter of fresh asparagus (Shimizu, 2006).

### 5.3.2 The Introduction of White Asparagus in Peru

Preserved white asparagus was first introduced into Peru in the northern coastal region of La Libertad in the early 1950s by a small business which exported it to Denmark (Díaz/FAO, 2007; OECD , 2007). Until the end of the 1970s there were only two companies that processed and exported asparagus. These companies partly produced asparagus but were also supplied by local small and medium scale farmers. In this period there were many small and medium asparagus producers with the majority having less than 10 hectares. The small scale concentration in asparagus production remained until the end of the 1990s, particularly in the case of white asparagus in northern Peru (Shimizu, 2006).

The asparagus industry in northern Peru began to expand from the 1970-1980s due to growing international demand for asparagus. This attracted more asparagus exporters to the La Libertad region (Shimizu, 2009). However, larger scale expansion didn't begin until 1989, when a chicken agro-business introduced a drip irrigation system, known in Peru as *riego por goteo*, from Israel. The most important advantage of this system is that it uses water much more efficiently than traditional gravity fed irrigation. Rather than applying water to an entire field, drip irrigation transports water by tube and directly applies it to the soil where the asparagus is (see plate 2). The success of this agro-business in producing asparagus led to expansion in medium and large producers who began to use the drip irrigation system. This meant the production of asparagus was no longer restricted to the river basin. The newer system made it feasible to use ground water as it required much smaller amounts of pumped water than that of older gravity systems (Shimizu, 2006).

In the 1990s, Peru's neoliberal reforms removed land ownership restrictions which were imposed on private groups as part of the 1960 agrarian reforms. This encouraged the entry of agro-companies which were further assisted with tax incentives and access to cheap land (Cancino, 2010). This severed some of the processing companies' reliance on smaller scale producers for asparagus as the companies purchased land and were able to produce more of

their own asparagus. And finally, a large scale irrigation project 'CHAVIMOCHIC' was completed at the end of the 1990s. This project connected four river basins and turned the once desert area around Trujillo city into a 'green sea'. This resulted in an unprecedented entry of agro-exporters to the region, with farm sizes ranging from 50-500 hectares (Shimizu, 2006).

### 5.3.3 The Growth of Fresh Asparagus in Peru

As demonstrated, from the 1950s to the 1990s Peru's asparagus export industry was dominated by white preserved asparagus grown in the northern region of La Libertad. In the 1990s, however, the production and exportation of fresh green asparagus began to expand and move south.

In the early 1990s the production of fresh asparagus began to expand gradually and by the end of the decade this expansion became more rapid, booming in the 2000s (Hepworth, et al, 2010). Between 2003 and 2011 fresh asparagus exports grew impressively in value from \$108 million to \$290 million while exports in preserved asparagus on the other hand only grew from \$82 million to \$106 million<sup>14</sup> (SUNAT, 2012). It is clear that in the last decade there has been a move from white preserved asparagus to green fresh asparagus in the Peruvian asparagus production. Fresh export asparagus is now seen as the star product of NTAX in Peru and it has been modelled as a forerunner for investments in other NTAXs along the coast of Peru, especially in the region of Ica (Cancino, 2010).

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<sup>14</sup> Values shown in U.S. Dollars.

#### PLATE 2: DRIP IRRIGATION SYSTEM



Plate 2 Shows water being applied directly to the plant through a drip irrigation system on a small scale asparagus farm in Ica. Source: Photo taken by author.

Interestingly, global asparagus production has decreased since 2005 with China experiencing the largest loss. However, Peru and Mexico have bucked this trend; both have experienced increased asparagus production areas thanks to sustained demand (Benson, 2010). Peruvian asparagus is virtually a pure export crop with 99 per cent of the asparagus produced there being exported (Díaz/FAO, 2007; OECD , 2007).

#### 5.3.4 Factors which Encouraged the Expansion of Fresh Asparagus in Peru

A great part of Peru's global dominance in the trade of asparagus owes a lot to Ica's tropical dry climate and loamy soils, which are perfect for growing asparagus. These conditions mean that Peru has the highest asparagus yield/hectare rates in the world. In addition, available groundwater and the irrigational technology to utilise it, means asparagus can be produced all year round, including when U.S. asparagus is in its off-season, creating a niche market (Cancino, 2010; Díaz/FAO, 2007). Furthermore, a growing preference for fresh vegetables and with a greater availability of air transportation, this change in preference has expanded the market for fresh Peruvian asparagus (Shimizu, 2006).

In addition to these pre-existing comparative advantages, the Peruvian asparagus industry has also developed due to important political and economic changes (Cancino, 2010). In an interview with a leading academic and water consultant in Lima I was told that the neoliberal policies have been instrumental in driving a fresh asparagus export boom. This research participant stated that there have been four significant changes; (1) Peru's neoliberal transformation means water management has been transferred from the state to privately run water user boards (2) there has been widespread liberalisation of land ownership laws especially on the coast (3) more recent laws in relation to ground water access and labour flexibility have been passed in order to promote further investment in the agro-export sector (4) and finally, greater free trade with the U.S. in agricultural exports has taken place as part of the Andean Trade Promotion and Drug Eradication Act (RP28-EG, 2012). These conditions allowed and promoted the entry of large investors and large scale producers into the NTAX and asparagus industries, which brought the aforementioned expansion in production and economic growth. This created a new type of 'farmer'; those from other sectors such as mining, fishery, pharmaceutical, and financial sectors, are now investing in the agro-export industries attracted by the free market oriented state policies (Díaz/FAO, 2007). These changes allowed investors to exploit coastal Peru's comparative advantages in producing asparagus and thus propelled the boom that now exists (Shimizu, 2006). Nonetheless, these changes have also deepened resource concentration and made resource access increasingly unequal as will be discussed later.

#### 5.3.5 The Two Water Reforms of Peru

As alluded to in the previous section, Peru has gone through two major water reforms in its recent history. In 1969, under the military government of General Velasco Alvarado, Law 17752 was implemented, also known as the General Water law. The law signalled the nationalisation of water, declaring it to be property of the state with no opportunities to privatise it (Rendon, 2009). Until 1989, water resources were administrated by Technical Authorities of Irrigation Districts under the direction of the Ministry of Agriculture. These 1969 reforms made it extremely hard for large agro-exporters to concentrate water resources. However, this nationalised water system was plagued with capacity problems and was faced with widespread protests. As a result, Peru experienced a radical transfer of water management from the state to private water user boards known as *Junta de Usuarios* in 1989 (Hepworth, et al, 2010).

Since the 1990s water has been increasingly liberalised. Sustained state withdrawal as part of Peru's neoliberal reforms means that the *Junta de Usuarios* have continued to administer the country's irrigational water. The problem with the *Junta de Usuarios* is that they are essentially water service providers for farmers and therefore cannot be expected to manage and regulate water among different sectors and water users (Hepworth, et al, 2010; Oré, et al, 2011). Additionally, the government has encouraged greater use of irrigational water in the agro-export sector through government built irrigation infrastructure projects and subsidies (Hepworth, et al, 2010). These processes have supported the rapid expansion of agro-exports by granting large producers with greater access to water. But there have also been negative implications, as will be discussed in the next chapter.

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## 5.4 THE AGRICULTURAL CONTEXT IN ICA

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The Ica Valley has a long history of agro-exportation, beginning with cotton more than 50 years ago. This section will outline the water sources which have supported the area's agriculture before discussing the historical development of agro-exports there. This section will also explore Ica's recent asparagus boom, thereby continuing the examination of asparagus export development.

### 5.4.1 Sources of Water in Ica

This section will briefly explore the different sources of water in the Ica Valley to understand its importance to agriculture. The valley has two sources of water; superficial river water and underground water from two connected aquifers. Around 50 per cent of the water used in the Ica Valley between 1950 and 2007 was underground water, while another 42 per cent came from the Ica River, and the remaining 8 per cent came from an irrigation system (Rendon, 2009).

The source of the Ica River begins on the western slopes of the Andean Mountains in the region of Huancavelica and flows through the Ica Valley passing Ica city on its way to the Pacific Ocean (Hepworth, et al, 2010). The total length of the natural river basin is 7,711 km<sup>2</sup>, while the Ica River covers an area of 8,103 km<sup>2</sup> when the area covered by an irrigation system known as the Choclococha is included (Oré, et al, 2011; ANA, 2011) (see plate 3). The river basin is located at 2,500 metres above sea level in the Huancavelica region, where glaciers and some 150 small lakes as well as three large lakes - Choclococha, Orcococha, and Ccaracocha - play important roles in the hydrological cycle of the basin. The river only receives rainfall in the summer months and this is usually low and extremely variable making the Ica River one of the

driest and most unpredictable rivers on the Peruvian coast. The water that reaches the Ica Valley is flood water occurring over this December to March period and is regulated by the Choclococha system from September to October. The middle of the river basin is located between 300 and 480 metres above sea level in the region of Ica. In this area is the largest space of agricultural land with a mixture of small-scale traditional agriculture and large NTAX industries. The lowest part of the basin is at the end of the Valley where mainly small traditional agriculture and a small group of recent agro-exporters are found (Oré, et al, 2011).

The Choclococha irrigation system has interconnected the regions of Ica and Huancavelica because of the irrigation needs of Ica. The Ica River basin was extended by 392 Km<sup>2</sup> in 1958 when a cut off drain was constructed in the highland pampas diverting water once destined for the Amazon basin and used in Huancavelica. This irrigation project is known as the Tambo-Choclococha, or simply the Choclococha. It transports water from the Pampas River basin, including from the mentioned lakes of Choclococha, Orcococha and Choclococha, to the Ica Valley and thereby created 10,000 hectares of new irrigated land. This water diversion, however, reduced water availability in Huancavelica and has since generated a number of confrontations between the regions (Hepworth, et al, 2010).

PLATE 3: MAP OF THE ICA RIVER BASIN

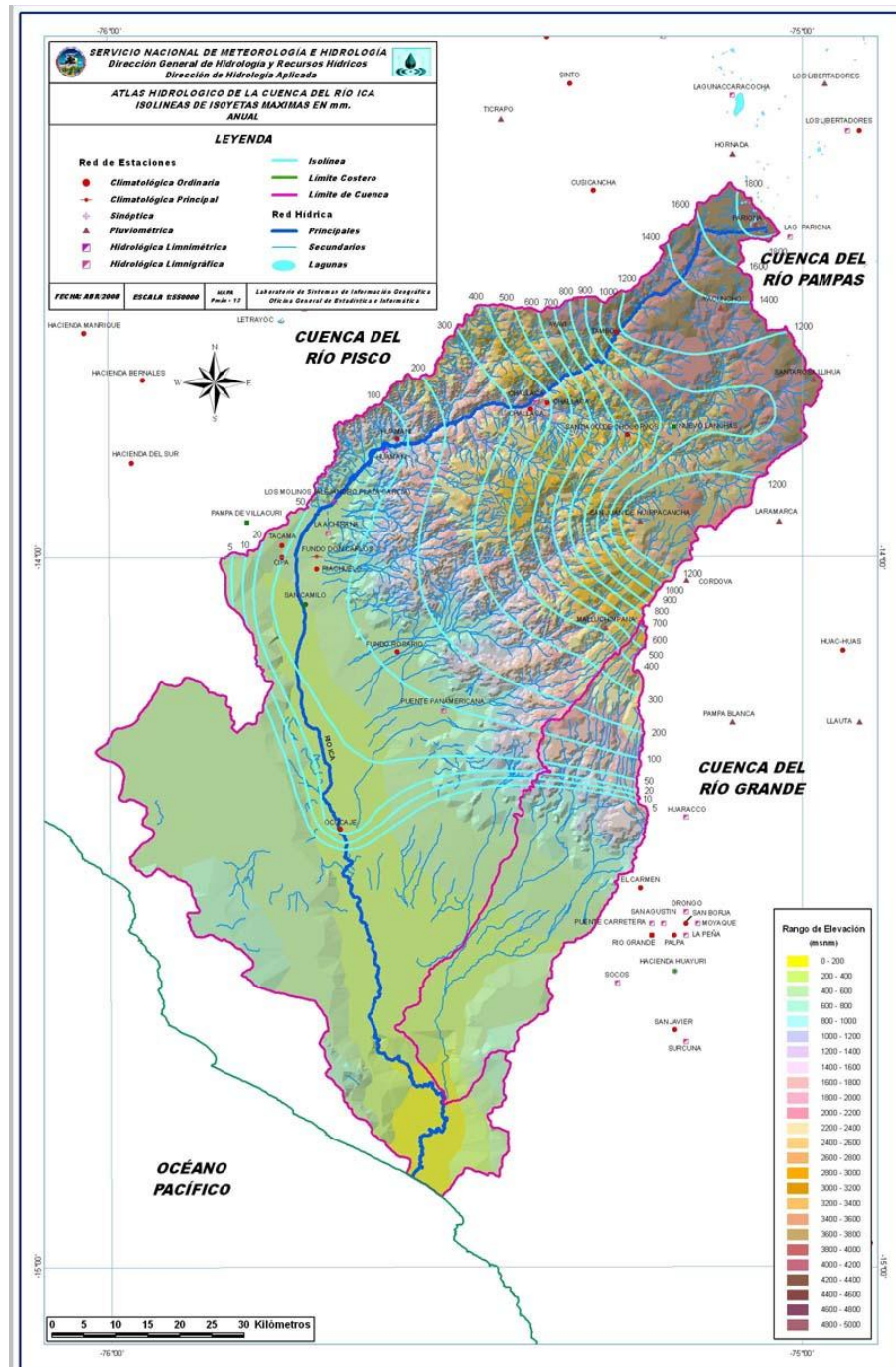


Plate 3 shows the River basin of the Ica River. It illustrates how water is first sourced in the highlands and then passes through the Ica Valley before reaching the Pacific Ocean. In the right corner some of the lakes that feed into the Choclocha irrigation system can be seen. Source: Servicio Nacional de Meteorología e Hidrología del Perú (Accessed 2013).

The final sources of water are the Ica and El Villacurí aquifers which are connected and both supplied with water from the Andes. The word Ica comes from the Quechua<sup>15</sup> word for ‘the place of abundant springs’ (Hepworth, et al, 2010). It is important to note that while it is easier

<sup>15</sup> Quechua is an indigenous language spoken in Peru.



to discuss the Ica and El Villacurí aquifers as one hydrological unit some distinction must be made. The El Villacurí aquifer is a non-renewable source of water as it was recharged in previously wetter climates and is now minimally recharged with water from the Ica Valley as well as rare floods events. The Ica aquifer is conversely an alluvial aquifer, which means it is recharged from the Ica River making it less vulnerable to over-exploitation (Hepworth, et al, 2010). However, as will be discussed in the following chapter, recharge is no longer sufficient and the aquifer is now in a situation of over-exploitation. For the purpose of this study, it is easier and less problematic to discuss the aquifers as one hydro-geological unit or body. As a hydrological unit, the Ica-El Villacurí are extremely significant aquifers and are the largest store of groundwater in Peru, representing 40 per cent of the country's groundwater supplies (Oré, et al, 2011; Rendon, 2009).

#### 5.4.2 Ica and the Early Development of Agricultural Exports

Over the last century Ica and its agricultural sectors have been through major transformations. The characteristics of the region mean that supplies of surface water suffer from extreme variability and are only available during certain times of the year. As a result farmers have always faced high levels of uncertainty in water supplies over the valley's long agricultural history. In the earlier part of the 20<sup>th</sup> century the international demand for cotton and improvements in surface water infrastructure, such as the Choclococha system, meant that the valley began expanding its agricultural frontier. Additionally, producers began to make use of groundwater on a larger scale at the end of the 1950s. This water source is advantageous for its clean and reliable properties because it is not exposed pollution or affected greatly by the seasons (Hepworth, et al, 2010). Industrial cotton exporters expanded rapidly in the 1960s using both ground and surface water for production (Oré, et al, 2011). This period differed to the pre-1950s, as cotton produced for the external market became concentrated in modern large scale farms while small producers oriented their production for the internal market (Rendon, 2009). The purity of groundwater also meant that it became the main source for human consumption in Ica since the 1960s (Oré, et al, 2011).

Peru's and Ica's agricultural structure, however, changed in 1969 when the military government of Velasco Alvarado implemented radical agrarian reforms that saw the separation of *haciendas* larger than 150 hectares into co-operatives made up of ex-labourers of the *haciendas* (CEPES, 2011). As stated by Hepworth, et al, (2010:24);



*“Under these reforms cooperatives benefited from access to and control of water sources, new irrigation infrastructure, and cash cropping. Small and medium sized farms needed groundwater, wells, and export crops to fit in the valley’s new agrarian structure.”*

Yet a lack of government training resulted in the failing of the cooperative agricultural model and by the late 1980s nearly all of these cooperatives in Ica were split up by the farmers themselves and small *parcelas* or small land plots, and associations were created around water wells, or *pozos*. This represented the disappearance of the great estates and small and medium producers expanded throughout the valley until the 1990s (Oré, et al, 2011). After the land distribution process small farmers became the largest farming group in Peru; the average *parcelas* was only 3.1 hectares in 1994 (CEPES, 2011).

#### 5.4.3 Neoliberalism and Ica’s Modern Asparagus Boom

Since the neoliberal reforms, Ica’s agricultural exports have been re-oriented towards non-traditional fruits and vegetables for the international market. In fact, agro-exports have boomed in Ica following 1990 and now almost 40 per cent of Peru’s fruit and vegetable exports are grown in its arid desert thanks to the available groundwater (Rendon, 2009).

The rapid expansion of fresh asparagus in Peru has occurred almost completely in Ica where 95 per cent of the country’s fresh asparagus is now grown (Hepworth, et al, 2010). The successful introduction of fresh asparagus to Ica is partly attributed to a group of producers who organised the Ica Farmer’s Association or *Asociación de Agricultores de Ica* (AAI). The AAI, with the support of the United States Agency for International Development (USAID), began testing new crops in an attempt to diversify from traditional crops (Díaz/FAO, 2007). Asparagus was seen by the AAI and USAID as the best option, due to its high price on the global market and the off-season U.S. niche market. Economic constraints to expansion were minimal as these producers had access to investment capital and the industry benefited greatly from the previous cotton export boom which provided technical knowledge and infrastructure (Díaz/FAO, 2007). The result was that fresh asparagus boomed in Ica and Peru is now the world’s largest exporter of fresh asparagus.

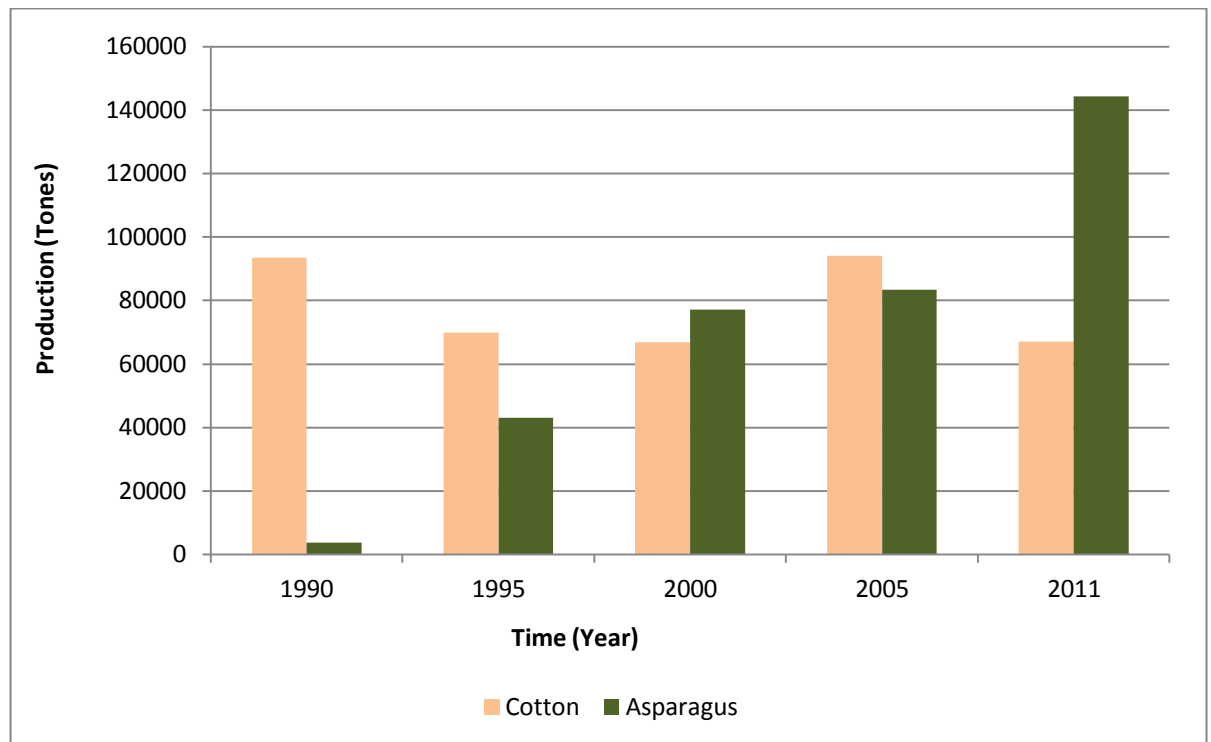
The sweeping reforms of 1990s unravelled the 1969 agrarian reforms and greatly supported this growth of asparagus exports. In 1993 for instance, President Fujimori imposed a new constitution. According to CEPES (2011:5), this constitution

*“...cleared the way to continuing liberalization of land policies, a reduction of campesino communities’ owner-ship rights, incentives for investors to purchase land, principally on the coast, and the entrance into the country of foreign capital....”*

Throughout the 1990s, further liberalisation and the promotion of agro-exports brought many investors in to the Ica Valley. There, they began producing NTAXs, especially fresh green asparagus, using drip irrigation systems (Oré, et al, 2011). The older export crop, cotton, nonetheless remained the most important crop through the 1990s. However, drought, insufficient access to credit, and low international prices meant many small and medium producers were forced to sell or lease land to these larger, predominately asparagus producing, agro-exporters. Both the 1998 El Niño flooding and the 2007 earthquake forced more small and medium farmers into debt while cotton prices continued to fall pushing many of these farmer to sell their land in order to make debt repayments. This encouraged further agro-export expansion in asparagus through the move from cotton to fresh asparagus (Hepworth, et al, 2010) (as shown in Figure 4).

Additionally, further expansion of the agricultural frontier has allowed the asparagus industry to develop through the cultivation of Ica’s desert using groundwater (Hepworth, et al, 2010). Due to these processes, cotton production has reduced in the valley between 1990 and 2008 with the areas dedicated to cotton dropping from 18,000 hectares to under 7,000 hectares. Conversely, new agricultural export crops destined for the external market, particularly asparagus, have continued to expand throughout the 1990s and 2000s (Rendon, 2009).

