The political ecology of state-led climate change adaptation: A Study of Labour-Intensive Agriculture From Turkey

Ph.D. Thesis

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“Portem un nou món als nostres cors, aquest mon esta creixent en aquest instant”

Buenaventura Durruti

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The photo on the cover of this thesis portrays a tranquil early spring evening in 2011 from the fields of Karataş, which happened to be the fieldwork site of my dissertation. This picture brings me of many memories, not only because it clearly depicts *the quiet vista* behind which a series of different political ecological stories unfold but also because it reminds me of the process of writing this very thesis in your hands. Similar to the landscape of Karataş, which looks uncomplicated as long as the people behind it remain unaccounted for, the people behind this thesis may not visible to the reader's eye at the first glance. Nonetheless I am grateful to each and every one of them (and to all those that I forget here) for the warmth, camaraderie (and occasional food and booze) that they have provided me in the process. As a person who loves to first read 'Acknowledgements' section in any manuscript, I probably now need to put down the invisible names behind this work (although one always has to remember the wisdom of the Little Prince: *L'essentiel est invisible pour les yeux*). Hence I would like to take this opportunity to extend a heartfelt *"Thank You!"* to them here.

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Abstract

There is a widespread recognition that global environmental changes today cannot be understood, analyzed and responded without an acknowledgement of the role of neoliberal globalization in perpetuating and exacerbating these changes. The simultaneous overlap and feedback between these two main global changes lead to double exposures where vulnerabilities inescapably become visible and adaptive intervention to safeguard political and economic interests become imperative. The evidence from this research suggests that power asymmetries, vested interests and diverse values present in climate change adaptation and national development policy are decisive on the type of preferred adaptation pathways. Such value-laden pathways might lock-in the national policy to techno-managerial solutions by undervaluing redistributive social policy measures and therefore closing the political debate on alternative future imaginaries.

Based on three distinct empirical studies on labour-intensive agriculture in Turkey, this thesis explores how state-led adaptive interventions construct, attempt and fail to reduce vulnerabilities with not hampering the continuity of capital accumulation. In doing so, it utilizes political ecology's toolbox to study a relatively understudied population key to labour-intensive agriculture: migrant seasonal agricultural workers. Consequently, this thesis identifies that climate change adaptation policy in Turkish agriculture facilitates socio-ecological cost shifting through its vision of the agricultural sector as a homogeneous unit. This, arguably, stems from an oversimplification of the uneven power relations within the labour-intensive agricultural sector as well as a commitment to developmentalism. Findings from two periods of fieldwork in southern Turkey further confirm that adaptive interventions in Turkish agriculture strive to produce self-adaptable, resilient subjects who are rendered responsible to deal with their own vulnerabilities. Values and worldviews of adaptation policy stakeholders deciphered through Q-methodology confirm this prevalence of *resilience-as-adjustment* over *adaptation-as-transformation*. I argue that a particular understanding of adaptation as an intervention to safeguard 'the development project', broadly defined as a political and economic project that prioritizes markets and extends them as the means of economic growth and modernity haunts the climate change adaptation policy domain in Turkey. All three empirical studies, in this regard, point at the need to re-think adaptation-development relations through more radical and transformative, alternative paradigms that adaptation might provide if human condition is to be improved equitably.

Keywords: adaptation, vulnerability, seasonal agricultural workers, biopolitics, developmentalism, Turkey.

Resumen

Hay un amplio reconocimiento sobre el hecho de que los cambios ambientales globales actuales no pueden ser entendidos, analizados y respondidos sin reconocer el rol de la globalización neoliberal en su misma perpetuación y exacerbación. El feedback y la superposición entre estos dos principales cambios globales llevan a dobles exposiciones, donde las vulnerabilidades se hacen irremisiblemente visibles y la intervención adaptativa para salvaguardar intereses políticos y económicos se convierte en imperativa. Los resultados de la investigación sobre este campo sugieren que las asimetrías de poder, los intereses particulares y diversos valores presentes en las políticas de adaptación al cambio climático y el desarrollo nacional son decisivas en la elección de unos u otros caminos de adaptación. Estos caminos, cargados también de valores morales, pueden limitar las políticas nacionales a soluciones técnicas y de gestión, al minusvalorar las medidas políticas de redistribución social y por lo tanto ocluir el debate político sobre imaginarios futuros alternativos.

Basándose en tres estudios empíricos sobre la agricultura de trabajo intensivo en Turquía, esta tesis explora cómo las intervenciones adaptativas dirigidas por el Estado configuran las vulnerabilidades, y a la vez fracasan en su intento de reducirlas, al no obstaculizar la continuidad de la acumulación de capital. Con esta finalidad, esta tesis utiliza las herramientas de la ecología política para analizar un grupo de población relativamente poco estudiado pero clave para la agricultura de trabajo intensivo: los trabajadores agrícolas de migración estacional. En consecuencia, esta tesis identifica cómo la política de adaptación al cambio climático en la agricultura turca, mediante su visión del sector agrícola como una unidad homogénea, facilita el desplazamiento de los costes socio-ecológicos. Indudablemente, esta situación se origina en una excesiva simplificación de las desequilibradas relaciones de poder en el sector agrícola de trabajo intensivo, así como en un compromiso con el desarrollismo. Los resultados de los dos periodos de trabajo de campo en el sur de Turquía confirman que las intervenciones adaptativas en la agricultura turca se esfuerzan en producir sujetos adaptables y resilientes, que son considerados responsables de lidiar con sus propias vulnerabilidades. Además, los valores y las visiones del mundo de los grupos de interés implicados en las políticas de adaptación, descifrados mediante metodología Q, confirman esta prevalencia de la idea de *resiliencia como ajuste* versus *adaptación como transformación*. Argumento que un particular entendimiento de la adaptación como una intervención destinada a salvaguardar el “proyecto de desarrollo”, definido como un proyecto político y económico que prioriza los mercados y los extiende como un medio de crecimiento económico y de modernidad, recorre la esfera de la política de adaptación al cambio climático en Turquía. Los tres estudios empíricos, en este sentido, muestran la necesidad de repensar las relaciones entre adaptación y desarrollo mediante paradigmas alternativos, más radicales y transformadores, que la adaptación puede proveer si la condición humana ha de ser mejorada de forma equitativa.

Palabras claves: adaptación, vulnerabilidad, trabajadores temporeros en agricultura, biopolitica, desarollarismo, Turquía

Table of Contents

List of Figures

List of Tables

CHAPTER 1

Seasonal Agricultural Labour, Double Exposures and Adaptation in Turkey: An Introduction

"To be truly radical is to make hope possible rather than despair convincing"

Raymond Williams

1. Introduction

Since its inception as a key topic of concern, as Schlosberg and Collins (2014) remind us, adaptation has been —at least, rhetorically— framed in a way that coalesces environmental and climate justice, with social justice for the vulnerable segments of the global community. It is in this context that a shift is now taking place in environmental social sciences, which questions adaptation in terms of both its adjusting and transformative characteristics to ensure justice is indeed carried out. This dissertation examines adaptation occurring at the intersection of multiple stressors and explores its ramifications on human security, well-being and development. In doing so it examines state-led adaptive interventions in labour-intensive agriculture, a particularly vulnerable sector key to economy. With regards to theory, it draws from different strands of political ecology (benefitting from both structuralist and post-structuralist approaches) to establish a comprehensive understanding of the dynamic nature of vulnerabilities in relation to the adaptation-development nexus. In doing so, the thesis first explores multiple, interacting and overlapping vulnerabilities in different social groups at a local level. This first part of the thesis demonstrates the risk of ecological and economic cost-shifting as common practice in adaptation to climate change. Next, it critiques the state's mediation of vulnerability and its practice of relegating the cost of future adaptation to particular individuals and/or social groups, arguing that state-led adaptive interventions reflect a particular mind-set stemming from a certain constellation of worldviews and values. Finally, this thesis addresses policy-making at a national level, analyzing the way in which different conceptualizations of adaptation underlie promoted policies. At this final point, it portrays convergences and divergences in shared visions of adaptation policies as embedded in the broader environment-development nexus. In essence, this research is hoped to be of interest to epistemic communities interested in the broader, intricate and overarching debate on climate change adaptation and development writ-large.

A key notion that will be frequently referred to in this thesis is vulnerability. Vulnerability is a complex function of interacting biophysical and socio-economic drivers. As Ribot (2014) observes, renewed attention to climate hazards (referring to biophysical hazards) in the Anthropocene (the epoch shaped by human influences on geological, biological, and chemical attributes of the planet) seems to cloud our vision of the social causes of precariousness, which expose and sensitize people to hazards. Such a remedial vision often limits us by focusing on 'who the subject of vulnerability

is', rather than investigating 'why vulnerabilities arise'. It also focuses on 'which indicators are most suitable to track macro-trends' instead of explaining 'how vulnerabilities are constituted', eventually trying to produce quick fixes rather than remove root causes (ibid: 3). Under such circumstances, 'who gets to decide what kind of lives will be lived in times of climate and geomorphological change' is the defining question in the Anthropocene, as Dalby (2013) indicates. Two key issues that arise, then, are the issues of fairness and legitimacy. Adger et al. (2006) argue that a fair adaptation to climate change needs to address concerns such as recognition, participation, legitimate distribution, and use of power. Such an approach is inevitably political. Political ecology, with its appraisal of uneven distribution of benefits and burdens and its strong commitment to fairness, emerges as a particularly fitting approach to study adaptation and vulnerability in the context of multiple and interacting stressors. Moreover, it also contributes in building a critical perspective of green governance regimes, which at times are deployed as smokescreens to conceal inherent structural contradictions and power struggles on the field.

In his editorial essay on the state-of-the-art of social sciences vis-à-vis adaptation, Jon Barnett (2010) outlines the three main challenges of existing adaptive approaches. The first challenge is to clearly identify the end goals of adaptation by shining a spotlight on contested values among different groups in answering the following question: "For whom is the adaptation?" The second challenge, Barnett identifies (ibid.), is learning from existing and previous experiences of adaptation. This requires studying the successes and mistakes of past adaptive approaches to avoid replicating failed socio-environmental policies as well as maladaptation (Barnett and O'Neill, 2010). The final challenge is to understand whether and in what ways specific institutional arrangements help or hinder adaptation. Peet, Watts and Robbins (2010: 10), all key figures of political ecology, sum these points up clearly:

> "In [the] vast industry of work on adaptation to climate change, critical social science, and hard edged political economy is strikingly absent. The rough and tumble of actual struggles and the relations between households, communities and power, state and corporate agents is missing. Instead, on offer, is a shopping list of "conditions" for adaptive governance, including "policy will," "coordination of stakeholders," "science," "common goals" and "creativity" […] rather than the complex political, cultural and social dynamics at work – that is to say what political ecology has stood for."