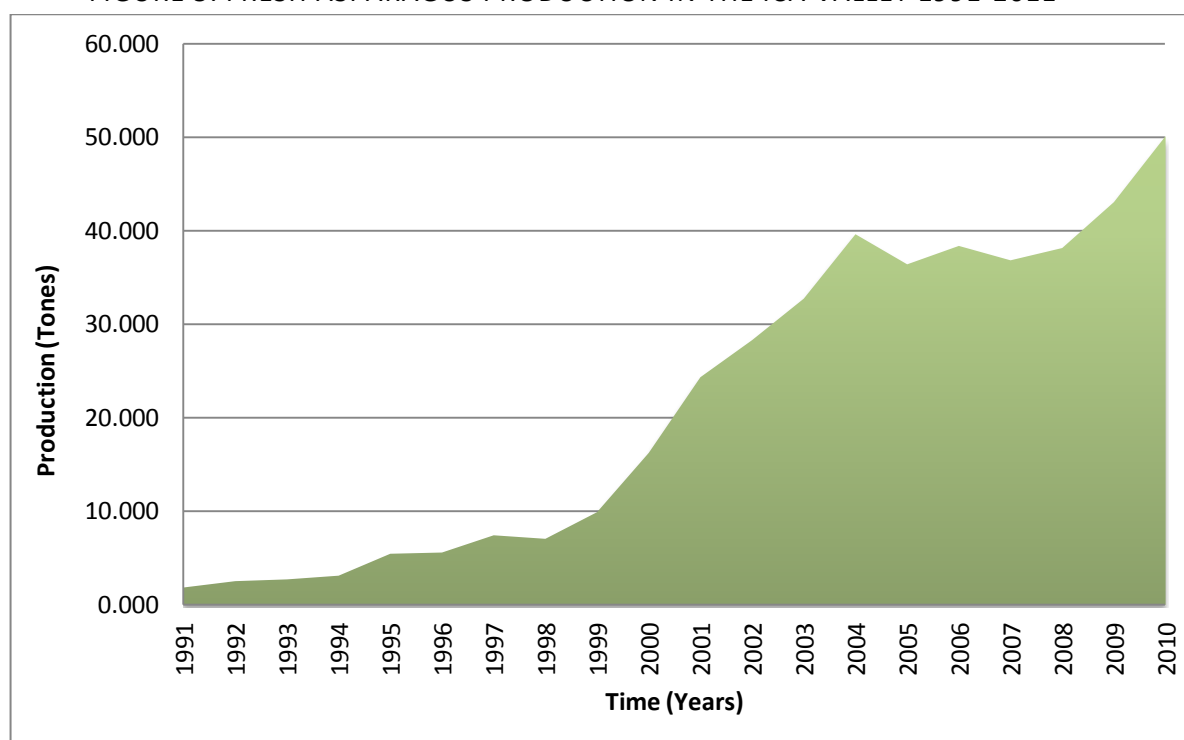
FIGURE 4: CHANGES IN COTTON AND ASPARAGUS PRODUCTION IN THE ICA VALLEY  
1990-2011



Source: Elaborated by author, statistics from Ministerio de Agricultura (Accessed, 2013)

As mentioned, specialisation in asparagus production between the regions has also developed. The northern region of the La Libertad produces preserved white asparagus while Ica has specialised in fresh green asparagus. The larger variation in summer and winter temperatures and higher amounts of sunshine over the harvest period makes Ica better suited for producing fresh green asparagus than its northern counterpart (Shimizu, 2006; Díaz/FAO, 2007). The combination of ideal growing conditions and a global shift towards consumer preferences for fresh vegetables has helped the fresh asparagus industry to boom in Ica (Cancino, 2010). As a result, Ica's asparagus acreage grew from 592 hectares in 1990 to 12,782 in 2011. In the same period, production in the Ica region grew from 3,750 tons to 144,419 tons (Salazar, 2012). The asparagus boom has been followed by other export booms in products such as red grapes, artichoke and paprika (Oré, et al, 2011). Figure 5 illustrates the rapid growth trend in fresh asparagus production in the Ica Valley. It shows how the pro-investment policies and the liberalisation of land and water came into fruition at the end of the 1990s with asparagus production rapidly expanding at this point.

FIGURE 5: FRESH ASPARAGUS PRODUCTION IN THE ICA VALLEY 1991-2011



Source: Elaborated by author, statistics from Ministry of Agriculture (Ica office)

#### 5.4.4 Agro-exports and Groundwater Dependence

The agro-export booms, first in cotton and now in asparagus, means producers are using increasing amounts of groundwater and have become increasingly dependent on it in Ica. Observing the growth of the number of water wells in Ica illustrates this; in 1939 there were only 47 wells, by 1957 there were already 500 wells, and by in 2007 over 1550 wells existed (Rendon, 2009). Moreover, in the 1990s, groundwater use in the valley contributed 50 per cent of the water used by agriculture. By 2010 this percentage had risen to 65 per cent showing that dependence on underground water has continued to deepen (Oré, et al, 2011). While older crops in Ica, such as local vegetables and fruits as well as cotton are, irrigated or at least partly irrigated with surface water, asparagus is irrigated exclusively with groundwater. It is evident that under the current situation Ica's agro-exporters would be unable to survive without groundwater (Rendon, 2009).

#### 5.4.5 New Agro-Exports and Resource Concentration

The growth of asparagus, and of other TNAXs, has re-concentrated land ownership and water use in Ica. As small and medium-scale farmers were forced to sell their land to agro-exporters land ownership has become more skewed. Throughout the late 1990s a good reputation for asparagus exports grew and market demand increased thus attracting more investment to Ica. In 1995, 'the Promotion of Investment in Economic Activities on Lands in National Territory and in *Campesino* Communities' known commonly as 'the new land law' was passed. This

allowed the privatisation of *campesino* community lands and removed restrictions on land ownership. Soon after, new agro-exporters with farms larger than 1000 hectares began to emerge. This is a remarkable point as before the free market reforms properties did not exceed 300 hectares (CEPES, 2011). An expert academic (RP46-EG, 2012) told me that; “...the concentration of land and water in Ica is directly connected to the asparagus boom and the neoliberal ideas which fostered it”. A study from 2009 demonstrated that 78 per cent of asparagus is produced on farms larger than 25 hectares and 12 per cent on farms with between 10 to 15 hectares while those with fewer than 10 hectares mainly grow grape, cotton and corn (Rendon, 2009). In 2008 export crops covered 10,587 hectares, of which 8,211 were part of properties of greater than 100 hectares. These figures illustrate that exportation, especially in asparagus, is evidently concentrated in large farms, with around 10 farms concentrating 10,000 hectares in the Ica Valley (Salazar, 2012).

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## 5.5 CHAPTER CONCLUSIONS

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This chapter highlighted how the globalisation of the world food system has had major implications, particularly in parts of the developing world. It has demonstrated that certain Latin American countries have been greatly integrated into AFS, especially through the non-traditional FFV sector. It was recognised that economic liberalisation and the expansion of agro-export industries controlled by TNCs have eroded government power and was shown that Peru is no exception to this process. For instance, throughout the 1990s and 2000s the country has been greatly integrated into the global economy through neoliberal policies which have attracted investment and generated agro-export booms. This chapter also explored the development of asparagus in Peru. It explained that the industry was dominated by small and medium farmers producing white asparagus in northern Peru until 1990. Since the 1990s, a packet of neoliberal reforms has helped drive the successful expansion of fresh green asparagus in the southern region of Ica. Ica has a long history of agriculture, but as was illustrated, Ica’s asparagus boom and the neoliberal policies which promoted it have exacerbated groundwater dependence and worsened resource concentration in the valley. The following chapter will discuss the social and environmental impacts which agro-export expansion has caused in Ica.

## CHAPTER SIX

### THE SOCIAL AND ENVIRONMENTAL IMPACTS OF ICA'S AGRO-EXPORT INDUSTRY

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This chapter outlines the over-exploitation of Ica's underground water sources and explains what socio-environmental impacts this is having in the Ica Valley. In order to do this, the research applies a political ecology approach to examine how Ica's uneven power relations are at the root of these socio-environmental problems.

First of all, the valley suffers from the geographic water problem common to coastal Peru. As discussed in chapter four, Peru's population and economic activities are heavily concentrated on the coast, while the large majority of the country's rain falls on the opposite side of the Andes Mountains and drains through the Amazon to the Atlantic Ocean (Hepworth, et al, 2010). This means Ica, like the rest of the Peruvian coast, receives very small and unreliable amounts of surface water. As also discussed, this means the Ica-Villacurí aquifer is a crucial source of water for the Ica region as it provides water for both human and agricultural use.

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#### 6.1 THE OVER-EXPLOITATION OF ICA'S AQUIFER

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In 2008, a World Bank report declared that the Ica aquifer had entered a state of 'negative disequilibrium' or 'over-exploited' (Foster, et al, 2008). Studies by Peru's National Authority of Water or *Autoridad Nacional del Agua* (ANA), show that the rate at which water can be sustainably exploited from the aquifer is 252 million cubic metres (MMC) per year (ANA, 2011). However, the latest official data - taken in 2009 - shows that extraction is well over this figure at 543 MMC per year (Oré, et al, 2011; Marshall, 2012). Therefore, extraction is over double the rate which is considered to be the aquifer's maximum level of sustainable water extraction (Marshall, 2012; Oré, et al, 2011). This means the natural recharge rate has been over taken by the extraction rate, making the aquifer non-renewable as shown in Figure 6. In response to this, ANA placed emergency water restrictions in parts of the valley and implemented a ban on the proliferation of wells for agricultural use in 2009 (Bayer, 2009). Additionally, the Regional Government of Ica passed a resolution in early 2010 declaring the Ica Valley to be in a state of water emergency (Oré, et al, 2011).

FIGURE 6: GROUNDWATER EXTRACTION IN ICA VALLEY, 2002-2009

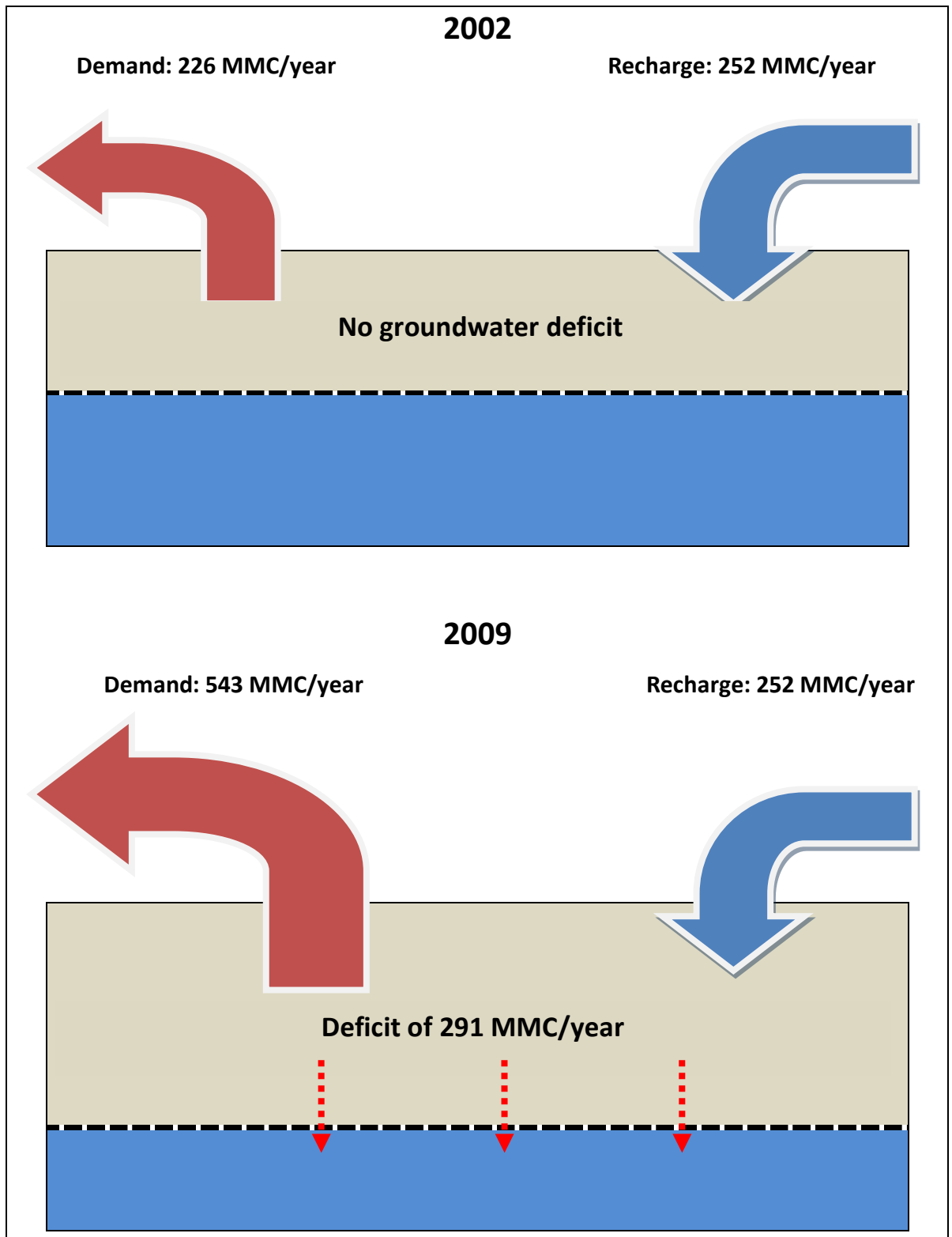


Plate 3 illustrates how the increase in ground water extraction has surpassed aquifer recharge resulting in water over-exploitation. Source: Adapted from Hepworth, et al, 2010 with updated statistics from Oré, et al, 2011.

The clearest indication that Ica's aquifer is being overexploited is that the majority of the Valley's existing wells are drying up as the water table descends (Bayer, 2010). While there is no doubt the aquifer is being over-exploited, the total amount of water stored and the natural recharge and extraction rates do vary depending on the source (Hepworth, et al, 2010). The lack of any comprehensive hydro-geological investigation and differing calculation of extraction make it difficult to predict when the aquifer will cease to be a useable source of water. According to ANA, a further decline of Ica's water table by 10 metres will cause a critical situation as many population wells will dry up. ANA's maximum water table decline rates predict that in the most critical districts the water table is set to drop 10 metres in the next five or six years. The rest of the valley's districts are likely to experience this critical drop within the next 15 years (ANA, 2011) as shown in table 1 below. In addition, evidence reveals that a range of negative impacts are already being experienced by those who lack the financial resources to access water (Hepworth, et al, 2010).

TABLE 1: DURATION FOR ICA'S WATER TABLE TO LOWER TO CRITICAL LEVELS IN  
SELECTED AREAS OF THE VALLEY

District	Maximum Rate of Decline (Metres per Year)	Years for Water Table to Decline to critical level (By 10 metres)
Pueblo Nuevo	1.84	5
Santiago	1.75	6
Pachacutec	1.3	8
Parcona	1.3	8
Tate	1.07	9
La Tinguiña	1.04	10
(Salas) Guadalupe	0.78	13
Ica (Central)	0.75	13

Source: adapted from ANA, 2011.

### 6.1.2 Agro-Exports and Increasing Water Demand

The growth in NTAXs and the associated expansion of the agricultural frontier has led to the over-exploitation of Ica's aquifer. Without considering the future implications for Ica, successive governments have promoted a neoliberal export model which has caused the agricultural frontier to expand into the desert (Díaz, 2009). Between 1980 and 2009 this frontier has grown from 20,000 to 37,000 hectares, mainly into once uncultivated land (Bayer, 2009). Increasing groundwater use allowed Ica's agro-export industries to grow but it has also led to rapid depletion of its aquifer (ANA, 2011; Oré, et al, 2011). This is already negatively impacting small scale farmers and domestic water users, especially marginalised groups who are experiencing very limited and decreasing access to water (Díaz, 2009). According to the



conclusions of a World Bank study, the Ica-Villacurí aquifer could be the fastest depleting aquifer in the world (Foster, et al, 2008). Two research participants - a small scale asparagus producer and an engineer from an asparagus exporter - told me that if the authorities controlled the expansion of the frontier there would not be a water problem in the first place and in order to avoid a water crisis the area used for agriculture must be reduced (RP52-FPG, 2012 RP53-FPG, 2012).

In the 1990s, the exploitation of the Ica aquifer began to increase with the introduction of NTAXs to Ica, such as asparagus, paprika, artichokes, and grapes, driven by neoliberal policies and international demand. The production was developed by new national and international agro-exporters, which exclusively use groundwater for irrigation due to its purity and reliability, which has allowed for almost constant extraction (Oré, et al, 2011). The agro-export sector has heavily concentrated the water and land availability in the Ica Valley. In the Old Valley of Ica, the area which excludes the Villacurí basin, six agro-exporters account for 78 per cent of the groundwater used (Bayer, 2010). It is, therefore, specifically these agro-exporters which are creating the over-exploitation of water due to the high irrigation demands of export crops such as asparagus (Bayer, 2010). The culpability of agro-exporters for aggravating over-exploitation is widely acknowledged, even by certain agro-exporters themselves (Hepworth, et al, 2010; RP56-FPG; 2012; RP51-FPG; 2012).

A large part of the problem is the types of crops these agro-exporters use. As discussed at length, export asparagus has boomed in Ica since the 1990s. However, asparagus is an unsuitable crop for Ica's dry desert conditions as it uses up to seven times more water than the Quebranta grape which is a traditional crop of the Valley (Bayer, 2010). Figures from Peru's Ministry of Agriculture illustrate that asparagus production requires large amounts of water, using on average 147 million cubic metres per year for irrigation between 2002 and 2008 (Hepworth, et al, 2010).

### 6.1.3 Corruption and Illegal Wells

The over-exploitation is also creating problems for large agro-exporters who now own more than 90 per cent of the existing wells of the Ica Valley. These agro-exporters are now rapidly purchasing the licences for the remaining productive wells in order to fulfil their water demands. Well sales are becoming increasingly lucrative and some record sales have reached as high as \$150,000<sup>16</sup> (Cancino, 2010).

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<sup>16</sup> Value in U.S. Dollars.

There is evidence, however, that some agro-exports have turned to using illegal methods to obtain new wells thereby ignoring the ban on the proliferation of new ones as imposed by ANA. A report by a water consultant involved in Ica explains four of the most common illegal methods to acquire new wells: (1) some agro-exporters have built new wells and simply not recorded them. As a result there are many unlicensed wells drawing water in Ica; (2) others have purchased licences from collapsed and unusable wells. Once these licences have been brought the agro-exporters construct new wells next to collapsed ones, thus illegally using the licences from the old wells; (3) agro-exporters have also transferred licences of wells from one place to another. By doing this, agro-exporters can transfer licences to where they want to build wells. No one discovers that licences have been transferred as the authorities lack the power to enter the private farms; (4) a final practise identified is where agro-exporters violate a law which prohibits the building of agricultural wells near to population wells. There are areas where the deep wells of the agro-exporters are taking large amounts of water and leaving populations with very little (Cancino, 2010).

Corruption in water regulation has also been highlighted as a large problem. An NGO staff member and social activist in Ica (RP33-EG, 2012), stated that "... the system is corrupt and for this up to 90 per cent of wells in Ica are illegal. The authorities are failing to fulfil their responsibilities to the population." There are testimonies, even from within ANA, that well inspection assistants have taken bribes from agro-exporters to ignore illegal farm activity (Cancino, 2010). Farmers outside the asparagus industry voiced their concerns over corruption to me. An owner of an olive oil exporting business (RP57-FPG, 2012) stated that:

"...corruption is a widespread problem here, for example if you are not allowed to build a well you simply pay and you will be granted the licence. Another example is that you can extract more water than prohibited by paying more."

Another farmer explained that this is discrediting the reputation of ALA<sup>17</sup> in Ica (RP54-FPG, 2012):

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<sup>17</sup> ALAs are the Local Administrations of Water which are subsidiary organisations of ANA the National Authority of Water

“...the restrictions put forward by ALA are not respected due to widespread corruption. This means that large producers are able to do what they want. This is forcing smaller producers out of production.”

This environment has helped drive the over-exploitation of Ica’s aquifer. Ica has witnessed the abuse of power, not only by the agro-exporters but also by the local water authorities, which has come at the detriment of the population in the valley (Cancino, 2010).

#### 6.1.4 Additional Water Stress Factors in Ica

The withdrawal of the state in water management and the associated reductions in public funding have been identified in literature and interviews as key reasons for Ica’s water problems (Oré and Rap, 2009; RP29-EG, 2012; RP30-EG, 2012). Neoliberal policies created an authority vacuum which was filled by farmers who created water user boards to distribute water. Unfortunately, over time these boards have given priority to their own agricultural users over human consumption needs and ignored the natural limits of the aquifer (Oré and Rap, 2009).

The interviews collected for this thesis are particularly useful in understanding the conditions which have created water problems in Ica. A lack of long-term planning and the withdrawal of state regulatory powers were highlighted by academics in the field as central causes of water over-exploitation (RP29-EG, 2012; RP30-EG, 2012; RP44-EG, 2012; RP45-EG, 2012; RP46-EG, 2012). Similarly, mayors and community leaders in Ica believed the recent water regulations of 2009 have come too slow and consider water management to be both inefficient and chaotic (RP44-EG; 2012; RP28-EG; 2012; RP31-EG; 2012; RP42-EG, 2012; RP57-FPG; 2012). Both these groups believed that agro-exporters widely ignored and violated water regulations, such as the ban on new wells for agricultural use. As discussed, evidence shows this has been compounded by widespread corruption (Cancino, 2010; RP34-EG, 2012). Participants, particularly from social development and resource management organisations, felt water policies have prioritised agricultural use, specifically for agro-exports, over human consumption (RP32-EG, 2012; RP28-EG, 2012). One academic and social activist explained that this skewed system of priorities meant Ica served as an example of how not to manage water resources (RP34-EG, 2012). Farmers and processors generally complained the government has failed to take action to find technical solutions and again stressed that the public institutions in Ica are weak and ineffective (RP51-FPG 2012; RP56-FPG, 2012; RP53-FPG, 2012). Furthermore, these producers admitted that the government failed to control their operations. An engineer

from EMAPICA stated they lacked public investment and, therefore, cannot provide water for all of Ica's population. This engineer emphasised that blame could not exclusively be placed on the agro-exporters for lack of available water (RP42-EG, 2012). Similarly, a participant from a human rights organisation (RP32-EG) stated that; "We cannot solely blame water availability problems on the asparagus industry, the earthquake of 2007 affected the entire water system which has negatively impacted water availability..." This range of factors illustrates the complexity of the water problems in Ica and the need to keep a balanced perspective.

As shown, the water problems in Ica are multifaceted and it is therefore simplistic to place all the blame on the agro-exporters. Rapid migration to Ica, slow recovery from a damaging earthquake in 2007, and low public investment have compounded in stressing water and causing poor water availability in marginal areas. These are government responsibilities and it would, therefore, be unfair to place responsibility on the agro-exporters for these factors (Hepworth, et al, 2010).