This dissertation strives to further contribute to political ecology literature on the incipient topic of adaptation by scrutinizing the complicated relationship between adaptation, vulnerability and development, with a

specific focus on migrant seasonal labour-intensive agriculture. In doing so, this study advances the critique of state-led adaptation interventions and developmentalism(s) enmeshed in adaptation policies, demonstrated via a case study from Turkey. This case study, I argue, also helps us comprehend underlying mechanisms at work, an understanding that allows us to address —within the context of adaptation— the complex political, cultural and social dynamics of labour-intensive agriculture elsewhere. The UN country team report (UN Turkey, 2013: 82), which presents Turkey's development agenda for post-2015, starts with a bold claim that "the people need to be reminded that the problems of poverty and hunger are essentially environmental problems of the country." Nonetheless this dissertation contends that developmentalism (broadly defined as an unquestioned commitment to economic growth to tackle poverty) often impair a correct vision of deeply rooted structural vulnerabilities. Hence this thesis concludes with key messages in line with Ribot's (2014) observation on the need for research on the in/ability of vulnerable people to shape the political economy that shapes their vulnerabilities, a process he labels *emancipation*. Such emancipation, I argue, can only be generated in political spheres rather than post-political consensual frameworks, which do not permit agonistic disagreements over real alternative socio-ecological futures (Swyngedouw, 2011: 268).

2. Aims and Rationale

The overarching aim of this research is to analyse how state-led climate change adaptation interventions are designed and who benefits from them, through the lens of political ecology. This is particularly important in order to ensure that reflexive adaptation policy arrangements, which are efficient, effective, legitimate and have public buy-in, are in place. The objective, then, of this thesis is threefold. Focusing on the case of Turkey, it first 1) explores the contextual factors and the influence of power asymmetries that shape conditions for the double exposure of rural communities to multiple climatic and socioeconomic stressors; second, it 2) seeks to understand how and why particular state-led adaptive interventions maintain vulnerabilities and insecurities of migrant seasonal agricultural worker communities in the face of surmounting environmental and socioeconomic risks; and third, it 3) strives to reveal those values and discourses that are key in shaping adaptation priorities in labour-intensive agriculture. Eventually, through a synthesis of these results, the dissertation seeks to contribute to the debate concerning the nexus between climate change adaptation and development.

Market-oriented agriculture, particularly labour-intensive forms of agriculture, is comprised in large part by migrant and seasonal labour. As

Gertel and Sippel (2014) suggest, over-exploitation of natural resources, social repercussions, and food anxieties increasingly mark the limits of intensive agricultural production in zones such as the Mediterranean Basin. Under increasingly uncertain circumstances, insecure labour conditions are becoming foundational to industrial agricultural systems, which eventually lead to complex dependencies (ibid: 5). Furthermore, changing temporalities due to changing environmental conditions unfold complex dynamics in the agro-migration system (ibid: 9). The protagonists of this activity, migratory seasonal agricultural workers (hereafter *seasonal workers*), however, constitute a marginal social group that has been overlooked in political ecology, critical human geography, and development studies. Yet their labour is crucial for sustaining labour-intensive agricultural production globally while their livelihoods are under the direct and indirect impact of both environmental and socioeconomic changes. An ILO report on agricultural workers found out that these social groups often "remain invisible in terms of the goals, policies, programmes and activities to eliminate poverty [...] in promoting sustainable agriculture and rural development, world food security and sustainable development" (Hurst *et al.*, 2007: 89). This is a norm rather than an exception in almost all parts of the world. Similarly in a recent study on assessing the disaster risk preparedness of farmworkers in the U.S., Burke et al. (2012: 3116) concluded that migratory and seasonal farmworkers constitute a “transient, invisible population”.

Zetter and Morrissey (2014: 344) argue that while the role played by uneven structures of power is well established in vulnerability, political ecology, and environment-society literature, acknowledgement of its role in the environmental change-human mobility nexus is largely ignored in policy circles. In a similar vein, although there are a number of studies linking climate change to the vulnerabilities of seasonal workers (Vasquez-León, 2009; Tacoli, 2009), so far no studies explicitly link policy interventions designed to tackle vulnerability to climate change (specifically, adaptation and development policies) across different levels (local, regional, national), with the broader political ecology of migrant seasonal agricultural labour. As Pelling et al. (2012: 5) suggest, short-term and partial remedies often dominate the responses to climate change since they “best serve established value priorities”. This is not only true for those in powerful positions (because they would not want to lose their privileges) but also for the most vulnerable (since they seemingly cannot afford a radical change while immersed in their daily struggle). Hence, studying the double exposures of different social segments in labour-intensive agriculture (including but not limited to seasonal workers) under multiple stressors, and understanding how the state frames existing and emerging vulnerabilities (and acts upon them), could help

produce better and reflexive adaptive policy responses. It can also help us dissect the relation between adaptation and the political economy of labour-intensive agriculture. This requires an understanding of the ways in which adaptation policy processes are value-laden: whose vulnerabilities are visible and whose are latent, how the state responds to those vulnerabilities and why it responds the way it does, and finally, whose priorities/values predominate the adaptive responses?

3. Problem Statement and Research Questions

Problem statement: Labour-intensive agriculture constitutes a highly vulnerable sector in many parts of the world, not least for its double exposure to a multiplicity of shocks and stresses emanating from both biophysical and socioeconomic drivers. Given its increasingly important role in the global climate change debate, adaptation provides an opportunity to reduce risks and enhance well-being of the communities involved in labour-intensive agriculture. Yet, state-led adaptive interventions often fall short in addressing the differential vulnerabilities of key social groups within this sector, including an often ignored group: migrant seasonal agricultural workers. While adaptation policies are increasingly scrutinized on a global scale, there is far less information available on why vulnerabilities of these seasonal workers persist. Moreover, there is a knowledge gap as regards how flexible and securitized labour arrangements contribute to shape their vulnerabilities. This observation calls for a need to focus on both discursive and political economic dimensions of adaptation policies, in order to produce policy-relevant knowledge capable of delivering socially just and effective responses to challenges posed by double exposures.

One more reason that justifies the need for this study relates to the social and economic weight of seasonal agricultural workers. UNDP (2014: 73-74) reports that agricultural workers accounted for 40% of the world's economically active population in 2011. By 2025, they will be among those hardest hit by water scarcity, which is expected to affect more than 1.8 billion people. Nonetheless, scholarly work linking seasonal labour migration with climate change adaptation is rather scant. Thus, this study seeks to contribute to growing literature on seasonal workers, whose lives are marked by '*flexicurity*' (merging of flexibility and security) to provide *'flexiprofity'* (merging of flexibility and profitability; Gertel and Sippel, 2014: 11) for labour-intensive agriculture in a changing climate.

Research questions:

- How do power relations shape asymmetrical double exposure to multiple socioeconomic and climatic stressors?
- Why do state policies aimed at reducing vulnerability fail to reduce/remove vulnerabilities for all social groups?
- How do different discourses shape climate change adaptation policy within the context of labour-intensive agriculture?

4. Literature Review

In this dissertation, I engage with three main bodies of literature: vulnerability (Wisner et al., 2004; Adger, 2006; Robbins, 2004) and the double exposure framework (Leichenko and O'Brien, 2008); biopolitics and seasonal migration with a focus on state-led adaptation policies (Lemke, 2011; Oels, 2013) and, eventually, value-based adaptation to climate change (O'Brien and Wolf, 2010) with a focus on developmentalism (Pieterse, 1991; Ayers and Dodman, 2010) and the Turkish state (Adaman and Arsel, 2005; Harris, 2012). Despite existence of a multiplicity of definitions outlined below, for the sake of simplicity, in this dissertation I opt for Wisner et al.'s (2004: 11) definition of vulnerability as an attribute of a person or group and their situation "that influences their capacity to anticipate, cope with, resist and recover from the impact of a natural hazard".

4.1. From Impacts-focused Vulnerabilities to Transformational Adaptation

4.1.1. Vulnerability: A Contested Concept

As Methmann and Oels (2014: 227) succinctly state, "one of the few consensus in the literature on vulnerability is that there are only few consensuses" as to what this term refers to, how it is constituted, and who its referent is. Although vulnerability as understood today dates back to the 1980's, in the works of Sen (1981) and Blaikie (1985), the concept was only streamlined in the early 90's, following the convergence of critical development studies, disaster risk reduction/natural hazards tradition, political economy, and political ecology literature with an ever-increasing interest in global environmental and economic challenges and their consequences. While even in the 1980's dozens of authors used vulnerability and related terms such as resilience, marginality, susceptibility, adaptability, fragility, and risk (Liverman 1989 as cited in Wisner, 1993), and although the term

appeared in documents discussing natural hazards, from the Executive Office of the President of the United States of America, as early as 1972 (Villagrán de León, 2006: 11), consensus on the definition of vulnerability still remains elusive, due to the diversity of its uses. For example, as Villagrán de León (2006: 8) notes, definitions of vulnerability "can span from the notion of the predisposition of a system to be affected or damaged by an external event at a certain instant of time, to the notion as a residue of potential damages which cannot be targeted through the implementation of typical measures". As an agenda-setting milestone, IPCC's (2014: 3) recent 5th Assessment Report (AR5) Working Group II technical summary report defines vulnerability as "the propensity or predisposition to be adversely affected." This implies an understanding of vulnerability as encompassing "a variety of concepts including sensitivity or susceptibility, to harm and lack of capacity to cope and adapt" (ibid: 3). Yet most often, disagreement over the exact components of vulnerability overshadows the urgency of policy-relevant praxis (philosophy of the action) in vulnerability research.

Different conceptions of vulnerability are the fruit of diverse research traditions' use of the term over the past 30 years. Yet despite differences in conceptualization, vulnerability in its most basic form is commonly understood as either a process or an outcome. For example, Cutter et al. (2003) identify —in vulnerability literature— a discernible departure from exposure, social condition, and resilience perspectives. Eakin and Luers (2006), on the other hand, identify three research traditions that have shaped the vulnerability literature. These are the risk-hazard, political economy/ecology, and ecological resilience traditions. In this study, Eakin and Luers (ibid.) emphasize that what unites these three broad lineages is their attention to equity and social justice concerns. Examples of different approaches and categorizations of vulnerability are numerous, but common to many of them is a general understanding that vulnerability is a function of sensitivity, exposure to risk/hazard, and adaptive/coping capacity (McCarthy et al., 2001). Nonetheless, such diverse understandings of vulnerability in different research traditions, which form a "Babylonian confusion" (Jannsen and Ostrom, 2006), lately seem to lead to an increased focus and policy-emphasis on the concept of resilience.

McLaughlin and Dietz (2008) argue that if vulnerability is an inherently contextual phenomenon, then we need to theorize the dynamics of adaptation of social units at various scales —including biophysical and social aspects—, as both provide the context in which vulnerability arises. Various scales used in vulnerability research are decisive to the methodology used to measure and/or observe it. Those scales might start from a group of individuals with a

common characteristic, in some studies, and reach a global level in others. Birkmann and Wisner (2006) argue that this variance of scale in vulnerability research also leads to use diverse sets of methods, including quantitative indicators and qualitative criteria, as well as broader assessment approaches including "numbers, models, proxies, narratives, maps, chronologies and profiles." One-size-fits-all approaches targeting outcome-level vulnerability (which understands vulnerability as a residual phenomenon) often downplay vulnerable populations, if not being outright counterproductive (Tschakert, 2007). Hence Birkmann and Wisner (2006) maintain that while there is no one-size-fits-all approach to vulnerability, some key questions can help us identify the tools to use in defining and assessing the vulnerability of a population. According to these authors, the key questions are as follows:

a) Who and what is vulnerable?

b) Vulnerable to what?

c) Who wants to know and why?

d) What circumstances and context shape the daily life of the affected?

O'Brien and Wolf (2010) suggest that outcome-level vulnerability research[1] focuses on reducing direct and indirect impacts of climate change once these impacts are manifested. A context-level approach to vulnerability ('second-generation' adaptation research), however, takes "underlying social, economic, political, institutional, technological, cultural and environmental conditions" (O'Brien and Wolf, 2010: 236) as its point of departure. Hence, if our unit of analysis is a social group rather than a geographic setting (in the political ecology approach to vulnerability, this is usually a marginalized social group), then the focus is supposed to be on the social aspects of vulnerability. This encompasses Wisner et al.'s (2004) conception that vulnerability is a concept that applies *only to people* but not to physical infrastructure (susceptible, unsafe), economies (fragile), or regions of the earth (hazard-prone). Thus, gender, age, health status, disability, ethnicity or race or nationality, caste or religion, migration, and socioeconomic status are at the focus of attention in determining vulnerability. Consequently, in answering questions (a) and (d) by Birkmann and Wisner (2006) above, these characteristics are of decisive value. It is important to frame vulnerability and

[1] This offshoot of adaptation research is also often referred to as 'the first-generation', see also Burton et al. (2002)

make it explicit in the research as our framing of the problem reflects our political/social/cultural preferences towards the solution we pursue. As O'Brien et al. (2007: 76) suggest, "[f]ramings influence the questions that are asked and structure the kind of knowledge that is produced. They determine what is included on the agenda and what is silenced. Framings emerge from discourses that are embedded in institutions, actors and academic disciplines."

Different framings of vulnerability might undervalue the responses of communities in the spotlight. According to some critiques in natural hazards literature, vulnerability is associated with Western colonial discourse, which denigrates large portions of the world as dangerous, and large groups of people as incapable victims despite appearing "to construct a less culturally specific geography of disaster based on the relative entitlement and empowerment of people exposed to hazard" (Bankoff, 2001: 29). According to this vision, while vulnerability "has proven useful as a means of assessing disasters within their socioeconomic, political and environmental context that was previously lacking," and "despite the undoubted conceptual and methodological advances it represents on previous thinking, its utility and practical application is still hampered by a one-dimensional construction of process that transforms a hazard into a disaster" (ibid: 30). This vision strongly argues for moving beyond the study of the vulnerability of a society to that of adaptability of a culture. This position is also reflected in the recent "social turn for resilience" in climate change adaptation literature (Brown, 2013).

Use of resilience in global environmental change research has emerged through the work of ecologists working on predations and non-linear ecologies in the late 60's. Buzz Holling's (1973) work took resilience research a step further by laying the foundation of socio-ecological systems (SES) research (see Berkes et al., 2003). Holling (1973) suggested that multi-stable conditions of a system are possible and plausible for enhanced resilience against variations of perturbations. Until the emergence of this understanding of multiple-stable equilibriums, ecology was dominated by the understanding of a singular-stable condition for a system from which perturbations caused a drift. If the system were resilient enough, this drift would eventually cease, reverting the system to its initial equilibrium. Holling's breakthrough also led to the proliferation of resilience in recent years as a key means of managing complex economic, social, political, and environmental problems. Chandler (2014: 3) argues that this has led to a shift from interpreting problems as amenable to top-down, state-based interventions to viewing them as matters of bottom-up installation of resilience. However, such conception of resilience

is related to adaptive capacity, so it is less than the flip side of vulnerability (Gallopin, 2006). According to this vision, vulnerability does not appear to be the opposite of resilience as it can only be countered by structural changes in a system (hence requiring a transformation) rather than shifts between multiple stable states. Nonetheless, within the context of global environmental change, many scholars define resilience of a system as the capacity to renew, reorganize, and withstand shocks while maintaining its function, structure, and identity (Walker et al., 2004). This position is challenged by recent critiques, which suggest that

> "Resilience demands our disavowal of any belief in the possibility to secure ourselves and accept that life is a permanent process of continual adaptation to dangers said to be outside our control. The resilient subject is a subject which must permanently struggle to accommodate itself to the world, and not a subject which can conceive of changing the world, its structure and conditions of possibility." (Evans and Reid, 2013: 83)

In a similar vein, other critics like Fieldman (2011) argue that vulnerability reduction is not possible under the current neoliberal configuration of the political economy, as adaptation mainstreamed into development is itself maladaptive, undermining its very own basis. Resilience discourse in this sense not only reinforces the existing structure of power asymmetries but also serves to provide functional persistence to an existing system, which may prove to be maladaptive (Pelling, 2012: 54). Maladaptation refers to cases where adaptive policy decisions fail to meet their objectives. Barnett and O'Neill (2010: 211) define it as "actions taken ostensibly to avoid or reduce vulnerability to climate change that impacts adversely on, or increases the vulnerability of other systems, sectors or social groups." Such maladaptive behaviour, moreover, often arise due to uneven power relations and shaky fault lines of the political economy on which adaptation policy is built. A key theoretical approach to study such maladaptive practices is political ecology, with its powerful eye on uneven power relations, which is elaborated in the following sub-section.

4.1.2. Political Ecology's Contribution to the Study of Vulnerability

Turner et al. (2003: 8077) argues that response opportunities for decision makers are of significant relevance in analyzing vulnerability within a critical human–environment system. Building on this, Forsyth (2008) states that this criticality can be divided into geocentric (roughly corresponding to biophysical vulnerabilities) or anthropocentric (roughly corresponding to social vulnerabilities) dimensions. Political ecology, with its focus on the "*all [the]*

struggle hidden in the quiet vista" (Robbins, 2004: xvi), follows an anthropocentric approach. This approach is summarized in the words of Bryant and Bailey:

> "Political ecologists accept the idea that costs and benefits associated with environmental change are for the most part distributed among actors unequally, which inevitably reinforces or reduces social and economic inequalities, which [in turn] holds political implications in terms of the altered power of actors in relation to other actors" (Bryant and Bailey, 1997:28-29)

Therefore it is no surprise that one of the main focuses of political ecology research is the unequal distribution of vulnerabilities and their construction both in the material world and in the discursive sphere. In studying these, political ecology benefits both from Marxist political economy and poststructural approaches to explain social marginalization and environmental degradation (Forsyth, 2008). This entails following a critical path to reconstruct environmental explanations by making connections between social and physical spheres through discourses and to prioritize the needs of vulnerable people. "Under a critical political ecology", says Forsyth (2002: 195), "research might seek to highlight how different accounts of environmental risk and vulnerability may reflect the interests of different political actors and social groups." Robbins (2004), on the other hand, understands political ecology as a discipline, which not only tries to expose flaws in dominant approaches to the environment as favored by powerful players, but also intending to demonstrate the undesirable impacts of policies and market conditions from the perspective of the vulnerable.

Richard Peet and Michael Watts's (2004) definition of political ecology, as a means of understanding the complex interconnectivity of nature and society through "*careful analysis of social forms of access and control over resources – with all their implications for environmental health and sustainable livelihood*s," connects where and how people live, work, and interact with broader structural conditions. Drawing on Martinez-Alier and Guha (1997), these authors further explain how that political ecology is somehow inspired by "peasants and agrarian societies in the throes of complex forms of capitalist transition." Appearing for the first time in the 1970's, political ecology is generally accepted as having emerged from structuralist approaches of neo-Marxist research in geography. Investigating the inequalities in access and control over resources as well as emergent social movements to oppose those inequalities, this branch of political ecology literature reflects one vision of understanding power relations in societies, as one of structure. Yet as Paulson et al. (2005) point out, there is another branch of political ecology literature, which does not only deal with 'formal politics' but has also extended

its investigation into power relations in everyday interactions as well. This branch of literature follows poststructuralist understandings of discourses as tools of power in shaping subjects, providing their very conditions of existence and trajectories of desire (ibid.). Multifaceted poststructuralist approaches in political ecology, as Robbins (2004) suggests, provide us with robust methodological tools to understand the knowledge-power-practice nexus as regards to environmental change. Robbins (2004: 66) explains this approach as follows:

> "By doing what Foucault referred to as archaeology – an effort to excavate the hidden history of meanings of concepts and things, along with their social and political histories – the hidden history of "truths" is demonstrated, making them appear less inevitable and showing their place in maintaining the power of [some] individuals or groups [over the others]".

This latter body of political ecology literature studies the formation of subjectivities to understand how particular discourses are created, transformed and used to justify existing conditions as well as what type of opposing discourses are generated to resist subordinating discourses. For example, Zografos and Howard (2010: 3410) observe that such "conceptualizations of power and politics are used to improve research on environmental change and conflict and to develop better ways of addressing practical problems of resource degradation and social marginalization." In a similar way, conceptualization of power and politics can help us understand how different vulnerabilities are created, transformed, and used in the face of multiple exposures to global stressors: respectively, neoliberal globalization and global environmental change manifested as climate change.

While human geography has long investigated adaptive behaviour in changing and hostile environments, more recent is the rise in the number of studies focusing on climate change adaptation in political ecology literature. For example, Symons (2014), in dispelling the myth of adaptation policy-making as a rational and disinterested process using a case from Kenya, argues that adaptation is predominantly understood as a matter of reducing the perceived risks to economic growth. With a focus on Egypt, Malm (2013) also demonstrates that protection of the Nile Delta coastline through adaptive measures is indeed skewed towards recuperating sunk capital and boasting investments, rather than removing the vulnerability of poor people. Likewise, Snorek et al. (2014) observed that adaptation relates directly to development processes, which are instigated and implemented based on existing (and often uneven) social, political, and institutional forces, by building on a case from Niger's pastoralists.