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## 6.2 WATER NON-AVAILABILITY AND CONFLICT

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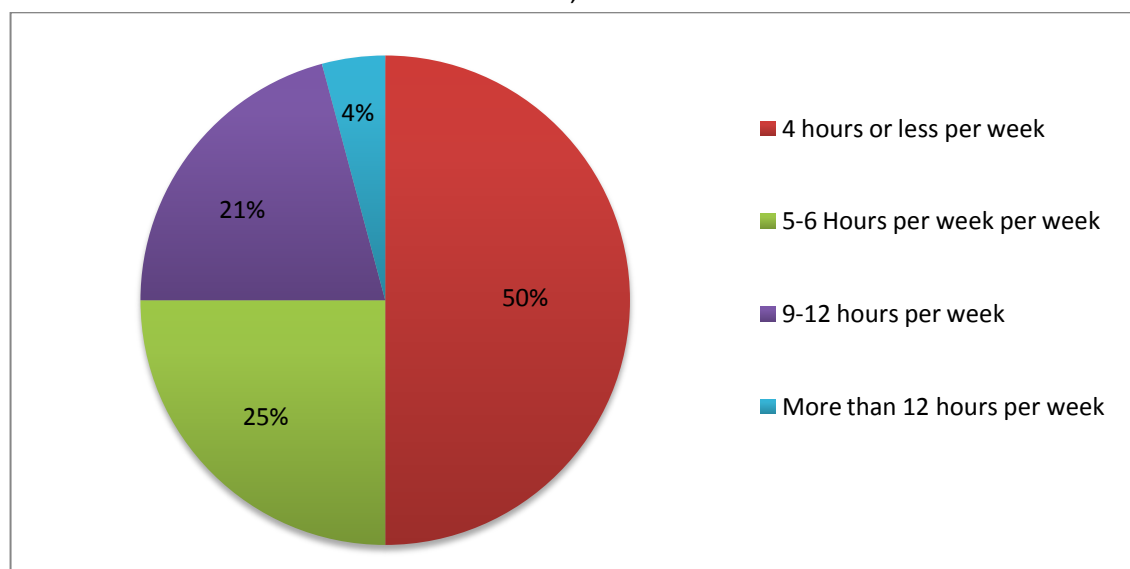
### 6.2.1 Water Non-Availability in Marginal Areas

As mentioned, deficiencies in public investment and damage from the 2007 earthquake means that Ica's public water infrastructure is already inadequate without the additional problems caused by the agro-export sectors and more specifically the asparagus industry (Hepworth, et al, 2010). A study in 2010, found that families in marginal areas of Ica are at present living on as little as 10 litres of water per person per day (Hepworth, et al, 2010). This is well below the 50 litres recommended by the WHO for the basic maintenance of health (Bartram and Howard, 2003).

A report by CODEHICA discovered the quantity of water available in marginal areas of the valley is not generally sufficient to support good health and water quality is sometimes poor (CODEHICA, 2010). This was reinforced by my research, which found that the majority of people living in *pueblos jóvenes* believed they lacked water and did not think of their water to be of a very good standard, with some saying it was too salty to drink. Various studies, including primary research, found that marginal areas on average received water for only three days a week and on these days water availability was limited to a few hours (Cancino, 2010; CODEHICA, 2010). Figure 7 highlights the low hours which people living in *pueblos jóvenes* receive water for. The CODEHICA report also revealed that 58.2 per cent of people in these areas believed the low quality of the water they received was negatively affecting their health

(CODEHICA, 2010). A researcher involved in this report told me that in the *pueblos jóvenes* water supplies were insufficient and they were sometimes contaminated with bacteria (RP32-EG; 2012). My research found that in some areas public water was extremely limited, for instance delivered once a month, or was simply not publically provided. In both these cases, already financially disadvantaged families were forced to buy water at high prices.

FIGURE 7: WATER PER HOURS PER WEEK RECEIVED IN SELECTED MARGINAL AREAS OF ICA, 2012



Source: Figure elaborated by author using primary research data.

### 6.2.2 Ica's Uncertain Water Future and Social Conflict

In Ica, rapid over-exploitation of the aquifer has created social conflicts between different stakeholders who are competing for the increasingly scarce water resources. This has been further exacerbated by the demands of the agro-exporters on the government for irrigation projects to recharge the aquifer (Oré, et al, 2011). These social conflicts have mounted following the increased water concentration by large agro-exporters and the negative implications this is having for smaller scale farmers, populations in rural villages, and urban areas in the valley as well as communities in the adjacent highland region of Huancavelica (Hepworth, et al, 2010).

Conversations as part of primary research, found the views of stakeholders in the valley to be extremely polarised which has fostered feelings of mistrust, bad will and blame games. Research by Hepworth, et al, (2010:44) similarly illustrates that;

*“On the one hand, the agro-exporters seemed to sometimes be unjustifiably demonised, but on the other, a handful of stories of intimidation, political manipulation and the Machiavellian*

*behaviour of some companies received credence by being independently verified by several sources."*

This polarised situation only obstructs co-operation and hinders opportunities to find solutions to the water problems which exist. Finding such solutions will benefit all involved in the valley except those who are purposely over-exploiting the water resources for their own gains (Hepworth, et al, 2010).

There have already been conflicts over access to water for drinking and irrigation, which have pitted large agro-exporters against small farmers and their rural and urban neighbours. In marginal urban areas conflict has arisen as agro-exporters have stripped populations of their potable water supplies (Oré, et al, 2011). According to a news report, conflict over water resources may escalate into violent water wars which could threaten Ica's agro-export boom (Schmall, 2010). This would be reminiscent to the 1950s, when the aquifer which supplied water to the cotton exporters temporarily collapsed leading to violent conflict in the Ica Valley (Schmall, 2010). In the same news report Federico Vaccari, the president of one of Ica's water use associations stated that; *"Fifty years ago, people here killed for water, and unless we do something, that is where we are headed,"* (Schmall, 2010). As mentioned, conflict has also been inter-regional with the regional governments of Ica and Huancavelica disagreeing over a proposal to divert water from Huancavelica to Ica. The proposal was met with a violent response from Huancavelica's population which argued this project would destroy the wetlands that they used to feed their livestock (Hepworth, et al, 2010). A lawsuit with the Latin American Water Tribunal in Mexico was won by the Carhuancho community of Huancavelica and the diversion project was paralysed (Oré, et al, 2011).

The confrontations discussed above illustrate how the over-exploitation of Ica's aquifer has created an escalation of social conflict around water access. The underlying factor has been the free market development model which has continued to favour the agro-exporters. This model has granted these agro-exporters with greater access to land and water in order to promote investment without seeking to achieve balance or find a long-term vision of sustainable development (Oré, et al, 2011). As will be explored in the subsequent sections, neoliberal policies have further favoured investors by loosening labour regulations to the detriment of workers. It is fair to say that as the aquifer is depleted further and as water scarcity grows it is likely these social conflicts will worsen with the potential to become violent.

### 6.2.3 Climate Change

As discussed in chapter four, climate change and the loss of glacial melt is likely to devastate future water supplies and exacerbate current water supply problems in Peru (Chevallier, et al, 2003). This will have serious implication for the highly populated Peruvian coast, especially in Lima and the irrigated agricultural zones to the north. If climate change predictions come to fruition and glacial melt is severely reduced, less water will be available for the agricultural, domestic, and power generation sectors causing greater competition over water (Lubovich, 2007). It is unclear how the glacier retreat will affect Ica, as its water storage infrastructure will lessen the problems associated with climate variations. Evidence does, however, show the variations in climate change are likely to be extremely negative for the poor populations living in the Andean regions neighbouring Ica. These highland areas are already suffering water problems due to Ica's unsustainable water use which hinders their abilities to build climate change resilience (Hepworth, et al, 2010). In line with this, Ica's unsustainable water use is expected to cause more problems for its poorer highland neighbours, therefore fuelling further regional inequalities and injustice in a climate change context.

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## 6.3 AGRO-EXPORTS AND EMPLOYMENT IN ICA

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### 6.3.1 The Employment Boom in Ica

While it is evident that the agro-exporters, and in particular the asparagus exporters, are causing detrimental environmental and social impacts we must avoid demonising them and also acknowledge the positive contributions of the sector.

Importantly, 40 per cent of Ica's working population are employed in the agro-export sector, with the rapid expansion of this sector helping to lower unemployment to nearly zero per cent in Ica. Between 1998 and 2005 the agro-export boom, especially in asparagus, has generated over 10,000 jobs for marginalised people in Ica (Hepworth, et al, 2010). In addition to the employment generated for marginal groups, the growth of the agro-exports has created employment for a range of other people including technicians and engineers (Marshall, 2012). These factors are significant in a country which suffers from high and chronic unemployment and underemployment. As a result, the two agro-industrial regions of Ica and La Libertad both now experience unemployment well below the national average of 10 per cent (Fernandez-Maldonado, 2006). A representative from AAI and the Groundwater Users' Board of the Ica Valley or *Junta de Usuarios de Aguas Subterráneas del Valle de Ica* (JUASVI) explained that in the past Ica lacked jobs but now it is one of the few places in Peru free from unemployment thanks to the employment provided by the agro-exporters (RP47-EG, 2012). It is estimated the

Peruvian asparagus industry employs between 55,000-85,000 people (Solidarity Center, 2009; Fern, 2008; RP35-EG, 2012). Some local officials and experts - while acknowledging the water problems created - emphasised the importance of the agro-export expansion and asparagus boom for job creation in Ica, particularly for poor groups. Participants in the *pueblos jóvenes* often complained about low pay and long hours but stated they believed the agro-exporters were positive for them as they provided a source of income.

Due to the importance of these jobs, the loss of the agro-export and asparagus industries would have negative implications for many people in Ica who rely on the sector for employment. Furthermore, the loss of these industries could have negative impacts on local poverty rates as many agro-export employees come from marginalised groups (Hepworth, et al, 2010). A representative from AAI (RP48-EG, 2012) stated that "...if the government fails to complete a mass irrigation project then the agro-exporters will be forced to leave Ica". This, he said, would "...most negatively effect the poor as they will lose their sources of income". In sum, it is very important to consider the positive outcomes the asparagus industry has had in Ica. The withdrawal of the industry will likely push many already marginalised Peruvians into worsened levels of poverty and hinder the overall economic development in Ica.

### 6.3.2 The Absence of Social Protection in Agro-exports

While it is clear that the asparagus boom and the expansion of the agro-export industries have generated much needed employment opportunities, it is important to analyse this phenomena more critically. The neoliberal policies which have supported the development of the agro-export sector have also been detrimental to workers' rights by removing social protection. This section will explain how.

The use of short term contracts in the agricultural export sector has been particularly negative for the rights of labourers. In 2000, the Peruvian parliament passed Law 27360 which removed many protections for asparagus and other agro-industrial labourers. Law 27630 led to the proliferation of six month contracts in the agro-export industries (Solidarity Center, 2009). These contracts are seen as "short-term", however, an employee can be re-hired on these contracts for years (Fernandez-Maldonado, 2006). These flexible contracts mean employers are able to suspend or terminate a worker's contract at almost any time without notice or severance pay. This has created an environment where the employer holds all of the power. For example, if an employee attempts to complain about working conditions or unionise the employer is able to suspend their contract without due reason (Solidarity Center, 2009; Alliance for Labor Rights Peru, 2007).



Law 27360 has also allowed employers to force their employees to work over-time without compensation. The law means agricultural workers now work to an “accumulated workday” principle rather than the standard eight hour day. This means overtime pay is only required when the average work day over the complete contract exceeds eight hours (Solidarity Center, 2009; Fernandez-Maldonado, 2006). According to staff at the Solidarity Center (2009:17); *“Under this law, an employer can require a 20-hour workday and not have to pay overtime as long as the average workday for the contract period averages eight hours or less.”*

Additionally, the wages in Ica’s asparagus industry are extremely unequal: while the top paid 10 per cent of employees receive nearly 42 per cent of the wages the lowest paid 40 per cent only receive 11 per cent. Moreover, between 2000-2004 when asparagus started booming in Ica the average salary increase of industry executives was 51 per cent, however, asparagus labourers only experienced a 1 per cent increase (Centro de Asesoría Laboral del Perú, Accessed 2012). This illustrates how unevenly the economic benefits of Peru’s neoliberal development approach are being distributed in Ica.

While not labelled as a risky activity under Peruvian law, employees of the agro-industry experience a number of health and safety risks. Evidence shows that respiratory diseases, contact poisoning from agricultural chemicals, skin damage from excessive sun, and ergonomic problems such as back pain and kidney infections are common among agricultural workers (Fernandez-Maldonado, 2006). According to a study undertaken in 2006 over 72 per cent of the agricultural workers interviewed said they had not been trained in preventive measures of health and safety at work, with less than 62 per cent of these employees believing companies took preventive occupational health measures (Fernandez-Maldonado, 2006). A recent news report in Ica’s newspaper ‘*La Voz de Ica*’ serves as an example of this lack of protection and the health risks for those working in the asparagus and agro-export sectors. It reported that 12 workers from “Beta”, an agro-exporter, arrived at a hospital in Ica with vomiting, nausea, headache and other symptoms due to high levels of intoxication by inhaling an insecticide when harvesting asparagus (Huamaní, 2012). These workers stated it was not the first time a similar event had happened and they were resigned to the fact that had to go through these situations. They said they did not trust the regional labour authorities who did little to punish those in the industry who practised such negligence (Huamaní, 2012). Table 2 summarises some of the key problems faced by the labourers of agro-exporters.

TABLE 2: PRECARIOUS LABOUR CONDITIONS IN PERU'S AGRICULTURAL INDUSTRY

1. Social benefits given to agricultural labourers are half of what is normally given to a pay-rolled employee.
2. Wages are low, rarely totalling the monthly minimum salary of US\$156.
3. In the case of a dismissal, these workers receive a compensation package that is three times less than that of their pay-rolled counterparts.
4. Six-month contracts are most common, with renewals depending exclusively on the employer's will, allowing business-owners to punish workers who want to unionise.
5. Workdays are often longer than eight hours and overtime is not paid.
6. There are no unions, impeding collective bargaining and an improved distribution of benefits generated by the country's export boom.

Source: Adapted from Centro de Asesoría Laboral del Perú, Accessed 2012

### 6.3.3 Women Workers and the Peruvian Asparagus Industry

In the asparagus industry, 70 per cent of field workers and 95 per cent of workers in the processing plants are women (Fern, 2008). These women suffer disproportionately from the precarious labour situation of the agro-export sector. They are confined mainly to entry level positions and are on short term contracts with little prospects of advancing (Solidarity Center, 2009). Men in the sector are privileged in training and given supervisory roles which provide all year-round employment as opposed to the seasonal roles which women receive (Fern, 2008). Most of these women earn barely enough money to pay for their breakfast and lunch, let alone support their families (Calisaya and Flores, 2006).

Asparagus companies select women as they are more likely to accept seasonal contracts than their male counterparts. They are also selected for sexist notions that they are needed for 'feminine tasks', such as meticulous jobs and fine motor skills (Calisaya and Flores, 2006). Many of the women employed in the asparagus industry have had very little or no experience in salaried work. Moreover, a large percentage of them have migrated to Ica in search of work and thus have little support from a social network. For these reasons women are often unaware of the rights and protections they are entitled to by law and employers take advantage of this (Fern, 2008). Reports show that agro-exporters in Peru exclude pregnant women from the sector, who under Peruvian law, are entitled to temporary work in a more suitable position and paid maternity leave (Calisaya and Flores, 2006). In cases where the employee is found to be pregnant they are often illegally fired. Agro-exporters are able to fire women in such an unjust matter since there is no worker representation and flexible contracts work against the employees (International Labor Rights Forum, 2008). In short, these women

encounter widespread discrimination which is intertwined with labour rights abuses and gender inequalities (Fern, 2008).

In 2009, Peru suffered from a 16 per cent reduction in agricultural exports which was attributed to the economic crises in the U.S. and the European Union which are both important destinations for Peruvian agro-exports. This decline resulted in a 30 per cent decline in the demand for labour in the agro-export sector (Arguello, 2010). In Ica, the effects of this were heavily felt by the women who make up the large percentage of the agro-export employment. Many lost their jobs or were forced to work even longer hours for sometimes less pay. The crisis has in turn worsened an already precarious labour situation (Arguello, 2010).

#### 6.3.4 The Precarious Labour Situation in Peru

The absence of social protections in the agro-export sector gives an insight into the precarious labour situation which exists in Peru. It also highlights how neoliberal policies and law changes have worsened this situation. This section will briefly demonstrate how the lack of labour protection is also a problem for the greater Peruvian labour force.

Much of Peru's workforce suffers from a precarious employment situation. For instance, out of the economically active population (EAP) 9.7 per cent are unemployed while 45 per cent are underemployed. Additionally, a mere 3 per cent of employees in the private sector are unionised while there are practically no unions for those in the public sector (Centro de Asesoría Laboral del Perú, Accessed 2012). Table 3 illustrates how many workers in the informal and formal sectors in Peru experience a range of employment problems, albeit different ones. Furthermore, there is no general or unified labour code in Peru. Instead labour regulation and laws are dotted through different Peruvian laws. The absence of a unified labour law disperses labour standards and thus generates confusion which provides Peruvian employers with opportunities to exploit their employees (Verdera, 2001).

TABLE 3: EMPLOYMENT PROBLEMS EXPERIENCED BY MANY PERUVIAN WORKERS

Formal sector Employs 4 of every 10 workers who:	Informal sector Employs 6 of every 10 workers who:
<ul style="list-style-type: none"> <li>• Face a high turnover rate</li> <li>• In nearly half of all cases, have temporary work contracts that translate into little job stability</li> <li>• Risk on the job hazards because of the lack of security and hygiene standards</li> <li>• Face extensive use of intermediaries in contracting (outsourcing), leading to evasion of workers' rights</li> <li>• Face severe restrictions to the exercise of union rights</li> </ul>	<ul style="list-style-type: none"> <li>• Are not on a payroll</li> <li>• Have no social security</li> <li>• Are not protected against on-the-job accidents</li> <li>• Work in conditions with no hygienic or safety standards</li> <li>• Are not protected by labour laws</li> <li>• Receive low salaries and have little purchasing power</li> </ul>

Source: Adapted from Centro de Asesoría Laboral del Perú, Accessed 2012.

Peru acknowledges a number of international laws which recognise workers' rights as human rights including the International Labor Organisation's (ILO) Declaration on Fundamental Principles and Rights at Work which Peru ratified in 1998. This declaration infers the elimination of child labour, forced labour, and workplace discrimination, while respecting the principles of equality, the freedom of association, and collective bargaining (Centro de Asesoría Laboral del Perú, Accessed 2012). While respected by official policies the practical application of these norms often falls short. For instance, social protection and labour regulations do not apply to the majority of new jobs created and collective bargaining is essentially non-existent (Verdera, 2001). This is because the Peruvian labour laws fail to follow the international conventions of the ILO. Moreover, the legal structures formed by international and national norms and laws are not usually enforced effectively. This has particularly been the case with reference to laws which affect worker rights to form unions, to bargain collectively, to strike, and to exercise other basic labour rights (Solidarity Center, 2009). These issues emanate from the lack of a unified or general labour code in Peru, the lack of enforcement of existing laws, and finally due to structural underemployment which ensures a reserve of mass labour.

As shown through the case of agro-export employees, a number of neoliberal policies have been at the detriment of workers' rights in Peru. Evidence from the Inter-American Development Bank demonstrates that through the period with the most rapid growth in new jobs (2001-2005) employment market conditions have worsened. For instance, the amount of people working over 48 hours a week in this period increased, as well as the number of employees working without labour contracts who are thereby not entitled to social protection

(Inter-American Development Bank, 2007; Márquez and Prada, 2007). These, and other negative employment statistics discussed in previous sections, demonstrate how the neoliberal approach introduced by President Fujimori and adopted by his successors has only focused on the macro-economic state of Peru while social equality and the even spread of the economic benefits have not been prioritised (Verdera, 2001). In fact, successive governments have utilised state authority to repress workers' demands of workplace equality and wage increases<sup>18</sup> (Solidarity Center, 2009). This is because neoliberal policies which promote investment have also removed workers' protections as explained previously. Moreover, the financial gains of macro-economic growth have been heavily concentrated in the executive levels of business and industry in Peru (Campodónico, 2008). Again this was demonstrated earlier, through the case of pay structures in the asparagus industry.

Workers' rights advocates have been vocal in their dismay with the large inequalities and injustices which have been created by Peru's neoliberal model. As asserted by Béjar (2008: NA),

*"Since its inception in 1990, the neoliberal programme has produced a chain of systematic violations of the rights to life, to decent employment, to a healthy environment and especially to the rights of women. The right of workers to enjoy job stability is considered by the powerful to be an unacceptable privilege, while strikes and protests are turned into crimes against investments..."*

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## 6.4 INWARD MIGRATION AND FURTHER STRESS ON ICA'S AQUIFER

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Inward migration and population growth along the Peruvian coast, including in Ica, increased in the 1980s and 1990s. This was largely driven by the political unrest associated with the Shining Path movement mentioned in chapter three. Additionally, the reversal of the 1960s and 1970s agrarian reforms exacerbated the divide between traditional Andean and modern coastal agricultural which drove more migrants to the coast. These Andean migrants now make up the large percentage of the agricultural labour force in Ica (Hepworth, et al, 2010). The employment generated by the large asparagus exporters in Ica has meant this process of mass inward migration has continued in present times (Marshall, 2012).

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<sup>18</sup> For examples state repression of workers' rights in Peru see; Solidarity Center (2009). *Peruvian Society, Workers, and Labor Law*. From; [www.solidaritycenter.org/files/policybrief\\_peru.pdf](http://www.solidaritycenter.org/files/policybrief_peru.pdf)

Research interviews revealed that, attracted by the employment provided by the agro-export industry, Andean migrants continue to move into marginal and once uninhabited areas on the outskirts of Ica city. This influx of migrants and the resulting population growth is putting additional stress on Ica's already over-exploited aquifer (RP35-EG, 2012; RP46-EG, 2012; RP44-EG, 2012). An academic expert in Lima explained that a paradox has emerged; while the asparagus industry brings many people to Ica for work, the industry's over-exploitation of groundwater means there is not enough water available for the marginal groups it attracts (RP46-EG, 2012). A study in 2011 found urban marginal areas in Ica are growing extremely fast. For instance, it found that the area of San Antonio in Ica had 15 houses in 2000 while it now has over 300. The same study showed that the large problem is providing basic services, such as water, for these growing populations (CEPES, 2011). While it is clear that this continuous flow of migrants to Ica is negatively impacting Ica's water reserves, there are little studies about the exact effect this is having on the aquifer. It is also clear these migrants are already feeling the brunt of water over-exploitation and little water has been made available to them in comparison to the agro-exporters (Hepworth, et al, 2010). There are many cases, however, where the agro-exporters are providing water to these marginal populations (CEPES, 2011) yet this remains limited to three or less days per week.

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## 6.5 PERUVIAN ASPARAGUS: MODERN DAY RESOURCE CURSE?