If we accept that, as Taylor (2013: 325) postulates, equitable and sustainable climate change adaptation depends on transforming power relations, rather than addressing the symptoms leading to enhanced vulnerability, we need to take into account the challenges ahead of such a transformational social change. This provides yet another argument for an increased focus on the political ecology of adaptation in the environmental social science literature. Eventually, Ireland and McKinnon (2013: 158) provide a rationale for this recent surge in literature as due to instrumentalization of adaptation by powerful groups "to reconstitute a growth driven development agenda without stopping to consider whether [adaptive] approaches are appropriate in addressing either the challenges of climate change or the needs and aspirations of local communities." So in order to overcome this, a political ecology of adaptation needs to "radically challenge current models of development and adaptation and present workable alternatives" (Brown, 2011: 29). This also entails paying attention to material and immaterial dimensions of adaptive responses of contemporary states, which Ioris (2014) argues to be "shrouded in mystification, elitism and manipulation of public affairs for the benefit of those previously in control of the state".

In his attempt to classify adaptive responses from a political ecology point of view, Mark Pelling (2012) identifies three main strands as resilience, transition, and transformation (see **Table 1.1**). While the distinguishing feature of adaptation-as-resilience is seen as the continuation of the existing system, and functions to withstand shocks and stressors, adaptation-as-transition favours incremental changes to adjust to changes while not disturbing the existing cultural, political, and economic regimes. While nuances remain important, these two approaches (resilience and transition/incremental change) can be grouped under the title '*adaptation-as-adjustment*.' The Special report on Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation (SREX), produced by IPCC (2012: 556, emphasis added), suggests that adaptation encompasses "the process of *adjustment* to actual or expected climate and its effects, in order to moderate harm or exploit beneficial opportunities." In this sense, adaptation-as-adjustment becomes a scenario in which what remains relatively constant is greater than what is deliberately changed (Rickards and Howden, 2012: 242). As such, it instigates a self-directed change for modifying internal characters of a system to better suit the external conditions, be it climatic or socioeconomic changes.

Adaptation-as-transformation, however, "is concerned with the deeper and less easily visible root causes of vulnerability" (Pelling, 2012: 59). This

latter approach maintains that contingencies, be it through environmental or socioeconomic disturbances, make latent or ignored vulnerabilities visible. Hence, this approach challenges the assumptions of the previous two on the grounds that they accommodate change rather than contesting it and creating alternatives (O'Brien, 2012). It inevitably questions the current systems and paradigms by paying attention to power, politics, and value-laden interests. It is with this understanding that I now turn to the double exposure framework so as to analytically deconstruct the conditions that give rise to multiple and overlapping vulnerabilities in different components of socio-ecological systems.

	Resilience	***Transition***	***Transformation***
Goal	Functional persistence in a changing environment.	Realize full systems potential through the exercising of rights within established regime structures.	Reconfigure the structures of development.
Scope	Change in technology, management practice and organization.	Change in practices of governance, as rights are not exercised.	Reform in overarching political economy, cultural norms or scientific paradigm.
Policy Focus	Resilient building practice; use of new seed varieties to make businesses /livelihoods resilient.	Implementation of legal responsibilities by private and public sector actors and exercise rights by citizens.	New political discourses
Dominant analytical perspective	Socio-ecological systems, ecology, engineering.	Governance and regime analysis.	Discourse, ethics and political economy.

Table 1.1 Three main approaches to adaptation and their attributes (reproduced from Pelling, 2012: 54)

4.2. Double Exposures

Leichenko and O'Brien (2008) affirm that until recently, processes of globalization and global environmental changes were rarely studied together in a comprehensive manner, and so existing research and policy discussions on each topic were highly compartmentalized. Rapprochement of these big processes is seen as an important step toward analysing the complexity of societies and adaptation responses. O'Brien and Leichenko (2000) therefore suggest that regions, sectors, ecosystems, or social groups that will be

confronted both by the impact of climate change and by the consequences of globalization can be identified as being under *double exposure*. The starting point for the double exposure framework (Leichenko and O'Brien, 2008) is the acknowledgement of winners and losers (O'Brien and Leichenko, 2003), as well as the dynamic changes and feedbacks set in motion in light of multiple stressors. Put otherwise, "climate change has been portrayed as an environmental problem with somewhat separable human dimensions, suggesting in turn adaptation actions that favour environmental and technical rather than social and institutional changes" (Barnett, 2010: 47). Accordingly, in order to overcome this one-sided insight and provide a comprehensive and overarching explanation of the nature of multiple and overlapping vulnerabilities, the double exposure framework gives us a theoretical toolbox for analysing the interaction between economic and environmental changes. This framework pays particular attention to the ways in which two interacting global processes (with respect to outcome, feedbacks and context) spread risk and vulnerability temporally and spatially (Leichenko et al., 2010). In this regard, the double exposure framework furnishes a theoretical backdrop, which permits elaboration of interactions and feedbacks between these processes in various scales. As such, this framework contributes to our understanding of "global processes occurring both simultaneously and sequentially, creating positive and negative outcomes for individuals, households, communities and social groups" (Leichenko and O'Brien, 2008: 33).

This analytical framework has five building blocks (Leichenko and O'Brien, 2008). These components can be listed as (i) processes of global change, (ii) exposure unit, (iii) contextual environment, (iv) responses and (v) outcomes. According to the formulation of this framework, outcomes both depend on exposure to each global process and responses by the exposure unit. Exposure unit here refers to individuals, households, social groups, administrative units, communities, ecosystems, sectors or species. Leichenko and O'Brien (2008) argue that changing contextual conditions can impact exposure and responses to future global change processes, thus resulting in new patterns of vulnerability and new challenges for social and ecological resilience. These new patterns emerge through three distinct pathways of interaction as outcome, context and feedback double exposures. A schematic diagram of this framework can be found in **Figure 1.1.**

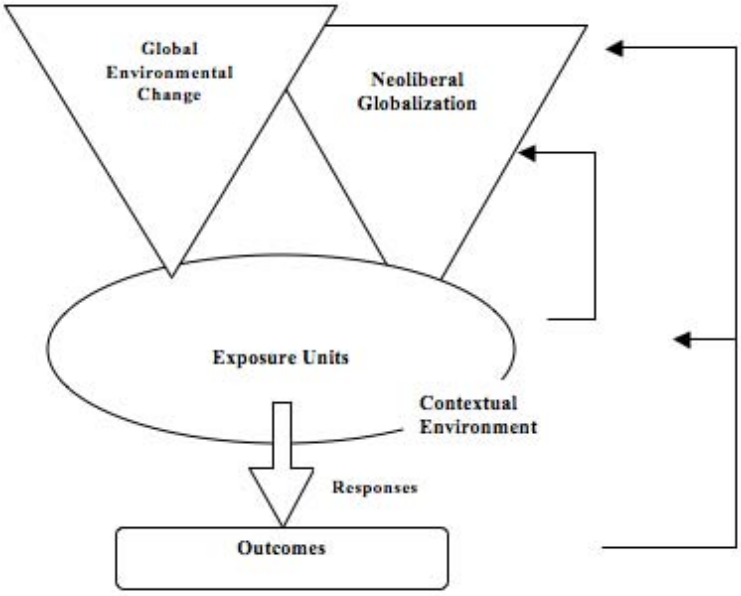

Figure 1.1 Schematic diagram of double exposure framework (Reproduced from Leichenko and O'Brien, 2008: 39, arrows refer to feedbacks)

Agriculture has been the field that has received most attention within the double exposure framework so far, as it is a vulnerable sector key to global environmental changes and structural impacts of neoliberal globalization. An example of this literature is the work of O'Brien et al. (2004) on adaptive capacity mapping in different regions of India by extrapolating socioeconomic and climatic data. Here the authors overlapped adaptive capacity data with that of accessibility to markets, implementation of agricultural reform, and indicators on crop prices using GIS in order to understand which regions are most impacted by double exposures. Eriksen and Silva (2009) have likewise completed an empirical study in Mozambique, which demonstrates that liberalization of agriculture led to a weakening of coping strategies for farmers in the face of new climatic conditions. However, they also conclude that larger enterprises emerged much better-off in making use of the opportunities available, in comparison to smaller scale farmers.

What is rather recent in double exposure literature, nevertheless, is a critical appraisal of subjectivities regarding vulnerabilities, and how different values and power relations constitute vulnerabilities arising at the intersection of globalization and global environmental changes. O'Brien and Wolf (2010: 237) argue that "[a] values-based assessment of vulnerability [...] focuses on the dynamic changes in value priorities that are associated with both impacts and responses to climate change." Such an approach "recognizes and makes

explicit that there are subjective, qualitative dimensions to climate change that are of importance to individuals and cultures" (ibid: 235). Important insight on how state-led adaptation initiatives are crafted, implemented, and sustained can be gained through empirical cases, which can further be enriched by analyses of subjectivities, values, and power relations. This might be done through demonstrating how specific people in specific places experience double exposures.

4.3. Biopolitics

The second body of literature I engage with in my dissertation is biopolitics. Biopolitics is defined as the operation of governance that seeks ways of "making" lives instead of "taking lives," and as a shift from sovereign power over territory to power that is able to make/shape lives (Foucault, 2003). Therefore, unlike sovereign rule, in which territory was the priority, its focus becomes population. Biopolitical state interventions, in this sense, can be regarded as a "reorganization or restructuring of government techniques, shifting the regulatory competence of the state onto 'responsible' and 'rational' individuals" (Lemke, 2001: 202). In doing so, biopolitics relies "on political economy as the principle form of knowledge" (Lemke, 2010: 430). Therefore, given the knowledge provided by political economy, biopolitics views the state as an 'assemblage', making lives by analysing processes of life and governing individuals and populations by "practices of correction, exclusion, normalization, disciplining, therapeutics and optimization" (ibid.). Assemblage, in this formulation, refers to emergence, multiplicity, and indeterminacy, and connects to a wide redefinition of the socio-spatial interventions that control populations (Anderson and McFarlane, 2011: 124).

As explained by Foucault, the development and spread of techniques for disciplining the body, and optimizing its capacities in the modern era, was caused by the emergence of the notion of 'population' as an object of knowledge and control, which in turn made life itself subject to monitoring, governing, and administering (Ferguson, 1990). Building on Foucault's work, Reid (2006: 136) contends that disciplinary techniques provide peace for the modern regimes that they govern, but meanwhile, biopolitical techniques are utilized to wage wars inter-socially." This is what normalization of society is all about: i) keeping individuals/populations under surveillance, training them and in case of insubordination punishing them, ii) making populations *live* by protecting them from threats and iii) taking control of their lives by managing and regulating populations (Coleman and Grove, 2009). Through biopolitical interventions, the state's authority over populations is consolidated as individuals are saved from themselves and their surroundings. Biopolitics

therefore outstrips *letting live* and consciously *makes lives*. In the second empirical study of this dissertation, my main aim is to articulate how some top-down, state-led adaptation interventions constitute biopolitical interventions, aiming at making adaptable lives from within, while claiming to improve the human condition and reduce vulnerabilities.

Foucault (2000: 416) asserts that since "population is nothing more than what the state takes care of —for its own sake, of course— the state is entitled to slaughter it, if necessary. So the reverse of biopolitics is thanatopolitics." So when state policies are concerned with the life (*bios*) and death (*thanatos*) of populations, and more specifically with their health, their behaviour, their reproduction, and their labour (among other things), the state enters the field of biopolitics. Dalby (2013: 184) suggests that biopolitics has an important role in the Anthropocene, as it is only now that we have come to understand who gets to decide what kind of lives will be lived. This is inherently a key political and economic question. It is mainly so because our policy options today are decisive in what kind of biosphere will exist for present and future generations of humanity. To this, Baldwin (2013: 60) adds that biopolitical analyses of such decisions are "extremely important [since they] trace how transformations in the knowledge of life coincide with transformations in political rule."

In his critique of humanitarianism in the context of biopolitics, Reid (2010: 396) argues that "maladapted populations are said to threaten not only themselves but the biopolitical foundations of global governance since their suffering produces economic dislocation as well as potentially political violence." Therefore, in order for modern states to achieve their adaptive aims, biopolitical state interventions must create adaptable individuals who threaten neither the existing economic nor political order. This is especially the case in responses to global environmental changes, which are speculated to create massive displacement and social unrest (for critical reviews of this literature see Barnett and Adger, 2007; Laczko and Aghazarm, 2009; Warner et al., 2009; Gemenne, 2011; for a conceptual framework on environmental migration see Black et al., 2011).

The main notion from biopolitics literature I employ in subsequent chapters of this thesis, though, is *circulation*. Circulation is key to understanding how populations are rendered adaptable by particular policies. Through biopolitical interventions, subjects are conditioned to be productive by disciplining individual bodies and establishing regulatory controls at the level of the population. Foucault (2007: 18) understands security as an act of "*organizing circulation, eliminating its dangers, making a division between*

good and bad circulation and maximizing good circulation by eliminating the bad." As Aradau and Blanke (2010) also observe, capitalism would not have been possible without the insertion and circulation of disciplined, able bodies within the mechanism of production. Vagabonds, in Foucault's analysis, were therefore dangerous for the capitalist system since the uncontrollability of their mobility posed a risk for the capital accumulation project and the production processes. Therefore, in order to maintain capital accumulation, 'good circulations' were to be established and maintained at the expense of 'bad circulations' (ibid.). Dillon and Neal (2008:14) explain this clearly in what follows: "biologically, as well as economically, speaking, life is a process of circulation and exchange. It is also a transformative process. Through circulation, life changes." Similarly, when adaptation policies are framed from a biopolitical perspective, I maintain that they contribute to the encapsulation and governance of the circulation of moving populations, which serve particular political and economic ends.

4.4. Value-based Adaptation to Climate Change and Developmentalism

As Collins and Ison (2009: 351) suggest, "revealing the framings and assumptions relating to adaptation offers the potential for developing more effective policy and praxis." These framings and assumptions often differ from value preferences on questions such as what vulnerability is, what constitutes adaptation, and who will take responsibility, held by policy stakeholders. Therefore, increasing calls are being made to go "beyond commonplace discussions of distribution and procedure and instead see how including more diverse values and priorities of affected people might influence what is seen as urgent" (Forsyth, 2014: 232). Thus, the final body of literature I engage with here addresses values in the adaptation-development nexus. This allows me to move a step further to explore the subjectivities that lie behind vulnerability reduction approaches favoured by the state and other stakeholders. What is explicitly missing at the junction of vulnerability, adaptation, and development literature is a critical appraisal of subjectivities and shared viewpoints regarding whose vulnerabilities are prioritized and which value constellations dominate the policy landscape. Therefore, the engagement of this dissertation with the value-based approach to adaptation and vulnerability reduction aims to fill this gap with an eye on producing policy-relevant knowledge through its case study in Turkey.

When we focus on the interaction between poverty, vulnerability, and human insecurity, issues of power, politics, and conflicting interests inevitably arise. However, "so do questions of culture, values, beliefs and worldviews"

(O'Brien et al., 2010: 215). It is through this understanding that O'Brien and Wolf (2010: 237) argue, "[a] values-based assessment of vulnerability [...] focuses on the dynamic changes in value priorities that are associated with both impacts and responses to climate change." Such an approach "recognizes and makes explicit that there are subjective, qualitative dimensions to climate change that are of importance to individuals and cultures" (ibid: 235). It leads us to unearth the values that underlie particular state policies. Even though the previously mentioned outcome and context level vulnerability studies provide us with key insight into the need for early-warning, disaster risk recovery and socioeconomic conditions leading to vulnerability, they fail to account for adaptation pathways that are deemed as "most desirable, effective and legitimate by individuals and communities" (O'Brien and Wolf, 2010: 237). Addressing these concerns entails handling vulnerability assessments so as to focus "on the dynamic changes in value priorities that are associated with both impacts and responses to climate change." (ibid.) To this end, a values-based approach to adaptation encompasses political implications since it "points to the role of power hierarchies and interests in prioritizing the values of some over the others" (ibid: 239).

As far as dominant values are concerned, it is telling that adaptation is increasingly presented as a (hitherto mainstream) development challenge. While the advent of sustainable development has largely failed, adaptation policy with its far-reaching justice consequences (not only within but also across generations, classes, ethnicities, races, and genders) reminds us of the pivotal importance of seizing the opportunity to question 'the desirable' futures. This also demands questioning values present in existing development policies and prevalent developmentalist ideals. Pieterse (1991: 1-6) defines developmentalism as a "universalist, ahistorical, teleological and ethnocentric" discourse of power, which maintains that social change occurs according to a pre-established pattern, logic, and direction. Policies, which are aligned with 'the development project,' eventually form a "politically-orchestrated initiative […], which legitimizes and extends markets as the vehicle of national economic growth and modernity" (McMichael, 2009: 141). As Ireland (2012) concludes in his analysis of adaptation discourses of experts in the field, climate change adaptation today provides a space for both the re-enactment of problematic development practices, and the imagination of hopeful alternatives. Nonetheless, a thorough analysis and critique of predominant values in the adaptation-development nexus remains incomplete. Such an analysis will not only serve to bring the "how" of development back into the debate but also reinforce the question of "why"

particular adaptive interventions that reduce vulnerability of certain social groups are preferred over other interventions.

5. Research Gaps

Three main sets of research gaps emerge from the scholarly literatures I have revisited above. First, although agricultural communities both in developing and developed country contexts are well studied in adaptation literature, there is a lack of studies on the widely ignored case of migrant seasonal agricultural workers and their vulnerabilities. Moreover, although double exposure literature has paid attention to power asymmetries since the beginning, it needs further contributions regarding how local power asymmetries contribute to differential vulnerabilities for otherwise homogeneously handled rural populations. Chapter Two contributes to this lacuna. The second contribution of this dissertation is to incipient literature on biopolitics and climate change (Grove, 2014). This growing body of literature has so far not engaged with the concept of circulation as far as moving populations and their vulnerabilities are concerned, something this dissertation addresses, specifically in Chapter Three. The third and final gap this dissertation attends to is the lack of empirical inquiry into value preferences of adaptation policy stakeholders. The final chapter, along these lines, contributes to value-based adaptation literature with an empirical study from Turkey in connection with values in the adaptation-development continuum. There is little doubt that Turkey's social and spatial/geographical differences both underwrite and undermine the ambivalence of its developmentalisms (Harris, 2008). As such, Arsel (2012: 79) explains the advent of "*developmentalism-alla-turca*" under neoliberal rule as follows:

> "While Turkey has never really had a movement or credible intellectual agenda that resisted the developmentalism that defined the modern republic, it has had an active political arena in which at least the "how" of development was hotly contested among parties and movements of different ideological stripes. With the hegemony of neo-liberalism in place and undisputed, however, this "how" component of the debate has also largely withered away."

It is within this political context that the last empirical chapter (Chapter Four) of this thesis tries to clarify the underlying values and discourses of adaptation policies, and how they act on vulnerable populations and power asymmetries.

6. Research Strategy

This dissertation follows a three-pronged research strategy to reveal the relationship between vulnerability and power asymmetries inherent in

labour-intensive agriculture, and to depict the values embedded in state-led adaptive responses to these vulnerabilities. Accordingly, in an attempt to explore power asymmetries and explain how, and why, adaptation policy in Turkey is crafted the way it is, it comprises three distinct empirical studies (presented in Chapter Two, Three, and Four) situated within a common research strategy described below. As Ford et al. (2010) observe, vulnerability assessments typically identify and characterize who and what are sensitive to climatic risks, flesh out why they are so, demonstrate existing adaptive capacities, and eventually identify potential adaptation pathways. These approaches differ from an impact-focused approach to adaptation research insofar as they are not necessarily efficiency-driven (Eakin et al., 2009). Vulnerability research typically deploys research strategies that will not hide but reveal the different values intrinsic to adaptation responses. Such research gives particular attention to ignored, veiled, or underestimated values, since within the domain of things and places that people value, loss of a particular type cannot be compensated by gain in another dimension as in utilitarian framings (Adger et al., 2008: 15).

A key consideration in the research design has been given to scale as an important parameter, both in political ecology and adaptation/vulnerability research. There is a tempting fallacy when it comes to the issue of scale in adaptation studies, as Wisner (1993) acknowledges, particularly as regards to the implementation and evaluation of national vulnerability reduction policies on a local scale. Furthermore, the problem with orthodox scientific approaches to vulnerability is that "they overlook how risks may be interpreted more locally than at the regional level; how some people may lessen the impacts of environmental changes through the adoption of strategies such as environmental adaptations; or how social vulnerability to environmental change may be created through economic and political processes." (Forsyth, 2003: 196) So while it may appear there is a discrepancy between the different levels of adaptation policy/practice presented here, this has been a conscious decision insofar as this research design is concerned. As Adger et al. (2005) reiterate, it is possible to envision effective and successful adaptation both independent of the scale and in the scalar context. However, the co-existence of different spatial and societal scales in adaptation calls for different evaluation criteria at these different levels, in which efficiency, equity, and legitimacy are the key determinants (ibid: 85). In line with this argument, the research design of this thesis focuses on three levels: local level (focusing on power asymmetries at village-scale in the first study), regional level (focusing on the efficacy of adaptive interventions and social policy at a sub-basin scale in the second study), and national level (focusing on the multiple discourses of national adaptation policy stakeholders in the third study). In this

sense, while the first empirical chapter focuses on material conditions and uneven power, the second and the third empirical chapters shed light on the discursive conditions that give rise to vulnerabilities and/or shape adaptation policies. Therefore methodological components of this research design are selected accordingly. The following table (**Table 1.2.)** presents the three research questions of the thesis and outlines the corresponding study focuses, methods deployed, and means of data collection for each study.