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Dependency and structuralist analysis can be used to critically study Ica's asparagus boom. As discussed in chapter three, at the crux of neoliberal reorientation has been the development of NTAXs in parts of Latin America in order to exploit their 'comparative advantages'. The 'development' created has been based on the exploitation of certain natural resources (Barham, *et al*, 1992; Murray, 2009). As explained, a key critique of this model is the resource curse theory or thesis. The resource curse thesis that argues resource endowment can actually hinder development by creating over-reliance and unequal benefits (Auty, 1995). Evidence shows Ica is experiencing a range of similar problems due to the rapid development in its NTAX sector, particularly in asparagus. Ica's asparagus boom of the late 1990s and 2000s represents a modern day example of the resource curse. The over-reliance on a crop which depends on an unsustainable amount of water in Ica's desert illustrates the resource curse paradox well. The over-exploitation of groundwater and the precarious working conditions suggest Ica's comparative advantage in asparagus production is to the detriment of the marginalised population and the natural environment. Moreover, the agro-exporters in Ica represent an enclave economy as there is very little connection with the valley's social and cultural

environment while the head offices are located in Lima (CEPES, 2011). While macro-economic growth has been achieved, little has been done to counter inequality as the weakened state has been both unable and unwilling to regulate groundwater, allowing the asparagus industry to drive over-exploitation. What has ensued is an uneven and exclusive form of development in the Ica Valley.

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## 6.6 CHAPTER CONCLUSIONS

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This chapter has demonstrated that Ica's aquifer is in a state of over-exploitation which has been primarily driven by the expansion of the agro-export sector and in particular the asparagus industry. It was also explained that Ica's situation is very complex and there are a number of additional factors which contribute to Ica's water availability problems. These include a lack of public investment, earthquake damage and a slow recovery, as well as rapidly growing population. The importance of the agro-export sector for generating employment, especially for marginal groups was also explored. While this has had a positive impact on unemployment, this chapter highlights how many of the created jobs are precarious, especially for women employees, due to the lack of solid labour protection in Peru. It also argues that flexible labour changes brought in with neoliberal policies have only worsened this situation. Furthermore, it was discussed that the influx of Andean migrants has put further pressure on the aquifer. Finally, it was noted the Ica's asparagus industry represents a modern day resource curse theory as its development has created aquifer overexploitation and hardship in the valley's marginal areas.

## CHAPTER SEVEN

### MARGINALISED VOICES: VIEWS FROM ICA'S PUEBLOS JÓVENES

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The chapter serves to demonstrate some of the larger themes of the thesis at the local scale. It achieves this by exploring the realities of life in the *pueblos jóvenes*, in Ica. In doing so, it portrays some of the ways in which Peru's neoliberal approach is affecting the more vulnerable parts of society in Ica. The dialogue places particular emphasis on urban marginal groups and their experiences with water, resource management and the agro-export sector as obtained from research interviews. This has built a practical critique of Peru's neoliberal model and the resulting expansion of the asparagus export industry in Ica.

The chapter begins with a contextualisation of the *pueblos jóvenes* which provides basic information about each of the towns studied. Subsequently, the chapter is broken down into central themes which are portrayed through individual case studies. To finish, a chapter summary and link to the discussions chapter is presented.

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#### 7.1 CONTEXTUALISATION

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The majority of people who live in the *pueblos jóvenes* of Ica are poor national migrants, particularly from the *sierra* but also from the *selva* region (Hepworth, et al, 2010). As mentioned, over the last 20 years these migrants have been attracted to Ica by the work generated by the agro-export sector. These migrants have mainly established residence in marginal areas, often in once uninhabited parts of the desert (Marshall, 2012). It is therefore no surprise that interviews revealed a large percentage of the people who live in the *pueblos jóvenes* work as low paid labourers for the agro-export sector. As is also discussed, these employees suffer precarious work situations under short-term and seasonal contracts meaning they often suffer periods of unemployment (Solidarity Center, 2009).

Generally speaking, housing in these *pueblos jóvenes* is inadequate. They are most commonly made from very basic and cheap materials, such as *esteras* - a type of bamboo (Tilley, 2007). According to a representative of The Front for the Defence and Development of the Young Towns and Populated Centres of Ica or *Frente de Defensa de los Pueblos Jovenes y*



*Urbanizaciones Populares* (FREDEPJUP), this provides families with little security or protection against the natural elements (RP35-EG; 2012). Plate 4 on the following page gives an example of this basic housing. These towns also suffer from inadequate public services, most importantly they lack available water for drinking, sanitation, and sewage (CODEHICA, 2010). Participants throughout the studied towns explained water seemed to be less available than in the past and they were concerned about the future of water in their communities.

In terms of asparagus, the interviews uncovered clear connections between the agro-export sector and marginal urban groups. These connections are strikingly obvious in the *pueblos jóvenes* as many of the people who live in these areas work in the agro-export sector. Interviews also revealed these groups are now economically dependent on the sector. The following subsection will briefly introduce the *pueblos jóvenes* studied in this thesis. Population numbers are estimations made with the help of local knowledge since official data not available.

PLATE 4: HOUSING IN THE PUEBLO JOVEN “LA NUEVA ESPERANZA” TO THE NORTH OF ICA CITY



Plate 4 Shows housing made from basic and natural materials. The crops in the background are export-asparagus, showing the proximity of the town to the farms of agro-exporters. Source: Taken by author.

### ***La Nueva Esperanza***

La Nueva Esperanza is a *pueblo joven* to the north of central Ica in the locality of Guadalupe. It is one of the largest *pueblos jóvenes* in Ica with a population of around 7000. Interviews discovered a high per cent of residents from La Nueva Esperanza are from the highlands of Peru. Many work in the asparagus industry or are connected to it through family. While some participants had recently migrated to the town, many others migrated to Ica over a decade ago

yet continue to live in precarious conditions. Interviews confirmed that La Nueva Esperanza experiences chronic lack of water. Public potable water is only supplied three times a week and on these days water is available for two to four hours depending on the part of town. The town itself is located in an agro-industrial hub, and is surrounded by tomato and asparagus crops. Housing in the town is inadequate, mainly constructed from natural materials like *esteras*, while the roads remained unpaved.

### ***Eduardo Espinoza***

The town of Eduardo Espinoza is located close to La Nueva Esperanza in Guadalupe in the same agro-industrial hub. It is a large *pueblo joven* with a population of over 5000 despite the fact that it was formally founded in 2012. This reflects the immigration in Ica; large numbers of people continue to move into marginal areas searching for employment in the agro-export sector. The water situation in Eduardo Espinoza is somewhat difficult to summarise as it is a new settlement on a large scale. However in general, the population received public water three days a week and with hours on these days varying from one and a half hours in one part of the town to three to six hours in other parts. Other participants in Eduardo Espinoza are forced to buy water transported by truck as public water has not yet been made available to them. Again, while newly constructed, the population live in houses built from basic and inadequate materials and the roads remain unpaved.

### ***Las Torres***

Las Torres is a smaller *pueblo joven* with a population between 1500-2000 people. It is located in the area of La Tinguiña to the east of central Ica. Like La Nueva Esperanza and Eduardo Espinoza, Las Torres is located close to some large agro-exporters. Similarly, most people make their incomes through the agro-export sector while housing is again basic and the roads are unpaved. Parts of La Tinguiña receive public water, but this does not reach Las Torres. The population is therefore forced to pay for water to be transported by truck or use the well of a local church for a charge. As will be further discussed, this has generated a lot of resentment towards the local council which the population blames for the absence of available public water. Las Torres is one of the most extreme cases of water non-availability of the towns studied and its exclusion from public water will be more deeply explored in the subsequent section.

### ***San Martín***

San Martín is one of the oldest and most established *pueblo joven* studied. It is a medium sized *pueblo joven* with a population of around 2000-3000 people. It is located just to the north of

central Ica. Again, roads are unpaved but housing is built from more permanent materials than seen in the other *pueblos jóvenes* studied. While many people who live in San Martín work in the agro-export sector, the majority of them were born in Ica and thereby do not contribute to the Ica's rapid inward migration. San Martín, is however, water stressed, with the town only receiving water every second day for an hour. Long-term residents of San Martín complained about reductions in the water available to them over time and said they were concerned for the future of water availability in their community.

### ***Mendoza***

Mendoza is a small sized *pueblo joven* of fewer than 2000 people. It is located in one of the most water stressed parts of Ica, Pachacutec, located to the south of central Ica. Many agro-exporters are located around Pachacutec and they dominate local supplies of groundwater. The housing in Mendoza is again basic yet more permanent than that seen in La Nueva Esperanza and Eduardo Espinoza. The majority of participants work in the agro-export sector, particularly in grape rather than asparagus farming. Water availability is very limited, restricted to two days a week and only for around two to three hours on these days. There is a large concern that water is continuing to dry up in Mendoza and the population feels excluded by the authorities.

### ***La Castellana and Los Castillos***

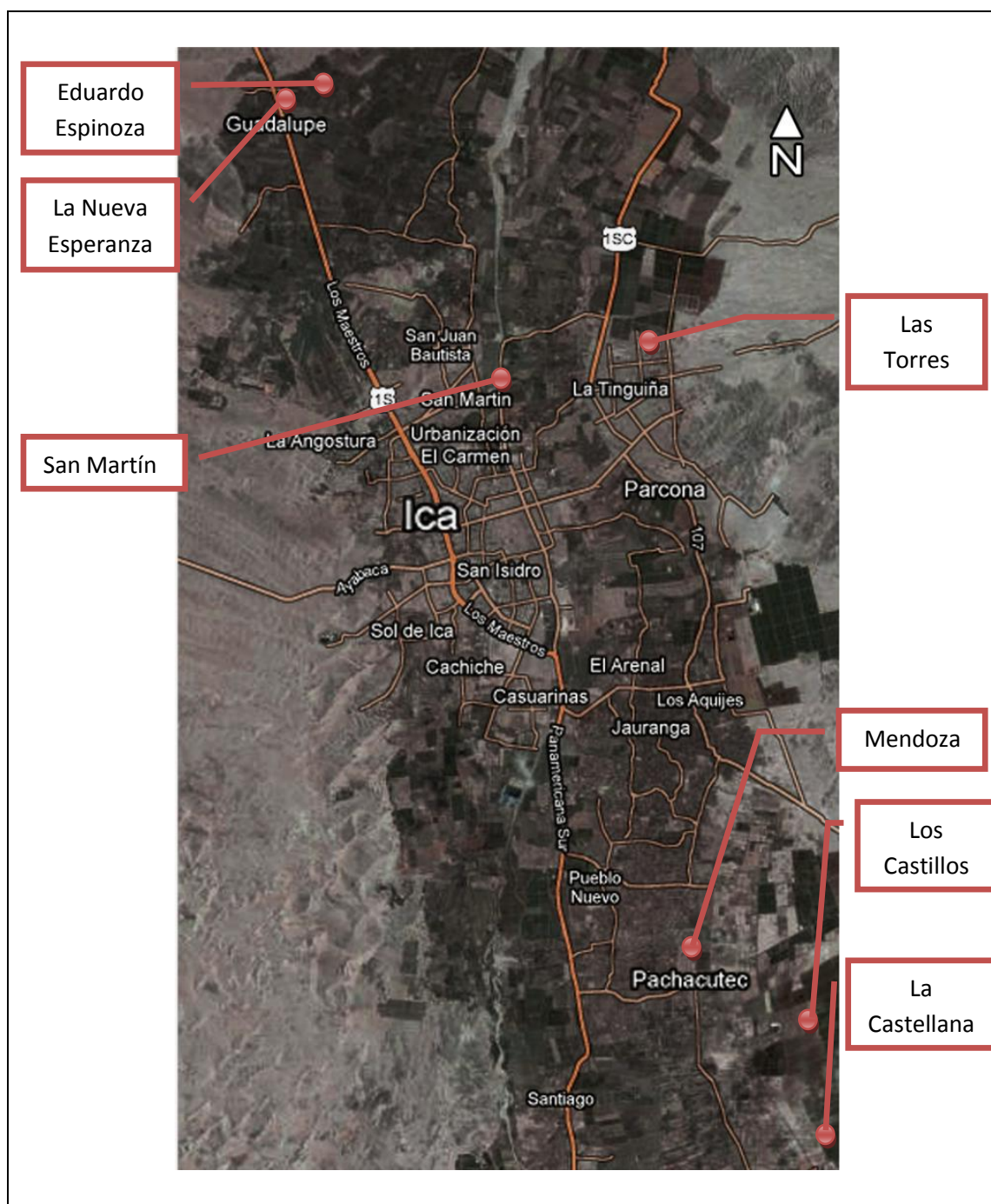
La Castellana and Los Castillos are two very small *pueblos jóvenes* both with less than 200 people. They are located in the area of Santiago, to the south of central Ica. Both towns are completely surrounded by large agro-exporters and nearly all those interviewed worked on these farms or had a family member who did. Public water is virtually unavailable in the towns, sometimes arriving as little as once a month by truck. The populations are forced to use water supplied by the agro-exporters which is only given twice a week and only for a couple of hours on these days. Participants complained the water is salty and the quality is worsening. Many said they were unable to drink this water and had to go to the city and buy relatively expensive water. Participants resented the authorities for this, and said they were tired of the false promises about bringing potable water to their towns and felt they had been abandoned. Table 4 compares and summarised these towns while Plate 5 illustrates where each of these towns are approximately located.

TABLE 4: COMPARATIVE TABLE OF STUDIED PUEBLOS JÓVENES

District	Population (Approximate)	Hours with water (Per week)
Eduardo Espinoza	5000	6-12
La Nueva Esperanza	7000	4.5-12
San Martín	2000-3000	4
Las Torres	1500-2000	No public water arrives
Mendoza	2000	4-6
Los Castillos	200	4 (Provided by agro-exporters). Public water provided irregularly
La Castellana	200	4 (Provided by agro-exporters). Public water provided irregularly

Source: Elaborated by author using primary data.

PLATE 5: LOCATIONS OF TOWNS STUDIED IN THE ICA VALLEY



Source: Adapted from Google Maps, Accessed 2013

## 7.2 CASE STUDIES AND FINDINGS

This section explores central themes through the use of individual case studies at the micro-scale in the *pueblos jóvenes* outlined. These case studies are by no means an attempt to generalise, but instead they highlight some of the important themes developed from my field research experience.

### 7.2.1 The Exclusion of Marginal Urban Groups from Water Management

The case studies below show that there is the view amongst participants that the government is failing to provide the populations of the *pueblos jóvenes* with potable water. Moreover, the interviews show that this population feels their needs are not being prioritised and they feel excluded from resource management processes. These cases give an insight into the difficulties and concerns this exclusion is generating. All of the names throughout these sections are fictional to protect the identity of the participants.

#### ***María from La Nueva Esperanza***

María (RP2-CSG) has lived in La Nueva Esperanza for 16 years. She moved there from one of Peru's poorest highland region, Huancavelica with her family in search of work. She told me she is now supported by her husband who works in the asparagus export industry but is paid very little. Like most of the population in La Nueva Esperanza, María receives her water from a public well which only provides water for three days a week and on these days the well supplies water for two to three hours. This, she says "...is very bad as there isn't enough water and people in town argue over what the problem is." María does not feel included in water management as she believes the authorities fail to communicate with the population. She feels this is because the large agro-exporters have all the control, while the government is failing to restrict their water use and therefore the water available for the population is reducing. María says she would feel more included if the authorities would respect the rights of the population and think of the future of the country. She is very concerned about the lack of responsible water management in Ica and anxiously says she is worried about the future of water for her children.

#### ***Carlos from Mendoza***

Carlos (RP5-CSG, 2012) was born in Mendoza and has lived there all of his life. He works in the agro-export sector, but not asparagus. Carlos too claims to be paid very little. The water deficiencies in Mendoza described by Carlos are drastic. He says they only receive water from a public well for two days per week and it only provides water for one to two hours on these days. He continued to explain they seriously lack water and sometimes do not have any. Carlos believes the government needs to put the water needs of the population first, stating that "If the water dries up the people will not be able to live here". He asserts that the large agro-exporters are acting irresponsibly; while they are able to arrive and leave easily the population cannot and the government needs to mitigate this problem. Carlos is also concerned about the

future of water in his community saying that “...If things continue as they are there won’t be any water in our town in the next four to five years.”

### 7.2.2 Resentment Towards the Authorities

This section shows that in general the populations in the *pueblos jóvenes* hold some resentment against the authorities for the lack of available water. As illustrated through the cases below, participants in the towns often complained that the authorities were doing very little to find solutions to the water problems. The cases also show how participants felt excluded from water management processes, while more disgruntled participants said they felt forgotten and cheated by the authorities who failed to fulfil their promises. Case studies also revealed that resentment towards the authorities is especially prominent in the areas where public water is extremely limited such as the towns of Las Torres, La Castellana, and Los Castillos. Plate 6 shows water arriving by a privately owned truck to Las Torres.

#### ***Julia from Las Torres***

Julia (RP15-CSG, 2012) is from the highland region of Ayacucho but has been living in Ica for 20 years. She now lives in the *pueblo joven* Las Torres in La Tinguiña where she makes a living running a small shop she owns. While this helps Julia support her family, she says she needs more money and wants more work. She tells me she is forced to buy water three times a month as public water doesn’t arrive to her part of town. She resents the council for its lack of support in Las Torres, stating that “The largest problem is that the council doesn’t do enough...”. She feels excluded from water management processes and complains the population desperately needs a public supply of water. Interestingly, like other participants in Las Torres, Julia does not believe the asparagus export industry is negatively affecting local water supplies. Instead, she attributes the water availability problems solely to authorities’ lack of action.

#### ***Jorge from La Castellana***

Jorge (RP19-CSG, 2012) is from Ica and lives in the small *pueblo joven* of La Castellana. Jorge works in the asparagus industry but says he does not make enough income for his family’s needs. As mentioned, La Castellana receives very little water from the state and Jorge informed me they are forced to rely on water provided by the agro-exporters. However, “These exporters don’t give us enough water” Jorge says, complaining they only receive water for three hours a week. Additionally he complains that “This water is too salty so we have to bring drinking water from central”. This is both a costly and time consuming task. Other interviews in La Castellana found that while families know the water is salty, some continue to



drink it anyway as they cannot afford to buy water. Jorge feels abandoned by the authorities as they fail to provide the population with a constant source of water. The mayor, Jorge says, “...fails to keep his promises about new water projects and we feel cheated”. It is clear that participants like Jorge resent the authorities and feel excluded from the management of water resources.

It is important to note that some participants felt included in the water management due to the existing water projects and water management meetings that which place in their communities. For example, Adriana from the town of San Martín (RP25-CSG, 2012) stated that she felt included in water management as “...there are meetings where we can voice our opinions and try and find solutions to the problems that exist”. Other participants, however, said these meetings were not conducive to community involvement. For instance Rosa, another participant from San Martín, (RP26-CSG, 2012) said the communication between the authorities and the community was meaningless, “They [the authorities] make the decisions and talk to us after...”

PLATE 6: WATER ARRIVING BY PRIVATE TRUCK TO LAS TORRES



Plate 6 illustrates how water arrives by privately owned trucks in areas where public water is very limited. In these areas the populations are forced to pay higher prices for water. Source: Taken by author



### 7.2.3 The Asparagus Industry: Economic Development and Dependence

The case studies below show that some of the population in the *pueblos jóvenes* view the expansion of the asparagus industry as a positive development. This is due to employment it generates, especially for marginalised groups. In these cases the participants acknowledge that many people who live in their towns work for agro-exporters.

#### ***Jorge from La Castellana***

Previously, I discussed the case of Jorge from La Castellana (RP19-CSG, 2012). Jorge and his family work in the asparagus industry as agricultural labourers. When I asked Jorge what he thought about the industry's growth, he told me that "...without the agro-exporters we wouldn't have employment here and wouldn't be able to support ourselves so I believe they are something good".

#### ***Ana from La Castellana***

Similarly, Ana (RP16-CSG, 2012) an elderly participant from the small *pueblo joven* of Los Castillos believes the growth of asparagus industry has been positive. Ana further explained that in the past there was not any work for the people in her town and that "...the agro-export sector has helped them escape unemployment". Many other participants recalled similar cases where the agro-export sector, particularly in asparagus, has improved their economic situations and provided them with work. As already discussed, this is extremely important and needs to be recognised when we critically study the development of Ica's asparagus industry.

This generation of employment and the associated economic development does, however, have a negative side. While the growth of the agro-export sector in Ica has supported marginalised groups economically it has also driven economic dependence of the marginalised population on the agro-exporters which hire them. A water consultant in Lima commented that this dependence means marginalised people in Ica are unable to complain about poor working conditions, low pay, or their water problems as they are under the control of the agro-exporters which hire them (RP28-EG, 2012).

### 7.2.4 Resentment Towards the Agro-Exporters

While the participants above were quick to discuss the benefits of the asparagus industry others were ready to voice their resentment towards the industry. The cases below illustrate how some people in the *pueblos jóvenes* are becoming angry with the agro-exporters and how they treat their employees. These cases demonstrate the population is aware of the role of agro-exporters in the over-exploitation of water with many blaming the industry for the lack of

available water. These cases also explain that the over-exploitation of water for agriculture is creating concerns in the *pueblos jóvenes* over the future of water availability.

***Carolina from Eduardo Espinoza***

Carolina (RP7-CSG, 2012) from the *pueblo joven* of Eduardo Espinoza is a good example of this. She works for agro-exporters and acknowledges the importance of the asparagus industry for the work it creates for people like her. However, Carolina feels the agro-exporters mistreat their employees. She says, “We are paid very little while the hours we work are very long leaving little time to rest or for our families”. She also believes water resources are being over used by the agro-exporters as asparagus crops need a lot of water. She resents the agro-exporters for their water use, saying “...the agro-exporters only want to benefit from asparagus and by doing so they are ignoring the population’s water needs.” Caroline is concerned this will mean future water supplies will run out in her community.

***Manuel from San Martín***

Manuel (RP24-CSG, 2012) lives in San Martín and works in the asparagus industry. He too complains that the pay is not enough and the work in the country is exhausting. He says his town has little water and blames this on the agro-export sector. He told me that “There are too many wells, many of which are illegal, that are taking too much water and leaving little for us”. Like Carolina, Manuel sees the asparagus industry as something positive for the work it has created, however, feels it is taking too much water and the population is powerless to stop this. Due to this, Manuel is worried about what will happen in the future saying “...in the next few years Ica may be left with no water”.

***Karla from La Nueva Esperanza***

Karla (RP3-CSG, 2012) has live in La Nueva Esperanza for 10 years after moving from - Ayacucho like many others in the town. Karla works as an agricultural labourer for various agro-exporters. As discussed, water is restricted in La Nueva Esperanza to three day a week for a few hours on these days. Karla blames much of the water availability problems on the agro-exporters and the large amounts of water they use. She told me that “The largest problem is that the large agro-exporters are building too many pozos to water their crops which is diminishing the water available for us [the population]”. Karla explained she is worried that over time, as the agro-exporters continue to build more wells, there will be less and less water for the population. She feels excluded from water management and she believes the agro-exporters have too much control. “If the government was to better control these agro-exporters there would be more water for the people in the pueblos jóvenes,” Karla stated. She

finished the interview by saying she would feel more included if “...the government took more interest in the population, and if they were more included in the decisions”.

#### ***María from La Nueva Esperanza***

Earlier, I discussed the case of María (RP2-CSG, 2012) also from La Nueva Esperanza. In my interview with María she told me that “The big [agro-exporting] companies are benefiting while the population is underpaid and don’t have any time to rest”. Furthermore, María explained that everyone knows the agro-exporters are using too much water, leaving little for the population. María stated that the problem is no one wants to say anything or complain as the agro-exporters provide work. For these reasons, María does not believe the growth of the asparagus industry has been something positive for the population of her town.

Again it is important to note that while the majority of participants believe the agro-export industry is affecting water this view is not homogenous. Some participants, particularly in Las Torres, do not believe the industry is negatively affecting local water supplies. Instead, participants place the blame for water non-availability on the ineffectiveness of the authorities, which of course is also a critical part of the problem. In a similar vein, we need to remember there are many people from the *pueblos jóvenes* who view the asparagus industry as a saviour for the employment it has generated.

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### 7.3 CHAPTER CONCLUSIONS

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This final section summarises what has been shown in the case studies and what they have contributed to the thesis before moving on to the following discussion chapter. As demonstrated, these studied *pueblos jóvenes* only have water available for a few hours a day for three days a week or less depending on the area. This has also been made evident in other studies undertaken in Ica (CODEHICA, 2010; Cancino, 2010). It was discussed in earlier chapters that this water stress in Ica’s *pueblos jóvenes* has been caused by the expansion of the agro-export sector, widespread immigration, a damaging earthquake, and low government spending on water infrastructure (Hepworth, et al, 2010). Notably, all of these factors, except the earthquake, can be partly attributed to Peru’s neoliberal approach. The lack of available water in the towns is particularly driven by an over-emphasis of government policy toward agro-exports and a lack of public investment. For instance, the expansion of the asparagus and other agro-export industries has been clearly promoted by a vast range of neoliberal policies which drove investment and the concentration of resources in Ica (Cancino, 2010; Oré, et al, 2011). Rapid inward migration from the highlands was partially driven by neoliberal policies

which favoured economic development along the coast to the detriment of highland farming (Hepworth, et al, 2010). Additionally the liberalisation of Peru's national market has also been negative for highland farming (Crabtree, 2010). In accordance with neoliberalism, there has been the withdrawal of an already weak state meaning there are fewer resources to provide the population with water (Oré and Rap, 2009). As widespread immigration to Ica continues these public services are being put under further pressure (Marshall, 2012).

These case studies also provide an interesting micro-scale dependency analysis. As described in chapter 3, dependency theory examines global capitalism and illustrates how the capitalist system generates and thrives on unequal power relations and exchanges (Frank, 1970). At the global-scale, dependency theorists observe a 'core-periphery' model where the core relates to 'developed' countries and the periphery to 'developing' countries (Dos Santos, 1970). In Ica we can apply the same dependency analysis to a micro-scale. The executives and investors in the agro-export sector can be observed as the 'core' while the marginal groups of the *pueblos jóvenes* can be seen as the 'periphery'. The 'underdevelopment' or human hardship caused by water stress in Ica's *pueblos jóvenes* or the 'periphery' has been created out of the development or economic benefits experienced by the agro-export executives and investors or the 'core'. The virtual exportation of water in Ica is thereby creating 'development' for a small, powerful group at the expense and 'underdevelopment' of a larger marginal group made up of people who have mainly migrated from the *sierra*. This type of development, according to a leading academic (RP30-EG, 2012), "...contributes to the marginalisation and racism against the Andes and its people." Figure 8 below visually conveys this dual process of development and underdevelopment at micro-scale of Ica.

FIGURE 8: MICRO-DEPENDENCY IN THE ICA VALLEY

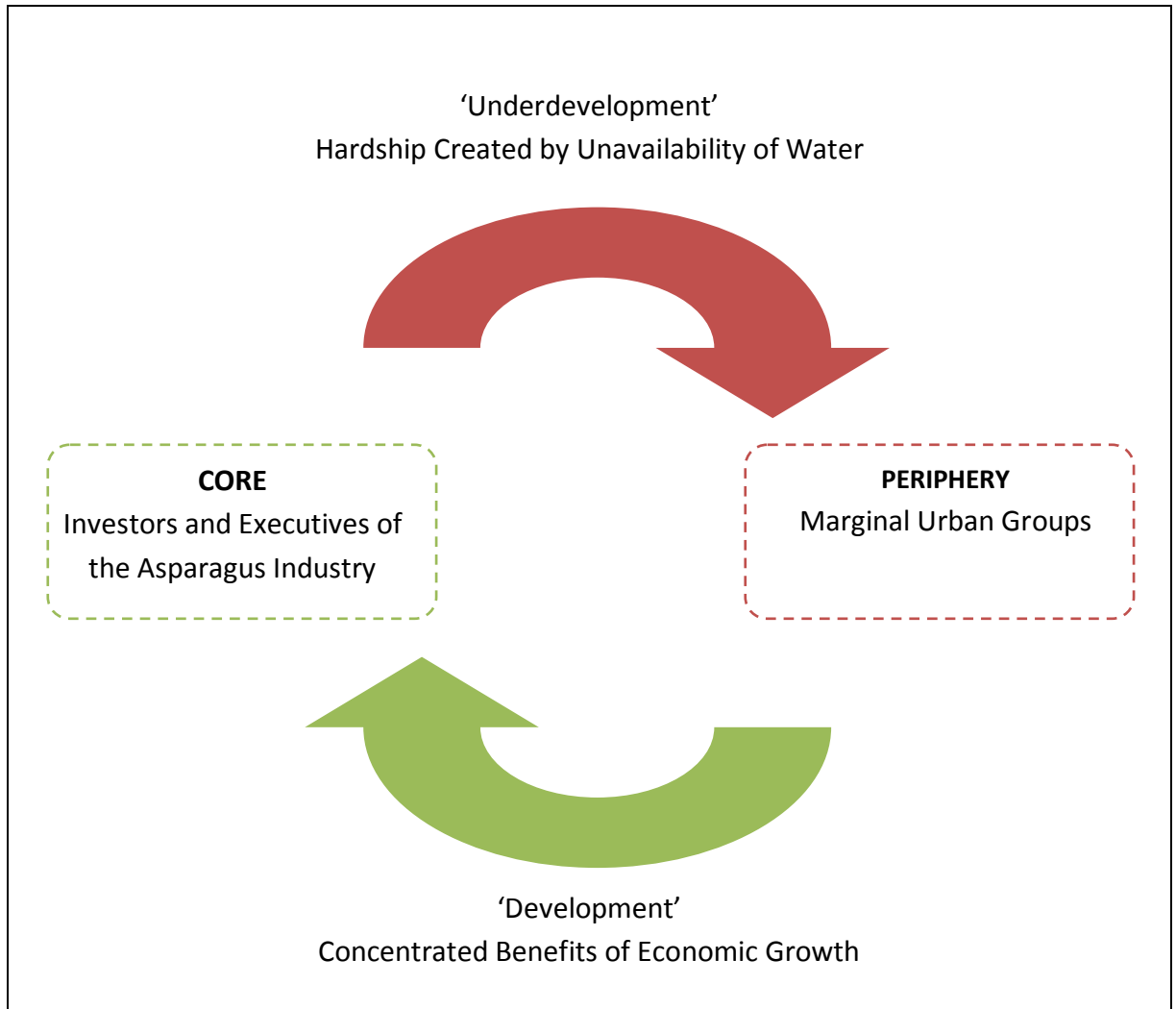


Figure 8 illustrates how ‘development’ in the ‘core’ is being driven by ‘underdevelopment’ in the periphery. Source: Elaborated by author.

Various studies show that a lack of available water seriously hinders the quality of life in marginal areas, not only in Ica but globally (Ioris, 2012; CODEHICA, 2010; Dagdeviren and Robertson, 2009). The chronic lack of constant and safe water supplies limits sanitation, opening the doors for the spread of illness in these areas (CODEHICA, 2010; Ioris, 2012). In 1991, this was the underlying reason of a major cholera outbreak in Peru (Tilley, 2007). As mentioned, Ica continues to have high rates of waterborne diseases, especially in its child population (Hepworth, et al, 2010). Furthermore, my Interviews discovered that participants in the *pueblos jóvenes* of Ica are anxious about the water situation in their communities. There is much concern over the excessive agricultural water use and the future of available water in the *pueblo jóvenes*. As shown in chapter six, expert water predictions unfortunately legitimise some of these concerns (ANA, 2011; Bayer, 2009).

Interviews in the marginal urban areas of Ica provide a valuable insight into the realities of the people who live in them. The cases selected here demonstrate the participants from these marginal areas feel excluded from water management and resent the authorities as a result. Moreover, participants believe the agro-exporters, especially those which grow asparagus, are using too much water leaving little for domestic use. Additionally, these cases show how economic development and dependence has been established with the expansion of the asparagus export industry. On one hand, the industry's development has helped the population financially, yet on the other it has made them dependent and under the control of the agro-exporters.

## CHAPTER EIGHT

### DRAWING FROM ICA: CONNECTING THE CASE STUDY TO THE RESEARCH THEMES

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This chapter re-addresses the research questions outlined in the first chapter and highlights some additional contributions of the work. In order to achieve this, this chapter has been separated into five 'micro-chapters' or large sections. The first section examines how Peru's neoliberal frameworks have influenced resource management processes and the development of the asparagus industry in Ica. The subsequent section discusses how these neoliberal frameworks have affected water management and local water availability. The third section explores how the development of the asparagus industry and the related resource management changes have impacted urban marginal groups and their water access. The fourth section investigates the ways in which marginal groups have responded to the problems they perceive to be related to the asparagus industry. The fifth and final section will provide some additional discussion and summarise the chapter.

### THE INFLUENCE OF NEOLIBERAL FRAMEWORKS ON RESOURCE MANAGEMENT IN PERU

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#### 8.1 PERU'S NEOLIBERAL REFORMS

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This thesis illustrated that the management of resources has been heavily influenced by neoliberal frameworks in Peru. As discussed in chapter four, Peru was beset with a bleak economic performance leading up to the 1990s. In the 1990s, the Fujimori Government proceeded to implement widespread neoliberal reforms with the aim of reversing this poor economic situation by stabilising and liberalising the economy. This represented the elimination of the interventionist role of state first introduced under General Velasco Alvarado (Mauceri, 1995; Eguren, 2004). As also explored, Peru's economic situation has improved greatly since 1990, with high levels of growth, low inflation, economic stability, and declining external debt. These achievements have been attributed to the privatisation and liberalisation programmes initiated by Fujimori and continued by successive governments (The World Bank, 2011). However, as will be shown in the subsequent sections Peru's neoliberal development model has caused a range of problems especially in resource management.

### 8.1.1 Resource Liberalisation

The Fujimori Government applied a dual strategy by (1) down-scaling the public sector and (2) establishing the tax revenue bureau as well as groups which support liberalisation. This created a dual bureaucracy, with a small group of highly paid civil servants on the one hand and the rest as an underpaid and capacity lacking public sector on the other (Arellano-Yanguas, 2008). Successive governments have followed this model, further weakening the already weak state (Morón, and Sanborn, 2006). As discussed in chapter four, Peru's National Institute of Planning was also dissolved, which signalled the long term aversion to state involvement in planning and resource management (Arellano-Yanguas, 2008). A Peruvian academic (RP30-EG, 2012) explained to me that this was based on neoliberal ideology which "...has generated the fantasy that resources are managed better without state involvement". A social activist and academic in Ica asserted that this neoliberal model, has on the contrary, driven the rapid and irresponsible use of Peru's resources while weakening social and environmental regulations (RP34-EG, 2012). Likewise, the mentioned down-scaling of the Peruvian state means it is unable to allocate public spending or manage resources effectively (Arellano-Yanguas, 2008).

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## 8.2 MARKET DETERMINED RESOURCE MANAGEMENT

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### ***Mineral Resources***

A number of key resources in Peru can be used to illustrate the influence of neoliberal policies on the management of resources. Mining is a good example of this. Liberalisation introduced by the Fujimori Government attracted large amounts of investment into Peru's large mining sector causing investments in the industry to increase five-fold between 1990 and 2000 (Bebbington, et al, 2007). However, these neoliberal reforms have left a weakened state and created an unstable political system. In this context, the mining companies hold asymmetric power, while the state lacks the capacity to enforce social and environmental regulations (Arellano-Yanguas, 2008). A report by Christian Aid shows that mining in Peru has caused many environmental and social problems while the costs are being disproportionately placed on poor groups (Christian Aid, 2005).

### ***Fishery Resources***

Neoliberal reforms in Peru's significant fisheries industry have shown somewhat similar results. The industry was radically liberalised after the Fujimori Government took office in the 1990s, with the privatisation of state-owned Pesca Peru, financial deregulation, and tax reforms. These changes were successful, attracting an investment of approximately \$400



million<sup>19</sup> to the industry between 1991 and 1995 (Ibarra, et al, 2000). Yet, evidence shows that while neoliberal policies have encouraged the sector to grow they have also led to overfishing and overcapitalisation driving the over-exploitation of key fish stocks (Ibarra, et al, 2000).

### ***Agricultural Land***

Liberalisation of agricultural land in Peru creates similar outcomes. As described in chapter five, the neoliberal reforms of the 1990s reversed the 1969 agrarian reforms which abolished Peru's old *hacienda* system (Oré, et al, 2011). These neoliberal reforms entailed the liberalisation of land and property, the elimination of many *campesino* ownership rights, as well as policies which encouraged large investors to purchase rural land, especially on the productive coast (CEPES, 2011). Observing these land policies reveals that the neoliberal reforms were very much about eliminating the rights held by the *campesino* group in order to promote the entrance of a new group of large investors in the agro-export sector. Throughout the past decade the same Fujimori inspired approach to rural development has been followed. What has resulted is the re-concentration of agricultural land along the coast as large agro-exporters have expanded (Cancino, 2010). As summarised by CEPES (2011:11);

*"...what is being achieved is the undoing of a significant part of what was obtained through the 1969 agrarian reform: the redistribution of lands among those who work them and the creation of a more democratic rural society."*

This process of agricultural land re-concentration has been mirrored in other parts of Latin America where neoliberal reforms have taken place (Murray, 2006)

#### **8.2.1 Asparagus Development**

Peru's neoliberal reforms have been instrumental in the rapid development of the export asparagus industry. As explained in chapter five, the natural conditions of Ica allowed the area to supply niche markets creating an initial 'comparative advantage' (Rendon, 2009). This was then exploited by a number of neoliberal policies. To begin with, the withdrawal of state regulations afforded large investors with access to the resources required to establish asparagus farms. This includes many of the land liberalisation policies outlined previously. It also includes the removal of the state from water management which granted large investors with water access. Moreover, Peruvian laws further promoted investment by removing workers' rights and making labour contracts more flexible, thereby ensuring a cheap labour

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<sup>19</sup> Value in U.S. Dollars.

force (Rendon, 2009). Finally, the greater integration of Peruvian agricultural products into the global market has been achieved through various free trade agreements attracting more investment into the asparagus industry. All of these measures were part of the neoliberal packet and all have driven the rapid expansion of asparagus in Ica (Cancino, 2010). Furthermore, as amply expressed by a NGO member in Lima (RP29-EG, 2012);

“...the privileges afforded by law have made investment cheaper and allowed agro-exporters to deny their employees benefits, without these factors the asparagus industry would not be as competitive as it now is.”

Views about Peru's neoliberal reforms collected from primary research differ greatly. The majority of interview participants from the expert group echoed the sentiment that Peru's neoliberal model has promoted agro-exportation. This was attributed to the removal of the state, loosened regulation, and other incentives which have attracted private investment to the sector. Those involved in the agro-export sector, for instance representatives of JUASVI, discussed the importance of the agro-exporters in terms of overall economic development and employment generation in Ica and Peru, and were appreciative of the reforms for facilitating this development (RP47-EG, 2012; RP48-EG, 2012). Many from the expert group of academics and officials commented that regulation had become overly weak and that the government was unable to effectively manage resources in Peru's liberalised era. Moreover, a number of academics, NGO representatives and social activists expressed concerns over the relaxation of regulation and the ways in which agro-export expansion is negatively impacting on Ica's marginalised population and their access to groundwater. For instance, a member from a human rights' NGO (RP33-EG, 2012) stated that “The neoliberal packet in Peru has led to the concentration of natural resources in Peru, especially land and water in Ica, and these policies have concentrated of power and control”. What became clear through research is that no-one disputes the claim that the reforms have heavily supported the development of Peru's agro-export industry along its coastal region.

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### 8.3 FROM NATIONALISATION TO LIBERALISATION OF WATER MANAGEMENT

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This thesis has also established that Peru's neoliberal reforms have had important implications for local water management and availability in Ica. As discussed in chapter five, Peru has gone through the nationalisation and then liberalisation of its water resources over the last 30 years. The General Law was part of 1969 reforms which nationalised water, making it difficult for large agro-exports to concentrate water access. But in 1989, water management was transferred to private *Junta de Usuarios* due to capacity problems in the nationalised system (Rendon, 2009). This saw the beginnings of water liberalisation which continued throughout the 1990s and 2000s following Peru's neoliberal model. An expert academic (RP30-EG, 2012) explained that "...the diminishing role of the state fomented the private management of a public good [water] thereby transforming the management of water from supply allocation to demand allocation". Another expert (RP34-EG, 2012) stated that this is an "... ineffective way to manage any resource, as limits are not set and the resource is only granted to those who have the capital and influence to access it".

#### 8.3.1 The Return of the State?

Water management exercised by *Junta de Usuarios* soon became very biased towards agriculture while excluding other water users. With tensions building and conflict over water becoming increasingly likely, another period of water management reform has been implemented (Hepworth, et al, 2010). In 2008, the semi-autonomous water regulator ANA, was established and put in charge of creating a national policy for water management in Peru (Rendon, 2009). According to a representative from ALA in Ica (RP27-EG, 2012),

"Too much control over water was granted to the Junta de Usuarios in Ica, but we are currently going through a process whereby ALA is trying to improve this by taking more control and supervision over these boards".

In 2009, the new Water Resources Law was passed. According to some, the passing of this law was a positive step, elaborating on a national water resources policy and promising to provide a framework for a more integrative water management model (Hepworth, et al, 2010). However, others see this new law as a threat to the public ownership of water protected by the 1969 General Water Act (Bayer, 2009b). What has become clear over time is that the

removal of the state from water management has resulted in the growth of agro-exports to the detriment of water access for other users.

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## 8.4 THE EXPANSION OF ASPARAGUS AND LOCAL WATER SUPPLIES

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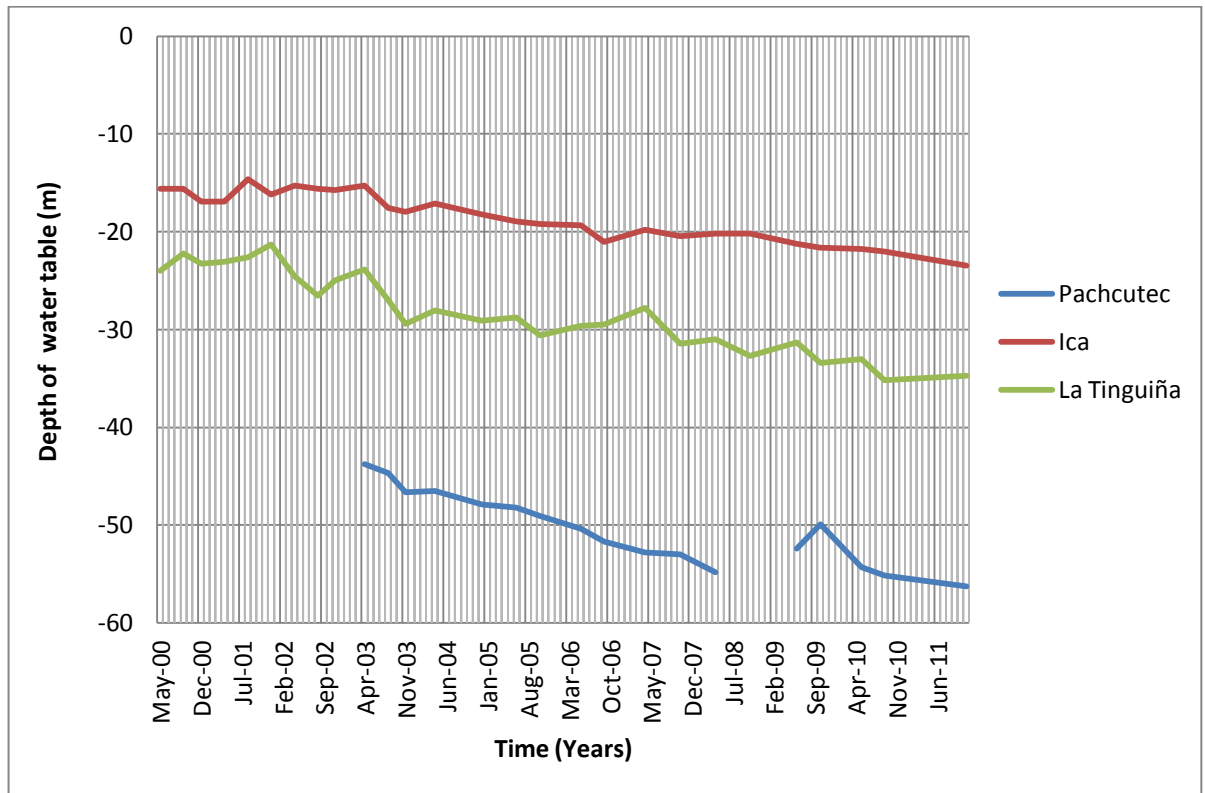
### 8.4.1 Agricultural Expansion and Unsustainable Water Use

As explored throughout this thesis, the liberalisation of land and water allowed asparagus exports to boom in Ica since the end of the 1990s. This, however, has caused the extraction rates from Ica's aquifer to double between 2002 and 2007 causing the over-exploitation of water (Foster, et al, 2008). Furthermore, ANA has predicted that the aquifer will decline by 10 metres to critical levels in the next in 5 to 20 years depending on the area (ANA, 2011).

### 8.4.2 Water Table Descent in Ica

Figure 9 below illustrates Ica's descending water table over the last decade, as taken from three wells in different parts of the valley. Pachacutec, an area dominated by the asparagus industry, is suffering the fastest rates of water table descent of the sample, with a decline of – 1.867 metres/year as measured at the La Atalaya well. The mayor of Pachacutec blames this on the free market reforms which relaxed water regulation and allowed agro-exporters to over-exploit the aquifer (RP37-EG, 2012). La Tinguiña, another area concentrated with agro-exporters, is also suffering from a descending water table, with a decline of -1.07 metres/year as measured at the Viña Tacama well. The mayor of La Tinguiña stated that "...the rapid expansion of the agro-exportation means that we are now facing the possibility of a water crisis". He believes the water management system in Peru is chaotic and ineffective. In Ica central, the water table is descending at a much slower rate, declining at -0.667 metres/year as measured at Poruma well. Yet, this decline, albeit slower, is still concerning as central Ica is in the most densely populated part of the valley. Finally the graph makes evident the drop in Ica's water table takes place precisely in the boom period of fresh export asparagus as shown in Figure 5 of chapter five.