Research Question	Study Focus	Method	Data Collection	Output
How do power relations shape asymmetrical double exposure to multiple socio-economic and climatic stressors?	Village-level analysis of social vulnerabilities and 'double exposures' to climate change and neoliberal globalization in labour-intensive watermelon agriculture in Kapı Village, Karataş district, Adana (Turkey)	In-depth case study	20 semi-structured interviews, 2 focus groups, analysis of official documents and secondary data	Chapter Two Article submitted to *Climate & Development* (Under review)
Why do state policies aimed at reducing vulnerability fail to reduce/remove vulnerabilities for all social groups?	Critical discourse analysis of two key national policies aimed at reducing the vulnerability of seasonal workers; field research on the implementation and discourses of these policies at a district level.	In-depth case study Critical content analysis of key policies	30 semi-structured interviews, 2-months of direct observation, analysis of 2 key national policy documents and secondary data	Chapter Three Article submitted to Global Environmental Change (Revised and resubmitted by 30th September 2014)
How do different values and discourses shape climate change adaptation policy in Turkey within the context of labour-intensive agriculture?	Exploration of discourses and value priorities of policy stakeholders who participated in the making of Turkey's climate change adaptation strategy	Q-methodology	Primary data collection via Q-sorts and subsequent interviews with 29 adaptation policy stakeholders	Chapter Four Article submitted to *Ecological Economics* (Under review)

Table 1.2 Research strategy and corresponding methods addressing research questions

6.1. Methods

6.1.1. Case study research

Ford et al. (2010) observe that vulnerability assessments that include people (the exposure unit) in identifying which aspects of climate are relevant, what the characteristics of exposure and sensitivity are, and document the capacity to respond, are central features of contemporary human dimensions of climate change research. Such research often follows case study and analogue methodologies. While case studies strive to provide an in-depth explanation to the questions “how” and “why”, based on intensive and detailed examination of a real life example, spatial and temporal analogue methodologies try to produce knowledge using a particular subject/base to explain another subject by drawing temporal and spatial parallels.

The double exposure framework, in a similar vein, calls for using methods that combine vulnerability analysis with case studies. These case studies, focusing on the particular ways that economic changes influence agricultural production or other climate-relevant sectors, provide a better understanding of stressors and population vulnerabilities (O’Brien and Leichenko, 2002). Turner et al. (2003) argue that place-based studies of multiple stressors not only illustrate how contextual factors produce differential outcomes but also show how contexts both affect, and are affected by changes across scales. Moreover, Grothmann and Patt (2005) suggest that, in contrast to climate change mitigation, which is often dealt with at national and international levels, adaptation requires addressing problems at the local level and making use of capacities available at that level. Thus, it is not surprising that the vast majority of case studies in adaptation literature focus on local or regional levels.

Case study methods involve systematically gathering enough information about a particular person, social setting, event, group, or phenomenon to permit the researcher to effectively understand how it operates or functions. Case study is not actually a data-gathering technique, but a methodological approach that incorporates a number of data-gathering measures in triangulating the empirical data (Berg, 2001: 4). In brief, case study is a research strategy that allows researchers to retain a holistic and meaningful interpretation of characteristics of real-life events (Yin, 2003).

Yin (2003) suggests that case studies are more relevant when “how” and “why” questions are asked of a contemporary set of events over which the investigator has no control. Case studies can be descriptive, explorative, or explanatory. In all circumstances, case studies possess a significant

advantage with respect to explaining presumed causal links of a phenomenon, to describe an intervention and the real-life context in which it occurs, to explore situations in which the intervention under scrutiny has no single set of outcomes over other methods (ibid). Thus, this approach to research also fits in with the rationale of this study to trace the effects of state-led interventions on communities in focus as well as to explore the root power asymmetries. It is essential for all case studies to define their unit of analysis, e.g. whether the case study focuses on a particular geographical area, or a particular group of people. Moreover, the quality of a case study is dependent on the robustness of its validity and ability to make analytical generalizations (taking the subject in focus), unlike statistical generalizations (taking the sample in focus) in survey research.

Case studies, as Yin (2003: 10) argues, are generalizable to theoretical propositions and not to populations or universes, as in the case of experiments. In this sense, they serve to construct validity and generalize theories rather than enumerating frequencies, as in statistical generalization. Furthermore, as Flyvberg (2006) suggests, formal generalization is only one of the ways through which people produce knowledge in a given field or society. Therefore, it does not mean that knowledge that cannot be formally generalized will not be able to contribute to “collective process of knowledge accumulation” (ibid: 227). Nonetheless, constructing validity in case studies should be given utmost importance. **Table 1.3** offers suggestions for achieving validity in various stages of case study research. Yin (2003) indicates four tests to validate the case study results in order to provide them with analytical generalization power. These tests are complementary to each other and each of them refers to a different stage in the research process. They provide tactics to establish validity, to check the validity within the produced knowledge and with the existing knowledge, as well as provide a solid base for data collection. These tactics are laid out in **Table 1.3**.

Tests	Case Study Tactic	Phase of research in which tactic occurs
Construct validity	Use multiple sources of evidence	Data Collection
	Establish chain of evidence	Data Collection
	Have key informants review the draft	Composition
Internal validity	Do pattern matching	Data Analysis
	Do explanation building	
	Address rival explanations	
	Use logic models	
External validity	Use theory in single models	Research design
	Use replication in multiple models	
Reliability	Use case study protocol	Data collection
	Develop case study database	

Table 1.3 Tactics to achieve validity (reproduced from Yin, 2003: 34)

Flyvberg (2006) reminds us that the use of case study can be an effective remedy against a stagnated learning process, which might lead to "ritual academic blind alleys" —being at a great distance from the object of study and lacking feedback. According to him, the advantage of the case study approach is that it can "close in" on real-life situations and test views directly in relation to phenomena as they unfold. As per limitations, Ford et al. (2010) point out three principal concerns of case studies related to vulnerability analysis: limited capability to form generalizations; prioritizing local level in assessing vulnerability to the neglect of broader determinants; and, requiring significant time and funding on behalf of researchers. Yin (2003) answers the first criticism by claiming that case studies provide space for analytic generalization rather than statistical generalization, which works to explain mechanisms of a particular phenomenon rather than proving the same case in larger populations. Thus, case studies help us expand and generalize theories by providing insight that can be re-tested, compared, and contrasted

with other studies. The second concern finds its answer in the double exposure framework, as this framework not only focuses on the local realities of change, but also pays attention to broader factors (i.e. those related to global environmental change and globalization). The third concern, raised by Ford et al. (2010), remains a challenge for many researchers, even those employing other research approaches (e.g. ethnography, surveys, visual methods etc.).

Flyvberg (2006)'s response to critiques of the case study method is more bold and reflexive, with its roots in philosophical thought on knowledge and learning. He argues that it would be incorrect to conclude that one cannot generalize from a single case unless we talk specifically about a particular case, what it talks about and how it is chosen, with reference to what Karl Popper calls "falsification", which in social science forms part of critical reflexivity (ibid: 227). He goes on to explain that:

> "It is correct that summarizing case studies is often difficult, especially as concerns case process. It is less correct as regards case outcomes. The problems in summarizing case studies, however, are due more often to the properties of the reality studied than to the case study as a research method. Often it is not desirable to summarize and generalize case studies. Good studies should be read as narratives in their entirety." (Flyvberg, 2006: 241)

Departing from these methodological grounds, this dissertation produces knowledge on the role of power asymmetries under double exposures, the role of discursive arrangements in understanding the functioning of state-led interventions as well as the values inherent to adaptation policy-making. In the first empirical chapter, I provide exploratory studies to understand the functioning of power asymmetries as cost-shifting mechanisms. The second empirical chapter presents an explanatory study of how particular discursive (i.e. the depiction of seasonal workers as self-adaptable, resilience subjects) and material (i.e. the capital accumulation project in labour-intensive agriculture) arrangements lead to particular interventions and outcomes in adaptation policy. This chapter ends with some bottom-line general thoughts on how similar interventions can be manifested in different (sub-national, national and international) scales. After exploring the apparent and hidden assumptions undergirding adaptation policy in Turkey, the third chapter also provides the reader with an explanation of why a certain line of thought has dominated the adaptation imaginary in Turkey. As such, all three studies extend beyond the single case in order to provide analytical insight on the nested relationships between vulnerability, adaptation, and development policy.

6.1.2. Q-methodology

The second method I have employed in this dissertation is Q methodology. This mixed method (demonstrating both qualitative and quantitative aspects) is increasingly utilized in social sciences to uncover different discourses ton a particular topic. Discourses refer to specialist languages, which enable social power by describing the world in a particular way and make it possible to claim a particular vision of truth. Dryzek (1997) defines discourse as follows:

> "A discourse is a shared way of apprehending the world. Embedded in language, it enables those who subscribe to it to interpret bits of information and put them together into coherent studies or accounts. Each discourse rests on assumptions, judgments, and contentions that provide the basic terms for analysis, debates, agreements and disagreements, in the environmental area no less than elsewhere." (Dryzek, 1997:8)

According to The Oxford Companion to Philosophy, subjectivity is defined as "pertaining to the subject and his or her particular perspective, feelings, beliefs and desires" (Solomon, 2005). By studying and generalizing the "characteristics of subjectivity" (Robbins, 2005: 215) on a particular topic, Q methodology offers useful insight into diverging and converging discourses. However, instead of exploring individuals' traits and linking them with their responses, this method shifts the focus of inquiry on subjectivity itself. Unlike other discourse analysis methods, results in this methodology are not atomized into isolated opinions but categorized into coherent groups ('ideal discourses'), and interpreted by the researcher in line with existing empirical and theoretical material. Thus, Q methodology helps obtain a novel and interpretative study of structured subjectivities on a given topic.

To begin with, Q-methodology extracts a set of statements from interviews with potential participants of the study, primary and secondary literature on the topic, social networks and archival material in order to establish a 'concourse', a pool of normative statements on a given topic. Webler et al. (2009) argue that conducting preliminary interviews with potential participants in establishing the concourse (along with secondary and primary data originating from other sources) helps avert the threat of systematically eliminating some aspects of the topic of concern, and allows the researcher to ensure (almost) all relevant aspects of the topic are covered. This is guaranteed through selecting a P-set (participants) that reflects the widest spectrum of diversity of ideas/reflections/views on the topic of inquiry. The resulting concourse then is shortened to a number of stand-alone representative statements, which is called the Q-sample, with or without

a pre-determined criteria matrix. Addams (2000: 20-21) points out that Q methodologists often use systematic procedures to reduce the concourse to the Q-set. This often takes the shape of categorizing statements into logical design categories as a criteria matrix, and choosing a sample from each category. As McKeown and Thomas (1988: 28-29) suggest, this process can be deductive (based on a priori hypothetical or theoretical considerations), or inductive (in line with emergent patterns among the statements). Nonetheless, whether structured or unstructured, Q methodology strives to cover the widest range of opinions/preferences on the topic of inquiry as possible.