FIGURE 9: RATES OF WATER TABLE DECLINE IN PACHACUTEC, CENTRAL ICA AND LA TINGUIÑA



Source: Elaborated by author. Statistics from the Local Administration of Water Ica \*Data from Pachacutec only consistently recorded from April 2003.

## 8.5 CRITICISMS OF PERU'S NEOLIBERAL APPROACH TO RESOURCE MANAGEMENT

### 8.5.1 The Neoliberal Model and Failed Water Management in Ica

As discussed earlier, Peru dismantled its national planning system in 1992, representing the beginnings of an aversion to long-term planning by the Peruvian state. The idea is that the market best determines the allocation of resources and therefore the state should not interfere with planning as it is laden with ideology (Arellano-Yanguas, 2008). An expert in Ica (RP34-EG, 2012) however told me that “The valley serves as a critical evaluation of neoliberal development models because the water problems which exist are explained by a lack of governmental control”. According to a senior researcher in Lima, the expansion of asparagus comes with no planning or logic, and the idea that the market will control resources and provide solutions has not happened in Ica (Hepworth, et al, 2010). In addition, a World Bank study concluded that there are many other valleys along Peru’s coast with large reserves of groundwater. In fact, the study found that these valleys have more than enough water than is

required by the asparagus industry (Foster, et al, 2008). The irony, however, is that due to free market resource allocation and a failing of government control the asparagus boom has taken place in Ica. State planning could have directed agro-export investment into areas where more water was available for agriculture. Instead, corporate interests and political ideology removed regulation over the development of agricultural industries, seeing it as a hindrance rather than an indispensable part of development (Hepworth, et al, 2010).

Research participants from the academic and NGO community echoed concerns that the authorities have failed to implement long-term planning while giving in to the short-term gains of agro-export expansion. According to this group, what has resulted is an over-prioritisation towards the water needs of agro-exporters to the detriment of other water users in the valley. Those in the NGO sector stated that while water is labelled as a human right it has been commercialised and due the neoliberal model it is not being used for holistic development in Ica. An expert in Lima (RP29-EG, 2012) claims that over-prioritisation towards the agro-export sector is shown in the way “...the state is subsidising the investors by allowing the exploitation of natural and labour resources while local interests are being ignored. It is a business logic rather than development...”. An engineer from a large asparagus farm told me the development of the industry has not followed from any planning (RP53-FPG, 2012). He told me that,

“...there should first be studies into the amount of water we have and after this we should allocate the water for agriculture. However, we have seen the opposite and for this there is the over-exploitation of water.”

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## 8.6 INEFFECTIVE STATE AND THE UNDER-FUNDED PUBLIC SERVICES

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As also discussed, Peruvian governments have become obsessed with monetary austerity including in times of government surplus (Arellano-Yanguas, 2008). This means the public organisations in charge of the management, regulation, and distribution of water are seriously lacking in funding and are thereby unable to effectively fulfil their functions. A World Bank report reveals large reductions in water professionals employed by the Peruvian government, going from 4000 in 1980 to only 150 in 2008 (Foster, et al, 2008). This lack of public investment and shortage in staff is having negative impacts in Ica. For example, the head of ALA stated that the required resources have not been made available to them (Hepworth, et al, 2010). In a similar vein, an engineer at EMAPICA, told me that (RP42-EG, 2012) “We lack

funding and therefore there are areas of Ica that we can only provide water to for a few hours per week”.

A professor and engineer at a local university in Ica explained to me that one of the largest problems is the lack of comprehensive information about water availability or how it is being used (RP36-EG, 2012). This lack of information creates an environment where regulation is made difficult and mistrust is widespread. As adequately summarised by Hepworth, et al, (2010:93),

*“The regulators desperately need the resources and capacity to acquire the data and information they need. Similarly the public and businesses require information on the water resource in a form they can understand, to support informed decision making and action.”*

But, as also discussed, ALA does not have the human and financial resources to conduct this comprehensive assessment of the aquifer (Cancino, 2010).

Many of my research participants from the expert group complained about the ineffectiveness of ALA in Ica. Of great concern is the agro-exporters lack of respect towards the authority of ALA. According to an academic and social activist in Ica (RP34-EG, 2012) water management has not been effective

*“...because the agro-exporters influence and dominate the water management as the officials are subordinate to them, making authorities very timid in their steps to control water. Moreover the institutions here [in Ica] are very corrupt and dysfunctional.”*

Agro-exporters and representatives from connected organisations voiced other criticisms. For example, one medium sized asparagus producer said that “The potable water company [EMAPICA] has very poor water management. It cannot provide water to all of Ica due to budget and technology issues”. A representative from JUASVI (RP47-EG, 2012) stated that,

*“A lack of public investment and insufficient taxes on water for personal use means they [public water providers] cannot find solutions for the problems that exist today. What is more,*

after 50 years of existence they did not have one sol in reserve for the problems that exist today.”<sup>20</sup>

Evidence in this thesis, thereby, shows that neoliberal policies have removed state regulation, fostered the development of the agro-export sector causing the over-exploitation of local water resources in Ica.

## EXPORT ASPARAGUS DEVELOPMENT AND IMPACTS ON MARGINAL URBAN GROUPS

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### 8.7 The Economic Inclusion of Marginal Urban Groups

This thesis has shown how the development of the asparagus industry and the policies which have supported it have affected marginal urban groups in a number of ways. Chapter six explained that the boom in Ica’s asparagus industry has been extremely important for job creation. Particularly, those involved in the industry stressed the importance of the agro-export industry for reversing Ica’s high unemployment rates and fostering economic development (RP47-EG, 2012; RP48-EG, 2012). This has been especially important for marginal groups which have filled the manual jobs created both on the farms and in the processing plants (Hepworth, et al, 2010). This sentiment was supported through many of the interviews in the *pueblos jóvenes* as well as with local officials and experts. Campaigning to remove the industry from Ica will most likely force many marginalised people into further poverty and ruin much of the overall economic progress that has been achieved in Ica.

#### 8.7.1 Precarious Labour Situation in Peru’s Agro-Export Sector

As also shown, the neoliberal policies which drove the asparagus boom have eliminated many workers’ protections and rights. A leading academic in Lima (RP46-EG, 2012) told me that “...workers are subjected to bad working conditions and long hours with no ability to bargain with their employers”. A representative of FREDEPJUP explained that “Agricultural labourers in Ica work extremely long hours based on flexible contract arrangements”. He continued to note that “...these labourers have little time for their families, education, health or rest”. The children of these families are being negatively affected; they lack education, social protection and many are likely to contribute to future social problems (RP35-EG, 2012). An economist at

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<sup>20</sup> Sol refers to the Peruvian currency: the Nuevo Sol Peruano. 1 Nuevo Sol Peruano = 0.38 United States Dollars or 0.45 New Zealand Dollars. As taken from XE Currency Converter from; [www.xe.com/currencyconverter/](http://www.xe.com/currencyconverter/) Accessed 09/04/13



the regional government of Ica summarised this by saying the income agricultural labourers are making is coming at the cost of their children's development (RP43-EG, 2012).

As explored, changes during the 1990s and 2000s in Peruvian law have seen the proliferation of short-term and flexible contracts in the industrial agricultural sector. These changes were implemented to encourage investment following the neoliberal reforms but have come at the cost of workers' rights. Flexible contracts mean an employee can be easily dismissed without severance pay and rehired at a later date if the agro-exporter needs their labour (Centro de Asesoría Laboral del Perú, Accessed 2012). As explained, this has placed all the power with the employer, as employees fear their contracts will be suspended for complaining or attempting to unionise (Solidarity Center, 2009). Moreover, recent changes in over-time laws means employees can be forced to work over-time without compensation (Fernandez-Maldonado, 2006). Chapter six also highlighted how women workers are disproportionately suffering from the precarious labour situation experienced by those in agro-export sector (Fern, 2008). Additionally, it was argued the benefits of Ica's asparagus boom are being shared unequally (Centro de Asesoría Laboral del Perú, Accessed 2012).

In sum, this thesis has shown that in one sense the asparagus industry has positively impacted marginal groups in Ica by generating employment. While there is no denying the importance of this, it is also crucial that we question the type of labour which has evolved. It has been established that the agro-export sector has incorporated marginalised groups into precarious employment situations. Additionally, it has been shown that Peru's neoliberal approach has only further exacerbated this situation by prioritising macro-economic growth over workers' protections and rights. The uneven sharing of the benefits of Ica's asparagus boom also means the macro-economic growth driven by Peru's neoliberal model has been extremely concentrated, thereby only feeding in to the inequalities discussed in chapter four.

### 8.7.2 The Expansion of Agro-Exports and Water Access in Marginal Areas

The ways in which asparagus export expansion has impacted water access in marginal urban areas is complex. As mentioned in chapter six, high amounts of migration to Ica, a damaging earthquake and deficiencies in public investment as well as agro-export growth have combined to create water availability problems in marginal urban areas of Ica. We must therefore be cautious not to make sweeping and one sided assumptions about these water availability problems. Evidence in this thesis has revealed that due to a lack of public investment and slow earthquake recovery, marginal groups in Ica would already be living on water supplies well

below what is recommended by the WHO, even before the problems caused by the agro-exporters are included (Hepworth, et al, 2010). It is consequently unfair to blame all of the existing problems on the agro-exporter group. These issues should be attributed back to the lack of state capacity which has only been further eroded by Peru's neoliberal reforms.

As discussed, the neoliberal reforms have removed state water regulation creating a water management vacuum while prioritising agricultural water needs over that of Ica's population. As explored, the *Junta de Usarios* filled this vacuum distributing water to farmers but ignoring the needs of the population as well as the aquifer's extraction limits (Oré and Rap, 2009). A number of research participants emphasised that in order to promote investment into the agro-export sector water access has been afforded to large agro-exporters, further excluding marginal groups from water access. As explained by a NGO member in Ica, the liberalisation policies means water has been "marketised" as private investors now have almost exclusive control over groundwater as they own the licences to use it (RP33-EG, 2012). This has driven the concentration of water in Ica and practically excluded marginal groups from water management processes and access (Cancino, 2010). As shown through chapters six and seven, the agro-exporters are using excessive amounts of water which is negatively impacting on the sources available in the *pueblos jóvenes* creating hardship there. Additionally, we have observed how Ica's public water services have been put under further stress as the agro-export industries attract large amounts of migrants who move primarily into water stressed areas (Marshall, 2012).

Poor water availability in marginal areas is in stark contrast to the levels of water available to the agro-exporters (Cancino, 2010). Without reversing the depletion of Ica's aquifer, available water will become increasingly stressed which will most likely lead to further exclusion of marginal groups from water supplies (Hepworth, et al, 2010). By acknowledging the culpability of agro-exportation in the over-exploitation of the aquifer it is evident the exporters will hold some responsibility for this increasing hardship felt in the *pueblos jóvenes*.

Chapter six revealed that Ica's *pueblos jóvenes* are suffering from chronic water shortages. Moreover, evidence showed that the water received is not always of good quality. This is having negative implications on sanitation and has increased vulnerabilities to illnesses in these marginal areas (CODEHICA, 2010). As explored, my own research illustrated that in the most marginalised towns public water virtually did not arrive, forcing already impecunious

people to purchase relatively expensive water. This is strikingly imbalanced as populations in wealthier areas of Ica receive water constantly for a very small charge.

The development of export asparagus, the associated changes in resource management, and what these have meant for marginal groups are at the crux of this thesis. It has been clarified that the marginal groups have been affected by dual processes. On the one hand, they have been integrated and included economically through the employment generated by the agro-export industry. Yet on the other hand, the neoliberal policies used to foster investment into the industry and then the unsustainable water extraction which support agro-exports have excluded the same group from water access (Cancino, 2010). It is crucial that this exclusion and further marginalisation is not observed as a mere mistake. It is rather a result of Peru's neoliberal preoccupation with the exploitation of resources for macro-economic benefit. This section has shown that the removal of the state has also signalled the removal of many of the rights once given to marginal groups since these have been transferred to an entrepreneurial group of agro-exporters (CEPES, 2011).

### 8.7.3 Potential for Marginal Group Inclusion

Interviews with local experts did, however, highlight some possibilities for the future inclusion of marginal groups in water management. For example, a water expert in Lima (RP28-EG, 2012) explained there is a positive transition happening, he states "...the new water law of 2009 aims to include the marginal population in water management". He warns, however, that the problem is how this can be implemented. The same expert indicated that "The new water law opens opportunities for better water management in Ica and we therefore need to use all the force we have so that this law is delivered in practice and the population is included". An expert academic in Ica (RP32-EG, 2012) resonates similar ideas, stating the involvement of marginal groups "...is something that is improving with the creation of ANA/ALA, as they are working hard to include marginal groups". She continued, stating that,

"There is a movement to secure access to potable water as a human right under the constitution. I believe this would help prioritise human consumption above economic use and aid in the formation of better water management."

### 8.8 Perceptions of Ica's Marginalised

This section examines the ways in which Ica's urban marginal groups perceive the development of the asparagus industry and how they have responded to the problems it has created. A research gap existed in regard to these perceptions therefore the information has been mainly generated through interview data.

As demonstrated in chapters six and seven, many participants from Ica's marginal urban population view the asparagus industry as a saviour because of the employment it has generated for those living in the *pueblos jóvenes*. In this sense, the development of the asparagus industry is sometimes perceived as an opportunity by parts of the marginalised population. Yet, as also recognised in chapter seven, primary research revealed large parts of the marginal population were aware the development of the asparagus industry was having a negative effect on the water availability. This group complained asparagus exporters were extracting excessive amounts of water which meant the water table was descending and thus reducing the water available in the *pueblos jóvenes*. Evidence presented throughout this thesis has confirmed this is correct (ANA, 2011; Cancino, 2010). Additionally, several participants from Ica's marginalised areas believed a large part of Ica's water availability problem stems from the power and influence agro-exporters hold over the authorities. This power, they believe, allows the agro-exporters to influence government decisions which exclude the populations from water management processes and access. Other participants state that these unequal power relations mean the authorities are unable to regulate the agro-exporters, some even mentioning the problems of unlicensed and illegal wells. Interviews uncovered that the majority of those who live in the urban marginal areas of Ica are concerned about the future of water availability in their communities. Many told me they are worried there will not be any water in their towns in the near future because of the over-exploitation of water. Numerous participants say they have already experienced declining amounts of water, noting this occurred after the development of the agro-exporters in the 1990s.

As discussed in chapter seven, it is important to reiterate that some participants from Ica's marginal areas did not blame the agro-exporters for the water availability problems. Rather, this group accused the authorities of ignoring their water needs and abandoning them. This was especially felt in areas where public water did not arrive or arrive infrequently. Again, due to the limited public investment in water this is also a valid point

### 8.8.1 Marginal Group's Response to the Asparagus Industry

The above section explained how Ica's marginal urban population are experiencing worsening water availability problems and much of this group believe this is being caused by the asparagus industry. One would expect that faced with increasingly dire water shortages this group would have responded to the problems in some way. Remarkably, there has been very little response. Again, very little literature explains why. Numerous research participants from my expert group, those from the government, NGOs, and universities, for example, told me those who live in Ica's marginalised towns simply do not understand what is happening; blinded, they claim, by the economic benefits of the industry's development.

By undertaking interviews in the *pueblos jóvenes*, my research found that in reality the majority of the marginalised population have a good understanding of the water problems which exist in Ica. My research consequently disagrees that the lack of response by this group comes as a result of them not understanding the problem. As earlier explained, a large part of Ica's urban marginal group depends on the agro-export sector for employment. According to a number of experts in Peru this is creating a dilemma for this group: while the marginalised population can see the agro-exporters are negatively affecting their water access, it also provides them with employment. This means Ica's marginalised groups are unable to complain or rebel (RP33, 2012; RP43-EG, 2012; RP28-EG, 2012). A NGO member says the population needs to put more pressure on the authorities so that they better protect water resources (RP31-EG, 2012). However, conflicting interests by these marginalised groups are clearly blocking the social mobilisation which would help force progressive change in Ica. Moreover, as a water consultant in Lima (RP28-EG, 2012) explains, "Everybody is in this situation, the employees but also the councils, the water authorities and even the state, making it very hard to bring change". This illustrates the power the agro-exporters have in Peru's weakened political system. Additionally, the agro-exports are large companies who have operations throughout Peru and sometimes the world. This means if there is a major water crisis in Ica this group can easily move. The population, however, cannot, and as a result the government should intervene (Cancino, 2010). Figure 10 demonstrates how marginal groups in Ica have been both excluded and included as a result of the expanding agro-export sector.

FIGURE 10: MARGINAL GROUP EXCLUSION CUBE

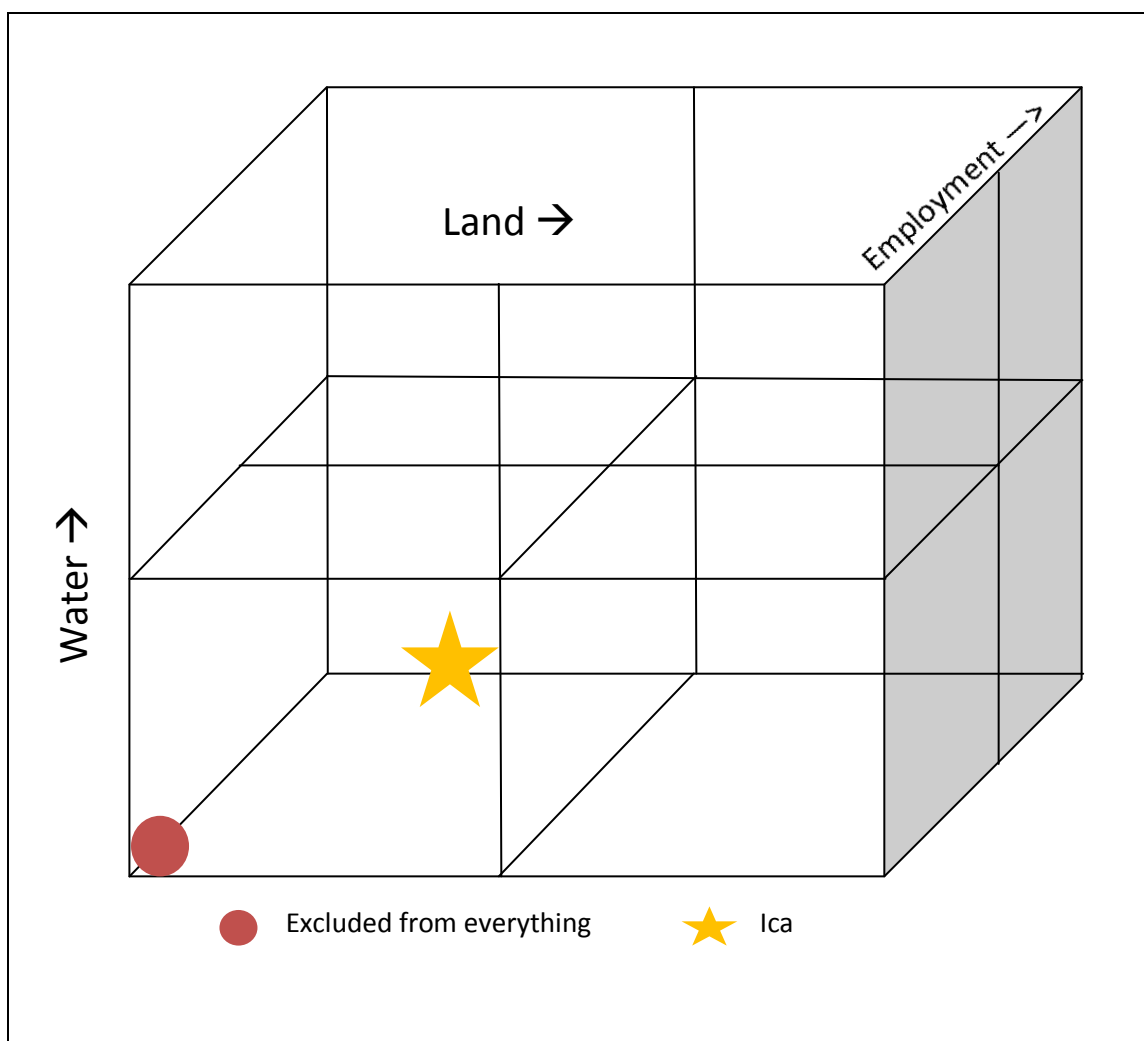


Figure 10 illustrates the exclusion experienced by marginal groups in Ica. The three-dimensional diagram shows that while marginal groups have been included in employment (Ica is located at the back of the cube representing no exclusion from employment). Conversely, this group has been excluded in water and land resources (Ica is located in the bottom square (water exclusion) to the left side (land exclusion)). Source: Elaborated by author. Note: Plate 7 is a conceptual representation of the processes of exclusion and inclusion occurring in Ica, it is thereby not to any scale.

## ADDITIONAL DISCUSSIONS AND SUMMARY

This section explores some additional points before summarising the overall discussion. In doing so, it serves as a link to the final chapter which evaluates and concludes this thesis.

### 8.9 The Under-Representation of Asparagus Exporters

It is important to note the views of the largest asparagus agro-exporters are under-represented in this thesis. While many attempts were made to make their perspectives known they acted in a closed off manner, refusing to share their opinions. Some companies openly

stated it was against policy to take interviews. Others, however, repeatedly arranged meetings and cancelled them at the last minute. This public avoidance by the agro-exporters is problematic for a number of reasons. To begin, it generates adversary and mistrust between the different stakeholders in the valley. Moreover, it hinders the possibilities of finding solutions to the water problems through co-operation (Hepworth, et al, 2010). It has been highlighted that without an interdisciplinary and inter-sector approach, which includes the agro-exporters, solving Ica's water problems will be near impossible (Oré, et al, 2011)

The few interviews with representatives from medium to large asparagus exporters were nevertheless insightful. A manager of a farm of 100 hectares acknowledged that Ica is experiencing an emergency in water resources (RP51-FPG, 2012). He mentioned, like all farmers interviewed, that Ica lacks the large-scale irrigation project it needs. He also blamed the water problems on "The lack of consciousness of some farmers to look after the water". An interview with an engineer at an asparagus farm of 85 hectares was also valuable. This engineer told me (RP53-FPG, 2012),

"Ica is already facing water problems yet a lot of pozos are still being built which is further stressing the aquifer. This means the water level continues to drop and the recharge rate cannot keep up as more water is leaving the aquifer than entering it."

He told me the wells for agricultural and human consumption are connected, this he says, means when water is drawn "...for agricultural use we negatively impact the water source used for human consumption". This expert opinion contradicts other representatives from the asparagus industry who claim agricultural water comes from other parts of aquifer and therefore it does not negatively impact domestic water supplies. A different engineer in a university in Lima (RP45-EG, 2012) similarly stated,

"The agro-exporters say that there isn't a problem as the pozos are not in conflict with other users. However, I reject this claim because one body of water, such as the aquifer in Ica, is extremely complex and one cannot say there is not a relation."