Following the establishment of a Q-set, participants (P-set) are invited to sort the statements of the Q-sample over a grid, which goes from 'mostly disagree' to 'mostly agree' (see Figure 1.2). The listing and sorting of statements by each participant of the study creates individual Q-sorts, which are the individual preferences among the Q-set posited by the participants on the topic of inquiry. Once all the Q-sorts are collected, the data is analysed by using factor analysis (using PCQ software in my case) to extract converging and diverging preferences and create shared narratives. The researcher may opt for using different techniques (i.e. Varimax rotation, pure loadings with each respondent loading only to one statement, etc.) to produce different factors, and after a careful analysis of the data (also taking into consideration coverage for the highest variance of the opinions as possible), the researcher settles for a solution. Finally, the researcher interprets emerging results in context to establish structured shared narratives about emerging discourses/visions/ideas on the topic of research.

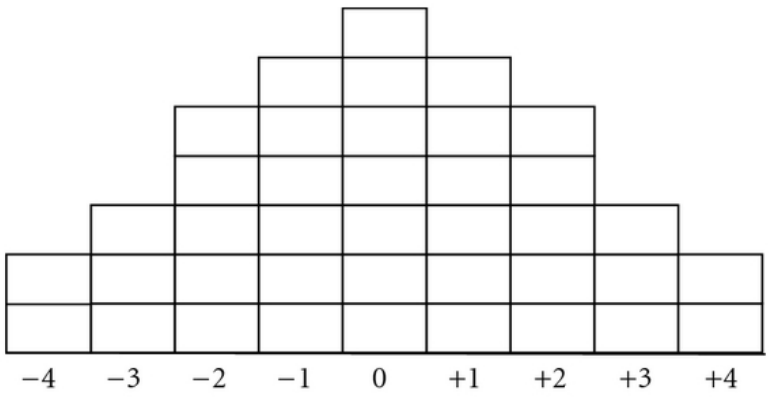

Figure 1.2 A sample Q-grid for 39 statements. -4 indicates 'mostly disagree,' +4 indicates 'mostly agree.' Participants position the statements in this table.

The novelty of Q methodology lies in the fact that it matches patterns of knowledge and discourses across people by putting Q statements as the subject. Eventually, this method looks into patterns and makes connections between subjectivities as they approach particular patterns. This methodology is a powerful research tool that enables discovery of a variety of discourses on how individuals understand their behaviour, and how they understand the social worlds in which they live. Q methodology does this by utilizing a set of subjective qualitative arguments of stakeholders in a schematic algorithm that reveals the diverging and converging opinions on a particular set of issues. Hajer (1997) argues that the contribution of the social constructivist approach, which uses discourses to analyse phenomena, is not only that it opens up "black boxes" but that it also gives insight for developing reflexive institutional arrangements. Robbins and Krueger (2000: 637) argue that the iterative reflexivity, which Q-methodology provides the researcher with, can both serve for rigorous research and exploring human subjects, without erasing them in the process. Outcomes of such processes can also aid in policy-making and in creating reflexive institutional arrangements as they expose "the variability, contradiction and variety of representation and articulation" (Zografos, 2007: 50) of different discourses. This will also be in line with the call of Pieterse (1998: 369) to give development a reflexive programmatic meaning, which will entail broad social debates and platforms on the goals of development, and means to achieve them, since "development is more anchored in people's subjectivity rather than in overarching [existing] structures and institutions". The social constructivist approach, in this sense, doesn't only work to define problems but also find socially acceptable solutions (ibid.)

Q-methodology is increasingly applied in environmental social science to identify discourses in contemporary environmental decision-making (Ward, 2013; Lansing, 2013; Curry et al., 2013) as well as to use the knowledge produced in establishing reflexive policy arrangements. For instance, Davies et al. (2005) suggest benefitting from Q-methodology's strength by sampling the maximum diversity of visions in environmental decision-making, instead of maximum diversity of people/institutions. This, the authors argue, can be achieved by purposively selecting participants from attitudinal clusters identified, in order to produce reflexive policy output. This means that "[a] focus on discourses and their role in representing value positions would enable the deliberate inclusion of those who are not traditionally selected through random sampling or purposive sampling by means of demographic or associational criteria" (ibid: 611). Ecocentric discourses or the voice of future generations, both of which are often absent from environmental decision-making due to lack of 'institutions' representing them, can thereby be included in policy deliberations. Similarly, Doody et al. (2009) used Q-methodology to

combine public opinion with technical expertise and create a list of technically robust and socially relevant sustainable development indicators, otherwise seen as 'window dressing' to the public. These authors conclude that Q-methodology provides an effective tool for public participation insofar as the selection of progress indicators that are relevant to public is concerned.

As far as this research is concerned, the validity of the empirical studies is constructed through using multiple sources of evidence, and triangulating the existing information. According to Yin (2003: 98), the most important advantage of using multiple sources of evidence is the emergence of converging lines of inquiry. While more information on the methodological details of each individual empirical study can be found in subsequent chapters, it is informative at this point to explain how such validity was constructed in the process by using the triangulation shown **Table 1.3**. For example in the case of Chapter Three focusing on biopolitical interventions of the state on seasonal workers, the point of departure was research question number 3: "Why do the state policies aimed at reducing vulnerability fail to reduce/remove vulnerabilities for all social groups?" This research question was motivated by the findings of the first empirical chapter, which suggested that despite certain adaptation interventions the most marginalized segments of society did not experience a reduction of their vulnerabilities. First, an extensive literature review was carried out on biopolitics and climate change adaptation literature, which led to formulating the theoretical underpinnings of the study. Once a key concept (i.e. circulation) was selected from this literature due to its explanatory power, external validity of the theory was constructed through reviewing a number of similar studies, using biopolitics and vulnerability reduction. Following this, a case study protocol with semi-structured interview questions was developed (reliability) and implemented on a number of initial key respondents (construct validity). Questions were modified verbally to make them explicit after this first round of interviews. Later on, using the biopolitics theory as a 'theoretical sieve', I constructed internal validity by pattern matching through use of multiple sources of evidence such as interviews, formal and informal documents, official reports, personal accounts of key informants, and grey literature.

6.2. Site Selection

The desktop research and subsequent fieldwork for this dissertation was carried out in two sites. The first of these, which is the main geographical focus of the first two empirical chapters (Chapter Two and Chapter Three), is the Lower Seyhan Basin. The Karataş district of Adana province located at Lower Seyhan Basin was chosen as the focus of investigation for reasons

including, but not limited to, the following: i) it is located in the eastern Mediterranean region that has been identified as extremely vulnerable to climate change by the IPCC; ii) it is one of the most productive agricultural regions in Turkey and Europe; iii) it has a long history of seasonal labour migration and considerable importance for the labour-intensive agricultural production. Considering the official figures of 400,000 people moving domestically for agricultural labour each year (Ministerial estimate; MLSS, 2012), Gümüş's (2005) estimates that suggest 1/4th of all seasonal workers in Turkey (approx. 100.000 people) arrive in this region for seasonal work each year are quite significant. Predominance of labour-intensive agriculture, continuing patterns of seasonal labour migration, and anticipated biophysical risks of the climatic conditions in the lower Seyhan basin make it a perfect fit for investigation. Moreover, this region was the geographical focus of the first community-based adaptation project[2] that UNDP Turkey ran between 2008-2011 in coordination with the Ministry of Environment and Urbanization.

The fieldwork for the third empirical chapter (Chapter Four), which focuses on the value preferences and priorities of national adaptation policy stakeholders, took place in Ankara and Adana, in the offices of the participants. Respondents in this study were recruited by purposeful sampling (Palys, 2008) to reflect the widest range of possible opinions among policy stakeholders, in accordance with their potential for advancing our understanding of converging and diverging discourses. They were selected among the participants of national consultations (undertaken in 11 cities across the country) held during the preparation of the National Climate Change Adaptation Plan (MOEU, 2011), with a particular emphasis on representatives who worked on crafting agricultural adaptation policy. Participants included experts, national and regional policy-makers, and other stakeholders, specifically: 2 from the Ministry of Forestry and Hydraulic Works, 4 from the Ministry of Environment and Urban Planning, 5 from the Ministry of Food, Agriculture and Livestock, 1 from the Ministry of Development, 3 from State Hydraulic Works, 8 from NGOs and think-tanks, 4 from international organizations, and 2 academics.

6.3. Research Limitations

Inevitably there were some limitations in this research. First and foremost, being a young, male, middle-class researcher limited my ability to

[2] MDG-F 1680: Enhancing Turkey's Capacity to Adapt to Climate Change, http://www.undp.org.tr/Gozlem2.aspx?WebSayfaNo=1392

access seasonal worker women in most occasions during my fieldwork in Karataş. Lack of a gender dimension of vulnerability and adaptive responses is therefore, unfortunately, a shortcoming of this research. The absence of detailed data and analysis on gender relations might have led to relative ignorance on power asymmetries gender-wise, as far as this research is concerned. The second limitation was posed by the lack of existing data and/or willingness of authorities to share data on seasonal workers. Since migrant seasonal agricultural labour is a politically-loaded card game in Turkey, not only because it is interwoven with ethnic conflict, but also because it cuts across lines of class and gender, it is hard to find and produce information on the subject matter. Although having lived through hardships in accessing information, my presence in multiple sites across the lower Seyhan basin as well as my participation in three biannual meetings of MIGA [3] (Seasonal Labour Migration Monitoring Network) helped me overcome such hurdles. Finally, the third limitation was the unwillingness and hesitance of some policy stakeholders to fully complete Q-sorts and comment on their preferences. My personal observation is that this was mostly due to their desire to avoid political statements on adaptation and development policies in general. It is –unfortunately— not an uncommon practice to see public officials who openly criticize and/or challenge the government's position (even on technical matters) to be relegated or intimidated rapidly. While this unwillingness might have conditioned their responses, I believe ensuring anonymity throughout the process has helped overcome such handicaps to a great extent. Overall, while these limitations (respectively: gender and ethnicity differences, and institutional suspicion) have shaped the research process from a number of angles, I believe that the triangulation of existing data gives me a clear picture of the problems at hand. In the end, these limitations do not condition the results enough to distort the knowledge production process.

[3] *Mevsimlik İşçi Göçü İzleme Ağı* in Turkish. An informal network of academics, social workers and activists working on seasonal agricultural labour migration in Turkey. I took part in three meetings respectively in April 2011 in Şanlıurfa, June 2011 in İstanbul and March 2013 in İstanbul.

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CHAPTER 2

Uneven vulnerabilities and power asymmetries in labour-intensive agriculture in Turkey

"There's really no such thing as the 'voiceless'.
There are only the deliberately silenced, or the preferably unheard."