The asparagus farm engineer in Ica mentioned (RP53-FPG, 2012) made his observations. "With working 15 years for the company I have seen the growing deficit of water and if no measures are taken we will see social conflict over water in the next 20 years in Ica."

All of the farmers interviewed in Ica, some of which produce asparagus, discussed the need for a major irrigation project in Ica. The most popular prospective project, known as the pampas project, will bring massive amounts of water from the *selva* to Ica. According to these participants this project could solve Ica's water problems by using water which is currently 'lost' to the Atlantic Ocean. The problem, according to this group, is the government is ineffective and is failing to implement the project (RP53-FPG, 2012; RP56-FPG, 2012; RP54-FPG, 2012; RP51-FPG, 2012). But, we must be careful when creating a purely technical solution. Such solutions will simply encourage further agricultural expansion, generating more water over-exploitation in Ica and carries the potential of negatively affecting water supplies for 'upstream' communities in the highlands (Hepworth, et al, 2010). It is also ironic that the same agro-exporters which benefited from increased resource access permitted by neoliberal policies now look to the state in times of water scarcity to develop an irrigation project (Marshall, 2012).

#### 8.9.1 Water Stress and the Potential for Future Conflict

It is also important to acknowledge that water problems bring the potential for social conflict. The combination of poor water regulation and the effects of climate change mean Peru is likely to suffer from severe future water crisis. Left unaddressed, this water crisis may destabilise water security and lead to widespread conflict (Lubovich, 2007). Of great concern is the increasing competition over scarce water supplies, as well as the country's inability to distribute water equally (Lubovich, 2007; Hepworth., et al, 2010). Both of these issues will become aggravated further as climate change induces reductions in glacial melt and as agro-export industries continue to expand their demand for water.

The increasing number of people affected by water insecurity is also of great concern. Past conflicts over water in Peru have been localised and limited to poor communities who struggle for greater equality and access to clean water. These confrontations have commonly been centred on the privatisation of urban water distribution and the socio-environmental costs of the mining and agro-export industries (Lubovich, 2007). However, as water shortages begin to affect wider parts of the population, growing dissatisfaction will put the government at risk of being overwhelmed and unable to react, leading to a possible and serious erosion of Peru's stability (Lubovich, 2007). It is reasonable to argue that neither the diminishing state, nor the free market will be able to deal with these problems.

Coastal agricultural may become a centre for conflict as reducing water supplies for irrigation creates growing competition over an increasingly scarce resource. As shown in chapter five,



the Ica Valley represents one area at risk of future water conflict. As explained, the increased competition over groundwater supplies between the agro-exporters and the population is already generating some social conflict. As agro-exporters continue to concentrate this water under the neoliberal model the potential for wide-spread and violent conflict will continue to grow (Oré, et al, 2011). In addition, chapter five highlighted that similar shortages of water in the 1950s lead to violent conflict in Ica (Schmall, 2010).

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## 8.10 SUMMARY AND LINK TO CONCLUSIONS

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This chapter has illustrated that the neoliberal reforms have completely re-organised the ways in which Peru manages its resources by removing the state from planning and resource allocation. Market allocation replaced the state's role which has had very real and often negative implications on the marginalised population of Peru. As exemplified in the case of water resources in Ica, this system of market allocation drove the expansion of the asparagus industry which has caused the over-exploitation of Ica's aquifer negatively affecting water availability for marginal groups. In this case, water over-exploitation and recent attempts to re-integrate the state into the water management has shown that liberalised management of groundwater resources has been ineffective. On the other hand, this discussion also highlighted the importance of Ica's asparagus industry for creating many needed jobs, especially for the marginalised population. A paradox, therefore, has been uncovered: the marginal groups are being excluded from their water access due to aquifer over-exploitation while they are being included economically through the employment generated, both processes resulting from the growth of the asparagus industry. This creates a dependent relationship where the marginal groups are aware water stress is being caused by the industry yet are unable to complain or protest as they are dependent on it for their incomes. On a positive note, there are some signs for improvement as the New Water Law of 2009 pushes the need to include the population. The discussion also demonstrated the closed off attitudes of the large agro-exporters are likely to obstruct opportunities for progress while compounding the current water problems further. Furthermore, it was highlighted water problems have the potential to cause conflict in Ica and Peru. The subsequent chapter will conclude and evaluate this thesis.

## CHAPTER NINE

### CONCLUSIONS: REFLECTING ON WATER IN ICA

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#### 9.1 CHAPTER INTRODUCTION

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This thesis set out to analyse how the Peruvian agro-export boom has affected marginal urban groups and their access to resources. This was undertaken through the case study of the asparagus industry in the Ica Valley and its implications on water availability for marginal urban groups. As summarised in the previous chapter, the rapid development of the asparagus industry and the neoliberal policies which drove it have had far-reaching and generally negative implications on water availability in Ica's marginal urban areas. The objective of this final chapter is therefore not to reiterate this discussion but rather evaluate this thesis and discuss some of the contributions it has provided. To begin, this chapter will demonstrate some of the theoretical contributions this study has formulated, thus connecting it to the grander theories introduced in the opening chapters. Following on, this chapter provides a number of policy suggestions for the water availability and management problems in Ica. This illustrates that this thesis also offers real world or practical contributions. Subsequently this chapter explores, notwithstanding some limitations, how this research project provides a solid starting point for a range of future research opportunities.

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#### 9.2 THEORETICAL CONTRIBUTIONS

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##### 9.2.1 Structuralism and Dependency Theories

It was established at the beginning of this thesis that the theories of structuralism and dependency have been important underpinning of this research. This section looks to invert this to see how the study has contributed back into these theories.

As discussed, structuralism formulated a core-periphery model for studying global development. It was recognised that the ability to export value-added products was limited to the 'developed' core while the periphery was restricted to the exportation of primary produce. Structuralism proposed that the peripheral countries, particularly in Latin American, need to shift from this resource periphery position in order to foster wide-spread development. According to structuralist thought, this meant a move away from 'outward oriented' development models which were unable to resolve the internal structural problems in the periphery (Prebisch, 1981). This thesis has fed back into these ideas by demonstrating

neoliberal reforms throughout Latin America have further cemented these countries as resource peripheries without looking to improve the structural problems which exist internally. My study of Peru's neoliberal reforms and the resulting export boom in asparagus clearly shows that liberalisation has simply deepened Peru's peripheral position. This thesis has thus argued the country's neoliberal development approach means that Peru will continue to suffer from constraints to development as predicted by structuralist thought.

Likewise, this research contributes to the resource curse thesis. As opposed to neoliberal ideas of comparative advantage, resource curse argues natural resource endowment can actually hinder long-term and holistic development. This is because resource export booms create over-reliance and cause the uneven sharing of the costs and benefits of resource exploitation (Auty, 1995; Murray, 2009). This work argues Ica's asparagus boom represents a modern day example of resource curse. As illustrated, Ica's ability to produce asparagus and the resulting export expansion has created an over-reliance on an unsuitable crop driving the over-exploitation of water. The uneven form of development which has ensued in Ica has seen the exclusion of marginal groups and the concentration of resources, bringing it in line with the resource curse argument.

Furthermore, my thesis has attempted to provide a starting point to break down the rural-urban divide which is common in development study. While past work in the field of resource curse theory has been very convincing little has focused on the important and complex urban-rural intersects involved in natural resource exploitation. My thesis provides a foundation for this by examining a modern resource curse centred in the rural sphere - the asparagus industry - and how it has crossed over to impact the urban sphere by affecting Ica's marginal urban groups.

This thesis has described how dependency theory analyses the power inequalities and unequal exchanges between the core and periphery. It argues these unequal relations drive the dual processes of 'development' in the core which creates 'underdevelopment' in the periphery (Frank, 1970). I propose that Ica's asparagus export industry provides a micro-scale example of this analysis. We can observe the executives and investors of the asparagus industry as the 'core' and Ica's urban marginal groups as the 'periphery'. The economic benefits of economic growth or 'development' which have been concentrated in the 'core' have created hardship or 'underdevelopment' by worsening water unavailability in the *pueblos jóvenes*. In this sense, the concentrated economic benefits and the hardship of water non-availability are intrinsically

linked, like the dual processes of development and underdevelopment. However, Ica's marginalised population has done little to protest these dual processes. I have, therefore, argued that this is because dependent relationships have emerged: the marginalised population is dependent on the agro-export sector for employment and therefore it is subordinate to and controlled by the agro-exporters. The situation is worsened when we realise this dependent relationship is not limited to the marginal groups but also to the local authorities, councils and even the state which are all dependent on the agro-exporters and the economic development they have created in some form.

### 9.2.2 A Place for Neostructuralism?

The failings associated with the neoliberal model saw the emergence of neostructuralist theory. Like structuralism, neostructuralism emphasises the role of the state in directing development. However, as discussed, it differs to older structuralism in the way it promotes a greater role of the global economy (Murray and Silva, 2004; Bidwell, 2011). Therefore neostructuralist ideas attempt to find a middle ground between neoliberalism and the theories of structuralism and dependency. Through the case of Ica, research has demonstrated the need for state involvement in development and planning. Yet, it also highlighted the importance of global investment for fostering economic growth and generating employment. In identifying the importance of both these factors, this thesis offers a place for neostructuralist ideas.

Nonetheless, neostructuralist ideas need to be accepted with caution. While the theory seeks to establish a middle ground, it has also been criticised for being 'neoliberalism with a human face' (Gwynne and Ortiz, 1997). That is to say, neostructuralism has been critiqued for ignoring the asymmetric power relations which reproduce social inequalities in Latin America. In a similar vein, neostructuralism has been labelled as a move away from critical academic and political thought in Latin America (Leiva, 2008; Bidwell, 2011). This thesis accentuates the need to critically examine the unequal power relations in Peru and Ica. Without undertaking this enquiry it would be very difficult to understand why Peru's neoliberal reforms have driven resource concentration to the exclusion of Ica's marginalised population.

The relevance of neostructuralist theory therefore remains somewhat unclear. On the one hand, it provides a possibly convenient mid-point between neoliberalism and the theories of structuralism and dependency. On the other, it is unclear if it has truly evolved away from neoliberal ideas, which puts the theory at risk of re-promoting a set of strategies which have

failed to improve the resource periphery position or challenge the entrenched inequalities in Latin American countries such as Peru.

### 9.2.3 Studies of Inequalities in Latin America and Peru

This thesis also feeds into general debates on inequality, neoliberalism and Latin American development through the exploration of Peru's neoliberal era. It reveals that while Peru's neoliberal model has driven rapid economic growth over the last 20 years yet it has done little to improve the country's inequality rates. My thesis thereby questions some of the achievements claimed by proponents of the neoliberal model. It argues this model has merely driven the continuation of underdevelopment and exclusive development in Peru. The inability to evenly share the benefits of economic growth as well as the exclusion of marginalised groups from resources in Ica serves as an allegory for the development problems experienced in greater Latin America. In response, this thesis asserts that both the state and civil society are integral parts of development planning and resource management. Without their inclusion the market is unlikely to foster inclusive development due to the unequal power structures which have developed in Latin America over its colonial and neo-colonial history.

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## 9.3 POLICY CONTRIBUTIONS

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I must begin this section by declaring that this research does not attempt to offer solutions to Ica's water problems. Past evidence shows externally imposed solutions are often harmful and instead solutions need to come from, and be implemented by, local stakeholders (Hepworth, et al, 2010). Instead I provide some practical suggestions formulated through the research process. It is also important to note this study does not support the 'knee-jerk' reaction of boycotting Peruvian asparagus. This is because the industry has been extremely important for generating much needed employment in Ica. Instead, more considered changes are required to bring the resolution to Ica's water difficulties. This section is broken into three parts; (1) emergency steps, (2) the promotion of effective water management and sustainability, and (3) the inclusion of civil society and the marginalised population.

### ***Part One: Emergency Steps***

As evidence has shown, in the short term, the state and the agro-exporters need to co-operate to avoid oncoming water crisis in Ica. To begin, initiatives need to be taken to reduce the amount of water being extracted from the aquifer. This could be aided through production changes from asparagus to less water intensive export crops such as paprika, grape or artichoke (Salazar, 2012). This is, in fact, beginning to take place as agro-exporters are starting

to be affected by water stress. Nonetheless, this change needs to be accelerated in order to avoid the critical drop in Ica's water table as outlined by ANA.

Improvements in irrigation technology may also help reduce the quantity of water drawn from Ica's aquifer. Yet, as explained, Ica's largest agro-exporters are already using efficient drip irrigation systems. This means any foreseeable technological advancement in irrigation is unlikely to have a large impact on the water agro-exporters require. The most controversial short term step would be to limit and then reduce the production of the agro-export sector (Bayer, 2009). This should return water extraction levels to the rates experienced prior to over-exploitation. This is to say, extraction rates need to be limited to the natural recharge rate of 252 million cubic metres per year as highlighted in chapter six.

Likewise, a water extraction tax should be imposed on the water extracted by agro-exporters instead of the current licence system (Bayer, 2009). The licence system is virtually a licence to over-extract water while a tax would centralise focus onto the amount of water being drawn. Of course this tax system would need to be policed strictly to ensure effectiveness and avoid the problems which afflict the current system. This system will need to punish those who exceed the extraction limit while providing benefits, such as tax breaks, to those who stay below this limit.

Furthermore, the government needs to implement a large scale irrigation project to support Ica's water needs. As discussed, however, this should not be promoted as the sole solution to Ica's water issues. A technological or 'techno-fix' solution is unable to deal with over-demand problems of water and without taking other measures such a project will merely fuel further excessive demand. Another important concern is that a large scale water project has the potential to create water shortages in other communities, like in the Huancavelica region. Accordingly, large irrigation projects need to be accompanied with environmental impact assessments which include the potential impacts on highland communities and their ability to adapt to climate change. Finally, the recharge of Ica's aquifer could be increased through artificial methods where they are found to be technically and financially feasible (Hepworth, et al, 2010).

### ***Part Two: The Promotion of Effective Water Management and Sustainability***

In addition to the measures above, more radical changes are necessary to promote sustainable water use in Ica and Peru in general. First of all, longer term planning with state involvement is

required. This planning needs to find a real balance between social, environmental, and economic sustainability. As demonstrated, the current neoliberal model has been overly focused on economic growth at the expense of social and environmental priorities. The example of Ica's asparagus boom illustrates this well. For instance, the industry's expansion has not followed from any long term planning or consideration of its wide ranging implications. My research argues that the idea the market will effectively manage resources and find solutions to resource over-exploitation has plainly not happened in Ica.

As part of a longer term focus, more comprehensive and interdisciplinary studies of Ica's water reserves and water use are needed. These studies will allow regulators and water users to better understand exactly how much water can be sustainably extracted. In addition, a complete inventory of the water which is currently being used and at what rate needs to be established in order to inform and support regulatory decisions. Without knowing the exact amount of water that agro-exporters are using it makes very difficult to regulate them. Moreover, misinformation is generating mistrust and conflict in the valley while more comprehensive information will help to alleviate this problem.

In a similar vein, the regulating body, ANA-ALA, needs to be provided with the sufficient funding and human resources to effectively manage, monitor and regulate Ica's aquifer. Without these resources the agency will remain ineffective and lack the authority to regulate water use. As illustrated, it is clear that the expansion of Ica's agricultural frontier needs to be controlled. This process, however, cannot take place in an environment where the inefficiency of the regulators means they are not respected by those they are meant to regulate. This necessitates a shift away from the neoliberal strategy and promotes the re-integration of state into the regulation of water in Ica. With the establishment of ANA in 2008 it is clear this process is already beginning. Yet, it is pushing against a long process of neoliberal reform which has weakened an already weak state and its capacity to manage resources. Moreover, these reforms fomented the emergence of agro-exporting companies which are now large and increasingly powerful, making the state's position as a regulator even more precarious.

Additionally, there is a great need to build co-operation in the valley and break down political polarisation between different stakeholders. This thesis argues that without this co-operation, progress towards long term and even development in Ica is profoundly limited. Finding solutions benefit everyone in the valley, apart from the few large agro-exporters which continue to benefit from the aquifer's over-exploitation (Hepworth, et al, 2010). Fostering this

notion that the over-exploitation can be mitigated through co-operation will help provide the incentives to get different stakeholders working together. The currently polarised environment in Ica is, however, counter-active to this.

### ***Part Three: The Inclusion of Civil Society and the Marginalised Population***

The inclusion of civil society and the marginalised population will likely help promote sustainable water use in Ica. In the first place, greater transparency in the management and use of water from the government and agro-exporters is required. This could be achieved through increased civil society involvement in the monitoring processes of resource management. Civil society organisations or NGOs could be used to ensure the protections on domestic water supplies under Peru's new Water Resources Law are delivered. Central to this would be the re-direction and possible increases in international donor and government funding packages in order to develop the capacities of local organisations. This would help establish these organisations as more effective water management watchdogs.

Similarly, the Water Resources Law needs to be implemented effectively so the water needs of all users, including marginalised groups, are better integrated into water management. Again, this requires a step away from the current over-prioritisation towards agro-export water needs. In Ica, this should also include increases in public investment towards water infrastructure and earthquake recovery, especially in the marginalised areas.

I acknowledge that under Peru's current political environment some of these measures are possibly unrealistic. For instance, the agro-exporters are driven by profit and have responsibilities to their investors so they are therefore likely to resist any measures which attempt to force them to reduce production or limit their expansion. Furthermore, these exporters hold great influence over the state which is currently both unwilling and unable to regulate water and promote equal access to it. This thesis has nonetheless proven measures are required to avoid widespread water crisis, increased hardship, and the very real possibility of violent social conflict in Ica.

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## **9.4 RESEARCH LIMITATIONS AND OPPORTUNITIES FOR FURTHER RESEARCH**

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This section explores the limitations of the research as well as the areas identified as opportunities for further research. To begin, my position as a foreign researcher in Peru was interesting as it created both limitations and opportunities. As mentioned, Ica's largest asparagus exporters and those linked to the industry were extremely closed off to research



undertaken by an 'outsider'. For instance, a representative from JUASVI bluntly stated he would not give me any statistics as foreigners had 'misused' their data in the past. The largest agro-exporters refused to be interviewed for similar reasons. This made me question if whether it would be more appropriate if an in-country researcher to undertake this work. Conversations in local universities however confirmed that these groups were increasingly closed off to all public dialogue. My foreign researcher position conversely provided me with opportunities in the universities, NGOs and community gatekeepers. These groups were open to being interviewed and sharing data. Some of this openness is grounded in the fact that these groups want information about the situation in Ica to spread outside of Peru. For example, an academic in Lima told me she thinks it is positive that researchers from other countries are becoming interested in Ica and its water issues. Additionally, government and council organisations were all very supportive of the research, sharing both their views and data with me.

What has resulted unfortunately is the absence of the views of Ica's largest six agro-exporters which extract the majority of water in the valley. I see this to be the greatest limitation of the work. More time in Ica may have provided greater opportunities to build trust with those involved in the asparagus industry or find other avenues to approach them. As shown, the interviews which were obtained with those involved in agriculture were of huge value to the research. A further research opportunity, nonetheless, would be to better understand the challenges and perspectives of Ica's agro-exporters in regard to the water problems developing. As such, future studies should continue to put pressure on agro-exporters but also attempt to build co-operation and dialogue with them.

An additional limitation of the study is it fills in an in between scale. While it provides a solid sample of the *pueblos jóvenes* it does not include all of Ica's urban areas suffering from water availability. On the other hand, a smaller scale project, for instance three or four families, may have revealed greater detail from the *pueblos jóvenes*. If I was to reapply the study I would therefore, decide to focus on an all-inclusive research project studying all of the *pueblos jóvenes* implicated, or on a micro-scale study to examine what the expansion of the asparagus industry has meant for a small number of families, thereby providing a detailed qualitative investigation. Both of these options provide opportunities of further research.

The possibilities of comparative studies also produce opportunities for further research. It would be exciting to conduct similar research on Peru's neoliberal reforms and what they have

meant for resource access in marginal areas in other regions of the country. This would be valuable in both the highland regions and in other parts of the productive coast. In doing this, further research would establish if, and how, the reforms are impacting different regions. The limited time and resources in Master's research puts obvious constraints on the possibilities of comparative studies where primary data is required. The time needed to travel between regions would be over-burdening in itself.

Besides from changing the scales or locations, temporal studies would also provide opportunities for more research. Of particular interest would be to reapply this study in five to ten years to analyse current predictions and observe changes in Ica's water situation. Similarly, it would be interesting to discover whether the implementation of the 2009 Water Resources Law and ANA are able to have a positive impact on the marginal group inclusion in water management and access.

Finally, it would be valuable to implement further studies which break down the rural-urban divide in development studies. Past studies in development have been usually limited to either the urban or rural spheres, observing them as two separate identities. This, however, ignores the important and growing interconnections between the two. By acknowledging these complex interconnections it becomes clear earlier studies have been inadequate in addressing the importance of urban-rural development as a whole. A possible avenue improving this would be through additional research into neoliberal reforms and modern day resource curses throughout the Latin American region to see if urban-rural connections can be identified.

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## 9.5 FINAL REMARKS

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In 2012, I set out to discover how the rapid development of Ica's asparagus industry and the neoliberal policies which carried it had impacted on marginal urban groups and in particular their access to water. In doing so, I have attempted to bring forward the perspectives and concerns of those usually omitted. It therefore seems appropriate to close my work with a poignant quote from this marginalised group. This final quote from the *pueblo joven* La Nueva Esperanza encapsulates the injustice of Ica's coming water crisis. In discussing the authorities and the agro-exporters one of my participants (RP2-CSG, 2012) told me in an anxious but strong voice that;

“They should at least respect our rights as citizens, and think of the future of our country. It is obvious that our children will be the most deeply affected.

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## APPENDIX 1: SUMMARIES OF RESEARCH PARTICIPANTS

### **CSG – Central Study Group (People Living in Marginal Urban Areas of Ica)**

<b>Research Participant code</b>	<b>Town and District</b>	<b>Date</b>
RP1-CSG	La Nueva Esperanza, Guadalupe	20/07/2012
RP2-CSG	La Nueva Esperanza, Guadalupe	20/07/2012
RP3-CSG	La Nueva Esperanza, Guadalupe	20/07/2012
RP4-CSG	La Nueva Esperanza, Guadalupe	20/07/2012
RP5-CSG	Mendoza, Pachacutec	06/10/2012
RP6-CSG	Mendoza, Pachacutec	06/10/2012
RP7-CSG	Eduardo Espinoza, Guadalupe	26/09/2012
RP8-CSG	Eduardo Espinoza, Guadalupe	26/09/2012
RP9-CSG	Eduardo Espinoza, Guadalupe	26/09/2012
RP10-CSG	Eduardo Espinoza, Guadalupe	26/09/2012
RP11-CSG	Eduardo Espinoza, Guadalupe	26/09/2012
RP12-CSG	Eduardo Espinoza, Guadalupe	26/09/2012
RP13-CSG	Las Torres in La Tinguiña	07/10/2012
RP14-CSG	Las Torres in La Tinguiña	07/10/2012
RP15-CSG	Las Torres in La Tinguiña	07/10/2012
RP16-CSG	Los Castillos, Santiago	22/09/2012
RP17-CSG	Los Castillos, Santiago	22/09/2012
RP18-CSG	Los Castillos, Santiago	22/09/2012
RP19-CSG	La Castellana, Santiago	22/09/2012
RP20-CSG	La Castellana, Santiago	22/09/2012
RP21-CSG	La Castellana, Santiago	22/09/2012
RP22-CSG	San Martín, Central Ica	02/09/2012
RP23-CSG	San Martín, Central Ica	02/09/2012
RP24-CSG	San Martín, Central Ica	02/09/2012
RP25-CSG	San Martín, Central Ica	02/09/2012
RP26-CSG	San Martín, Central Ica	02/09/2012

### **EG – Expert Group (Academics, Government Representatives, NGO Staff and Other Experts)**

<b>Research Participant code</b>	<b>Organisation</b>	<b>Location</b>	<b>Date</b>
RP27-EG	ALA (Local Administration of Water)	Ica	20/09/2012
RP28-EG	Aquafondo (Private Water Fund)	Lima	28/09/2012
RP29-EG	CEPES (Centre for Peruvian Social Studies)	Lima	04/09/2012
RP30-EG	University of Texas at Austin	(Email interview)	26/10/2012
RP31-EG	CODEHICA (Human Rights Commission of Ica)	Ica	28/08/2012
RP32-EG	CODEHICA (Human Rights Commission of Ica)	Ica	28/08/2012
RP33-EG	CODEHICA (Human Rights Commission of Ica)	Ica	28/08/2012

RP34-EG	Independent academic and social activist	Ica	02/09/2012
RP35-EG	FREDEJUP (The Front for the Defence and Development of Young Towns and Populated Centres of Ica)	Ica	20/09/2012
RP36-EG	University: Universidad Nacional San Luis Gonzaga de Ica	Ica	13/09/2012
RP37-EG	Mayor of Pachacutec	Ica	16/10/2012
RP38-EG	Mayor of Santiago	Ica	12/09/2012
RP39-EG	Mayor of Guadalupe	Ica	11/10/2012
RP40-EG	Mayor of La Tinguiña	Ica	12/10/2012
RP41-EG	President of San Martín Neighbourhood Association	Ica	02/09/2012
RP42-EG	EMAPICA (Company of Public Potable Water and Sewage of Ica)	Ica	24/09/2012
RP43-EG	Regional Government of Ica	Ica	17/09/2012
RP44-EG	University: Pontificia Universidad Católica del Perú	Lima	05/10/2012
RP45-EG	University: Pontificia Universidad Católica del Perú	Lima	05/10/2012
RP46-EG	University: Pontificia Universidad Católica del Perú	Lima	06/09/2012
RP47-EG	JUASVI (Groundwater Users' Board of the Ica Valley)	Ica	10/10/2012
RP48-EG	AAI (Ica Farmer's Association)	Ica	21/09/2012
RP49-EG	Independent Engineer	Ica	06/10/2012

**FPG – Farmer and Processor Group (Representatives from Asparagus Processing Plants and Asparagus and Non-Asparagus Farmers)**

Research Participant code	Place of Employment	Crops Produced or Processed	Date
RP50-FPG	Processor	Asparagus	20/08/2012
RP51-FPG	Producer	Asparagus	20/08/2012
RP52-FPG	Producer	Asparagus	12/08/2012
RP53-FPG	Producer	Asparagus	11/10/2012
RP54-FPG	Producer	Onion, avocado, melon, flowers and table grape	24/10/2012
RP55-FPG	Producer	Asparagus	09/11/2012 (Email Interview)
RP56-FPG	Producer	Grape (Formerly Asparagus)	23/10/2012
RP57-FPG	Producer	Olive Oil	26/07/2012
RP58-FPG	Processor	Asparagus	02/08/2012
RP59-FPG	Processor	Asparagus, grape and avocado	08/08/2012

## APPENDIX 2: PARTICIPANT INFORMATION SHEET AND SEMI-STRUCTURED INTERVIEW SCHEDULES CSG

Participants from marginal urban areas (Central Study Group) were supplied with the information shown below. A consent form was also signed prior to each interview which is located in appendix 4



Participant Information Sheet for study of Resource Management, Marginal Urban Groups and the Expansion of Industrial Farming: The case of Urban Water and Asparagus in Ica, Peru.  
Central Study Group

Researcher: Peter Williams of the School of Geography, Environment and Earth Sciences at Victoria University of Wellington, New Zealand.

I am a Masters student in Development Studies at Victoria University of Wellington. As part of my thesis I am undertaking research in Peru. The research will investigate how the asparagus industry in the Ica Valley has impacted water availability, with special mention of marginal urban people. I have obtained ethics approval from my university in order to protect research participants as well as myself. I am inviting adults who live in urban Ica to be interviewed. Questions will be based on their experiences with urban water supplies as well as any thoughts on the asparagus industry. The collected responses will provide data for my project and be put into my written thesis on an anonymous basis. This means it will not be possible for anyone to be identified personally, unless it is explicitly stated that an informant wishes to be identified. If a name is to be used it will be fictional, unless, again, it is explicitly stated that an informant wishes to be identified by name. Participants can withdrawal the data collected from them at any stage prior to the completion of data collection and analysis (by the 01/01/13) with no questions asked. The responses to my questions will be kept strictly confidential. No one apart from my supervisor Warwick Murray and I will have access to the information collected. The data obtained will be stored following the completion of the project. This data will remain completely confidential and be stored in a secure manner. Interview data may be used to compare changes over the next ten years. If the participants wish for their responses to destroyed, this will take place one year after the completion of the thesis, at the request of the research participants.

Contact Details;

Researcher: Peter Williams  
Email: williapete1@myvuw.ac.nz  
Phone (New Zealand): (+64) 027 3908695  
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Información para Participantes de investigación en un estudio sobre: Gestión de Recursos, Grupos Marginales y Expansión de la Agro-industria: El Caso de Agua Urbana y Espárragos en Ica, Perú.

Estudio Grupo Central

Investigador: Peter Williams de la Escuela de Geografía, Ambiente y Ciencias de la Tierra en la Universidad Victoria de Wellington, Nueva Zelanda (O en Ingles the School of Geography, Environment and Earth Sciences at Victoria University of Wellington, New Zealand.)

Soy estudiante de maestría en Estudios de Desarrollo de la Universidad Victoria de Wellington. Para mi tesis yo necesito completar una investigación en Perú. Esta investigación estudia la industria de espárrago en El Valle de Ica y las implicaciones para la disponibilidad de agua, especialmente para marginales de población urbana. He obtenido aprobación ética para proteger a los participantes y a mí mismo también. Estoy invitando adultos que viven en Ica urbana para ser entrevistados, las preguntas serán sobre sus experiencias con agua pública y opiniones sobre la industria de espárrago. La data coleccionada es para mi proyecto y será parte de mi tesis pero completamente anónimo, eso significa que es imposible para un participante de ser identificado personalmente, a menos que sea explícitamente declarado, que un participante desee ser identificado. Si yo uso un nombre eso será ficcional, a menos que sea, valga la redundancia, explícitamente declarado que un participante desea ser identificado por su propio nombre. Los participantes pueden retirar su información ante la colección de data y análisis (antes el 01/01/13) sin preguntas. Las respuestas se van a mantener en completa confidencialidad. Nadie excepto mi supervisor Warwick Murray y Yo tendremos acceso a las datas. La información estará almacenada después de que mi investigación sea completada. La información será confidencial y segura. Los datos de las entrevistas se pueden usar para comparar los cambios en los próximos diez años. Si los participantes desean que sus respuestas sean destruidas, esto pasará un año después de haberse completado la tesis en la solicitud del participante.

Detalles Contacto;

Investigador: Peter Williams

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Celular (Perú): (+51) 961784102

Supervisor: Warwick Murray

Dirección de correo electrónico: [Warwick.Murray@vuw.ac.nz](mailto:Warwick.Murray@vuw.ac.nz)

Teléfono: (+64) 04 463 5029

## **Central Study Group– Semi-Structured Interview Schedule**

### ***Questions in English:***

#### **Personal background/economic and family situation**

1. Where are you from?
2. How long have you lived in Ica for? (if not from Ica)
3. Do you have children? If yes, how many?
4. What is your main source of income? (Or what is your job?)
5. Is your income enough or do you need another job?

#### **Access to water**

6. Where do you get your water from?
7. How many days per week do you receive water?
8. How many hours per day do you receive water?
9. How do you rate the water that arrives to your town?
  - a. Very good
  - b. Good
  - c. Poor
  - d. Very poor
10. What do you believe is the greatest problem related to water in Ica?
11. Do you have any concerns over the future of water in your community?

#### **Water management and industrial agriculture**

12. Are you or anyone in your family connected to the asparagus industry?
13. If yes, how so?
14. Would you say the industry's growth has been something positive for you?
15. Do you believe that the asparagus industry has affected Ica's water supplies?
16. Do you feel included in the decisions of the authorities in reference to water management?
17. If so, how? Or if not, why not?
18. In what ways could you be more included?
19. Do you have any further comments?

### **Questions in Spanish:**

#### **Los datos personales/económicos y situación familiar:**

1. ¿De dónde eres?
2. ¿Hace cuánto vive usted en Ica? (si no es de Ica)
3. ¿Tiene hijos? (En caso afirmativo), ¿cuántos?
4. ¿Cuál es su principal fuente de ingresos? (¿o cual es tu trabajo?)
5. ¿Tus ingresos son suficiente o necesita usted otro trabajo?

#### **El acceso al agua:**

6. ¿De dónde obtiene su agua?
7. ¿Cuántos días por semana tiene usted agua?
8. ¿Cuántas horas por día tiene usted agua?
9. ¿Qué piensa usted sobre el agua que llega a su pueblo?



- a. Muy bueno
- b. Bueno
- c. Malo
- d. Muy malo

10. ¿Cuál crees que es el mayor problema relacionado con el agua en Ica?

11. ¿Tiene usted alguna preocupación sobre el futuro del agua en su comunidad?

#### **Gestión del agua y la agroindustria**

12. ¿Está usted o alguien de su familia conectado con la industria de los espárragos?

13. En caso afirmativo, ¿cómo así?

14. ¿Diría usted que el crecimiento del sector ha sido algo positivo para usted?

15. ¿Cree usted que la industria del espárrago ha afectado a los suministros de agua en Ica?

16. ¿Te sientes incluido en las decisiones de las autoridades en referencia a la gestión del agua?

17. Si es así, ¿cómo? O si no, ¿por qué no?

18. ¿De qué manera podrías ser más incluido?

19. ¿Tiene usted más comentarios?

### **APPENDIX 3: PARTICIPANT INFORMATION SHEET AND SEMI-STRUCTURED INTERVIEW SCHEDULES EG/FPG**

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All participants from the Expert and Farmer/Producer Study Groups were supplied with the same information shown below. Again, a consent form was also signed prior to each interview which is located in appendix 4.



Participant Information Sheet for study of Resource Management, Marginal Urban Groups and the Expansion of Industrial Farming: The case of Urban Water and Asparagus in Ica, Peru.  
Study Groups 2 and 3: Experts, Farmers and Processors

Researcher: Peter Williams of the School of Geography, Environment and Earth Sciences at Victoria University of Wellington, New Zealand

I am a Masters student in Development Studies at Victoria University of Wellington. As part of my thesis I am undertaking research in Peru. The research will investigate the participation and perceptions of urban marginal groups in reference to resource management, with special emphasis on the expanding asparagus industry and the implications this is having on water access and rights in urban Ica. I have obtained ethics approval from my university in order to protect research participants as well as myself. I am inviting academics and specialist experts who are involved in the field of water issues in Ica to be interviewed. Questions will be based on their knowledge of water availability, resource management and the implications for marginal urban groups. The collected responses will provide data for my project and be put into my written thesis on an anonymous basis. This means it will not be possible for anyone to be identified personally, unless it is explicitly stated that an informant wishes to be identified. If a name is to be used it will be fictional, unless, again, it is explicitly stated that an informant wishes to be identified by name. Participants can withdraw the data collected from them at any stage prior to the completion of data collection and analysis (by the 01/01/13) with no questions asked. The responses to my questions will be kept strictly confidential. No one apart from my supervisor Warwick Murray and I will have access to the information collected. The data obtained will be stored following the completion of the project. This data will remain completely confidential and be stored in a secure manner. Interview data may be used to compare changes over the next ten years. If the participants wish for their responses to be destroyed, this will take place one year after the completion of the thesis, at the request of the research participants.

Contact Details;

Researcher: Peter Williams

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Información para Participantes de Investigación en un estudio sobre: 'La Gestión de Recursos, Grupos Marginales y Expansión de la Agro-industria: El Caso de Agua Urbana y Espárragos en Ica, Perú.'

Grupos de Estudios 2 y 3: Expertos, Agricultores y Procesadores

Investigador: Peter Williams de la Escuela de Geografía, Ambiente y Ciencias de la Tierra en Universidad Victoria de Wellington, Nueva Zelanda (O en Ingles the School of Geography, Environment and Earth Sciences at Victoria University of Wellington, New Zealand.)

Soy estudiante de maestría en Estudios Desarrollo en la Universidad Victoria de Wellington. Para mi tesis yo necesito completar una investigación en Perú. Esta investigación estudia la participación y la percepción de los grupos urbanos marginales, en referencia a la gestión de recursos, con especial énfasis en la industria en expansión del espárrago y sus implicaciones en el acceso y el derecho del agua en Ica urbana. He obtenido aprobación ética para proteger a los participantes y a mí mismo también. Estoy invitando académicos y expertos especializados que están involucrados en agua en Ica para ser entrevistados. Las preguntas serán sobre sus conocimientos de la disponibilidad de agua, la gestión de recursos, y las implicaciones para grupos urbanos marginales. La data coleccionada es para mi proyecto y será parte de mi tesis pero completamente anónimo. Esto significa que es imposible para un participante ser identificado personalmente, a menos que sea explícitamente declarado que un participante desea ser identificado. Si yo uso un nombre eso será ficcional, a menos que sea, repito, explícitamente declarado que un participante desea ser identificado por su nombre. Los participantes pueden retirar su información ante la colección de data y análisis (antes el 01/01/13) sin preguntas. Las respuestas se van a mantener en completa confidencialidad. Nadie excepto mi supervisor Warwick Murray y Yo tendremos acceso a las datas. La información será almacenada después de que mi investigación sea completada. La información será confidencial y segura. Los datos de las entrevistas se pueden usar para comparar los cambios en los próximos diez años. Si los participantes desean que sus respuestas sean destruidas, esto pasará un año después de haberse completado la tesis en la solicitud del participante.

Detalles Contacto;

Investigador: Peter Williams

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Supervisor: Warwick Murray

Dirección de correo electrónico: Warwick.Murray@vuw.ac.nz

Teléfono: (+64) 04 463 5029

## **Expert Group – Interview Schedule**

### ***Questions in English:***

#### **Personal Information**

1. How would you describe yourself (It can be more than one)
  - a. An academic
  - b. A government representative (including regional)
  - c. A specialist (for example a water or agricultural engineer)
  - d. A member of an NGO
  - e. A social or environmental activist
  - f. Other (please explain)
2. Please explain briefly your connection to water in Ica and/or the asparagus industry and/or marginal urban groups.

#### **Neoliberalism and Resource Management**

3. Do you believe neoliberal (or free market) ideas have influenced resource management processes in Peru/Ica?
4. If yes, how so?
5. Do you believe that these ideas have encouraged the development of the asparagus industry in Ica?
6. If yes, in what ways?
7. What has this meant for local water supplies?
8. Do you believe Ica has problems with water availability?

#### **Marginal Groups and Water Management**

9. Would you say that water priorities and management have been effective in Ica?
10. Do you believe water management processes include urban marginal groups?
11. If yes, how so? If not, why not?
12. How has the asparagus industry affected water availability for urban marginal groups?
13. What perceptions do you believe marginal groups hold about resource management and the asparagus industry?
14. Do you have any further comments?

### ***Questions in Spanish:***

#### **Información Personal**

1. ¿Cómo te describes tú? (puede ser más de uno)
  - a. Un académico
  - b. Representante del gobierno (incluidos los regionales)
  - c. Un especialista (por ejemplo un ingeniero del agua o agricultura)
  - d. Miembro de una ONG

- e. Una activista social/ambiental
  - f. Otro (por favor describa)
2. Por favor, explique brevemente su relación con el agua en Ica y/o la industria de espárragos y/o los grupos marginales urbanos.

### **El Neoliberalismo y la Gestión de los Recursos**

3. ¿Cree usted que las ideas neoliberales (o de libre mercado) han influido en los procesos de gestión de los recursos en el Perú y/o Ica?
4. Si es así, ¿Cómo?
5. ¿Cree usted que estas ideas han apoyado al desarrollo de la industria de los espárragos en Ica?
6. En caso afirmativo, ¿de qué manera?
7. ¿Qué ha significado esto para los suministros de agua locales?
8. ¿Cree usted que hay problemas de la disponibilidad del agua en Ica urbana?

### **Grupos Marginales y la Gestión del Agua**

9. ¿Diría usted que la gestión y la prioridad del agua ha sido eficaz en Ica?
10. ¿Cree usted que los procesos de gestión del agua incluyen a los grupos urbanos marginales?
11. Si es así, ¿cómo? Si no, ¿por qué no?
12. ¿Cómo la industria del espárrago ha afectado la disponibilidad del agua para los grupos urbanos marginales?
13. ¿Cuál percepción cree usted que los grupos marginales tienen sobre la gestión de los recursos y la industria de los espárragos?
14. ¿Tiene usted más comentarios?

### **Farmer and Processor Group – Interview Schedule**

Note: Wording was slightly altered when interviews were undertaken with representatives of processing plants and Ica Farmer's Association.

#### ***Questions in English:***

#### **Details of operations**

1. What is the size of your farm?
2. Does this farm produce and export asparagus?
3. If so, when did this begin? If not, what do you produce here?
4. What quantity of produce is exported from this farm? (per year)
5. How many people are employed here?

#### **Water use over time**

6. How much water is used here on a daily basis?
7. How has water use and demand changed over time?
8. Are you experiencing water supply problems?
9. If so, what problems exist?

10. What measures are you taking to mitigate the water problems?

**Opinions surrounding water issues (regulation, growth of sector etc)**

11. Do you believe Ica is facing or is going to face major water problems?
12. If so, what would you say is the greatest contributing factor to these problems?
13. In what ways do you believe these problems could be mitigated?
14. Do you feel that the agricultural sector is effecting on domestic water supplies?
15. Do you have any further comments?

***Questions in Spanish:***

**Detalles de las operaciones**

1. ¿Cuál es el tamaño de este fundo?
2. ¿Este fundo produce y exporta espárragos?
3. Si es así, ¿cuándo comenzó esto? Si no, ¿Qué se produce y exporta aquí?
4. ¿Qué cantidad de productos se exporta de este fundo? (por año)
5. ¿Cuántas personas trabajan allí?

**El uso del agua a través del tiempo**

6. ¿Cuánta agua se utiliza en aquí al día?
7. ¿Cómo han cambiado el uso y la demanda del agua con el tiempo?
8. ¿Estás viendo problemas del suministro de agua?
9. Si es así, ¿qué problemas existen?
10. ¿Qué medidas se están tomando para mitigar los problemas de agua?

**Las opiniones sobre los problemas del agua**

11. ¿Cree usted que Ica se enfrenta o se va a enfrentar con problemas grandes de agua?
12. Si es así, ¿cuál diría usted que es el más grande factor que contribuye a estos problemas?
13. ¿De qué manera cree usted que estos problemas podrían mitigarse?
14. ¿Cree usted que el sector agrícola está afectando a los suministros domésticos de agua?
15. ¿Tiene usted más comentarios?

## APPENDIX 4: CONSENT FORM

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All interview participants signed the same consent form as shown below:



Consent to Participate in Research

Victoria University of Wellington, New Zealand

Researcher: Peter Williams

Title of project: Resource Management, Marginal Urban Groups and the Expansion of Industrial Farming: The case of Urban Water and Asparagus in Ica, Peru.

I have had the research explained to me clearly and understand the project. I have had the opportunity to ask questions, and any questions I had were well answered. I understand that I have the ability to withdrawal any information I give from this project, as long as it is prior to the completion of data collection and analysis (by the 01/01/13). I understand I am able to withdraw without providing reasons or being penalised in any manner.

I understand that the information I give will be kept confidential to the researcher and their supervisor, and I will remain completely anonymous and my responses will not be attributed to me in any way. I understand that the only way my name will be used is if I give explicit permission for this.

I understand that my responses will be stored following the completion of the project and possibly used to compare changes over the next ten years. I understand that this data will remain completely confidential and will be stored in a secure manner. I understand that if I want my responses to be destroyed, this will take place one year after the completion of the thesis, at my request.

☐ Please tick here if you would like to receive summary of the finished research via e-mail

Signed:

Participant's name:

Note:

If a research participant is unwilling to sign a consent form, however wants to take part in the interview, the use of verbal consent may be used. In such a case, the participant will be agreeing to the content of the consent form but through a verbal conversation. That date, time and participant's name of this conversation will be recorded but will remain completely confidential.



Consentimiento para Participar en la Investigación  
Universidad Victoria de Wellington, Nueva Zelanda

Investigador: Peter Williams

Título del proyecto: 'Gestión de Recursos, Grupos Marginales y Expansión de la Agro-industria:  
El Caso de Agua Urbana y Espárragos en Ica, Perú.'

La investigación me fue explicada muy claramente y entiendo el proyecto. Yo he tenido la oportunidad de hacer preguntas y las preguntas que tuve fueron contestadas. Entiendo que puedo retirar mi información de este proyecto si esto es antes de la colección de la data y el análisis es completada (antes el 01/01/13). Entiendo que yo puedo retirarlo sin dar razones o ser penalizado.

Entiendo que la información que doy se mantendrá completamente confidencial al investigador y a su supervisor, y voy a ser totalmente anónimo y mis respuestas no serán atribuidas a mí de ninguna manera. Entiendo que mi nombre no va a ser usada a menos que yo explícitamente declare que deseo ser identificado.

Yo entiendo que mis respuestas se guardarán después de la finalización del proyecto y se usarán para comparar los cambios en los próximos diez años. Entiendo que esta información se mantendrá completamente confidencial y se guardarán de forma segura. Yo entiendo que si quiero que mis respuestas a sean destruidas, esto pasará un año después de la finalización de la tesis, a petición mía.

☐ Por favor marca aquí si le gustaría usted recibir el resumen de la investigación terminada por e-mail

Firma:

Nombre del Participante:

Nota:

Si un participante de la investigación no quiere firmar el formulario de consentimiento, y sin embargo quiere participar en la entrevista, podemos utilizar un consentimiento verbal. En este caso, el participante estará de acuerdo con el contenido del formulario de consentimiento, pero a través de una conversación verbal. La fecha, hora y nombre del participante de la conversación se registrará, pero se mantendrá completamente confidencial.