Arundhati Roy

Abstract

Similar to many developing country contexts, climatic risks and structural economic transformations increase the vulnerability of Turkey's agricultural sector and those whose livelihoods depend on it. In this study, we employ the double exposure framework and combine it with political ecology in order to reveal the significance of local power asymmetries in shaping multiple and overlapping vulnerabilities. Focusing on seasonal labour-intensive agriculture in southern Turkey, we show how cross-scale power asymmetries are key determinants of exposure to multiple stressors and illustrate three pathways of double exposure. Global markets and state-led adaptive interventions shape asymmetrical power relations, which allow certain social groups to actively shift the costs and risks of exposure to other groups in weaker positions. Our case study reveals how climatic contingencies and market fluctuations increase the vulnerability of watermelon producers, who in turn shift the social costs to migrant seasonal agricultural workers. Unpacking the internal unevenness and distributional struggles within double-exposed sectors can reveal policies, which in the name of reducing the vulnerability of a sector (e.g. agriculture) as a whole, end up increasing the vulnerability of the most vulnerable segments within that sector.

Keywords: adaptation, vulnerability, cost shifting, seasonal workers, climate change, Turkey.

1. Introduction

The politics of agriculture and climate change are likely to remain high on the global agenda in the decades to come. The recently released IPCC 5th Assessment Report (IPCC, 2014) anticipates high risks in global agriculture due to the impacts of climate change. Those risks manifest themselves as concerns for future water availability and supply, food security, agricultural incomes, shifts in production zones of food and non-food crops, all of which become discernible at local and regional scales. Located at the Mediterranean basin, which is highly vulnerable to climate change, Turkey's agricultural sector is also threatened by the impacts of climate change. This is particularly important since the share of gross value-added contribution of agriculture to the Turkish economy was 9% in 2012 with 15 billion USD worth of exports (ISPAT, 2014). Moreover Turkey ranks 7th in terms of total agricultural production (OECD, 2011) and has 25.5% of its labour force in the agricultural sector (TURKSTAT, 2011). It is within this context that the multiple and overlapping interactions of global economic and environmental changes are posing threats to the Turkish agriculture and those who live off it (Yano et al., 2007; Aydın, 2010; Keyder and Yenal, 2011).

In order to overcome the 'adaptation paradox', which Ayers (2011) defines as dealing with the fact that climate risks are global source-wise but experienced locally, it is important to develop coherent explanations of how global risks and changes are locally experienced and how responses to them in turn shape and be shaped by global processes. One of the most comprehensive approaches for such integrated analysis can be found in O'Brien and Leichenko's (2000) double exposure framework. This framework suggests that regions, sectors, ecosystems or social groups, which are confronting mutually reinforcing and interacting pressures from both global environmental change and neoliberal globalization, are subject to double exposure (hereafter DE). The DE framework helps us to analyse how "global processes occurring both simultaneously and sequentially [create] positive and negative outcomes for individuals, households, communities and social groups" (Leichenko and O'Brien, 2008: 33). However the questions of how the complex interactions of "neoliberal rules and institutions produce or exacerbate vulnerability" (Fieldman, 2011: 160) as well as how the power asymmetries operate in particular cases of DE (Taylor, 2013) still remain as incomplete tasks.

In an effort to explore the importance of local power asymmetries as determinants of multiple and overlapping vulnerabilities, here we present a case on labour-intensive agriculture. Hence through this study, we aim at

unravelling the role of power asymmetries in creating and maintaining vulnerable conditions. We employed an in-depth case study method to bring forth social power relations, which are crucial for understanding "causality in local vulnerability and adaptive potential" (Birkenholtz, 2012: 296). Moreover our approach to local constellations of power is rooted in the political ecology tradition with a particular focus on a relatively ignored social group: migrant seasonal agricultural workers. We argue that powerful groups actively and knowingly shift the costs and risks of ecological and economic uncertainty to less powerful groups in order to avoid economic and/or political losses. State-led adaptation policies often facilitates this cost and risk-shifting through their mono-dimensional perception of the agricultural sector as a homogeneous unit and an oversimplification of the forces that structure the vulnerability of the sector and the social groups within it.

The next section presents the DE framework, which informs the analytical approach of this case study. Section 3 then introduces the reader to the case, a small watermelon producing community in southern Turkey, and outlines the research methods used for the collection of empirical data. Section 4, shows the outcomes of double exposure upon the most vulnerable and political-economically marginalized community in the area, migrant seasonal agricultural workers (hereafter *seasonal workers*) and explains how the adaptive responses of landowners increase vulnerabilities and shift risks and costs to seasonal workers. Section 5 discusses the policy implications of this analysis and Section 6 concludes.

2. Double exposures and political ecology of vulnerability

Despite its consolidation as a crosscutting concept for the study of the human dimensions of global environmental change, until recently vulnerability has been studied separately from other stressors, such as those propagated by neoliberal globalization (O'Brien and Leichenko, 2000). Nonetheless handling these two global scale processes of change together is a first step for avoiding, at least conceptually, the compartmentalization that characterizes adaptation policymaking (Leichenko and O'Brien, 2008: 5). In this regard, the DE framework (ibid.) provides us with a theoretical frame to explain how two major global processes, neoliberal globalization and global environmental change simultaneously impact communities, sectors or regions. In doing so, it also accounts for the feedbacks arising from adaptive responses as well as paying attention to the ways in which these global processes spread risk and vulnerability over space and time (O'Brien and Leichenko, 2000; Leichenko and O'Brien, 2008).

Analytically, the DE framework is constituted of five main components: (a) processes of global change, (b) exposure unit, (c) contextual environment, (d) responses and finally (e) outcomes (Leichenko and O'Brien, 2008: 39). While all five components are subject to change simultaneously, alterations in contextual conditions can impact exposure and responses to future global change processes, hence resulting in new patterns of vulnerability and new challenges for socio-ecological systems. Responses, on the other hand, can change in accordance to the political and economic priorities and shape outcomes accordingly. Probably the most enticing element in this framework is its explicit focus on feedbacks arising from different configurations of its components. O'Brien and Leichenko (ibid.) call these configurations as "double exposure pathways". There are three main pathways of interaction.

The first pathway is outcome double exposure, referring to discrete events or gradual changes from which the exposure units (i.e. an agrarian community) are affected as a result of the interaction between major processes of global change. An example is the loss of livelihood due to the combined effects of a drought and the removal of subsidies and trade protections for the crop a certain community lives from. In their analysis of the DE in New Zealand's sheep and dairy industry, Burton and Peoples (2014) draw a picture of overlapping conditions of consequent droughts and neoliberalization of the sector via gradual removal of subsidies and tightening of drought assistance. The authors explain that many farmers were indeed indebted, had to minimize costs and also set to seek off-farm work as a result of the overlapping between consequent periods of drought and the neoliberal restructuring of the sector. According to Leichenko and O'Brien (2008: 45), this pathway raises a key equity-related question: "Who is most likely to experience negative outcomes related to both processes?"

The second pathway in DE framework is context-related. Emerging conditions associated with global changes may change the contexts (i.e. existing socio-ecological environments) in which livelihoods are embedded (Leichenko and O'Brien, 2008: 47). Contextual changes affect the adaptive responses of people and/or weaken the traditional coping mechanisms thereby exacerbating vulnerability. For example, Milman and Arsano (in press) shed light on a state-led adaptation policy in Ethiopia, which aimed at settling formerly dispersed communities into larger and fixed villages with 3-4 ha of land assigned to each family. This policy was supported by an agricultural development-oriented industrialization scheme, which promoted a shift toward cultivating market-oriented crops with an aim to mobilize "underutilized and unproductive rural labour" (ibid: 6). Nonetheless, by sedentarizing and restricting the mobility of dispersed populations, these

schemes increased drought exposure and placed a bet on the global commodity prices produced by these communities. Hence the scheme limited existing livelihood options (i.e. seasonal migration) by changing contextual conditions.

The final DE pathway is via feedbacks. This pathway acknowledges that responses to one or both of the global changes (environmental or socio-economic) may return to the initial point in the system as a game changer. Such feedbacks might initiate from outcomes, the exposure unit itself or the contextual environment. Consider for example, the shift experienced by large wineries and small producers of Okanagan Valley, Canada. Belliveau et al. (2006) show that following signing of the North American Free Trade Agreement (NAFTA), market conditions drove producers towards a higher quality product which requires further capital investment. Hence small producers are encouraged to get in the agro-tourism sector to make up for the losses they may have due to competition with larger enterprises. Nonetheless, deteriorating climatic conditions with increasingly uncertain weather patterns also impede tourism and once the relevant investments are made, “there are few options to cope with reductions in tourism” (ibid: 371). Adaptation to socio-economic change produces feedbacks, which further create complexity due to increasing climatic uncertainties. The findings reveal the differential vulnerabilities between large and small landholding farmers, which are not only shaped by changing climatic conditions but also by access to new resources and technologies.

The DE framework identifies unequal power relations as key drivers that give rise to uneven vulnerabilities. However it somewhat requires further tools to decipher the underlying mechanisms of the three different pathways. At this point, political ecology provides us with a toolbox that is fit to purpose to deliver a thorough questioning of uneven power relations and “all [the] struggle hidden in the quiet vista” (Robbins, 2004: xvi). Power in political ecology, as Peet et al. (2011: 31) observe, “is most crudely and commonly understood as the capacity of a polity or state to control the actions of people in its jurisdiction”. But it also refers to the “concrete power which every individual holds, and whose partial or total cession enables political power or sovereignty to be established” (Foucault, 1980: 88). Such power operates in a capillary manner where it “reaches into the very grain of individuals, touches their bodies and inserts itself into their actions and attitudes, their discourses, learning processes and everyday lives” (ibid: 39). This capillary operation eventually shapes the everyday interactions between different social groups and their surroundings. A political ecology of vulnerability, in this sense, attempts to ‘denaturalize’ the socio-environmental conditions and

vulnerabilities between given social groups by making the power-laden topics of contestation visible (Robbins, 2004: 12). It unearths power constellations producing socially uneven landscapes with unequal distribution of the socio-ecological costs and benefits (Otero et al., 2011:1299). In doing so, this tradition does not only critically analyse the seemingly 'apolitical' problems but also strives to explore the alternatives.

As Gertel and Sippel (2014: 4) observe, labour-intensive modes of agriculture often rely on exploitation of seasonal (and frequently migrant) workers despite somewhat provisioning income resources and livelihoods at the same time. Yet pressing challenges posed by climatic and socio-economic contingencies give rise to new insecurities and dependencies for the seasonal agricultural labour force, which "are inscribed in [the] globalizing techno-liberal agri-food complex" (ibid: 4). Despite this fact, the seasonal labour dimension of market-driven agriculture still remains understudied as far as climate change is concerned. It is precisely this gap that this study aims to fill with an eye on power asymmetries manifested as environmental cost shifting.

3. Case study and methods

Here we focus on a very local scale, the case of Kapı village in Karataş district of Adana, forming part of the lower Seyhan river basin in southern Turkey **(Figure 2.1)**. Seyhan River has the second biggest drainage basin area in the Eastern Mediterranean after Nile, with an area of approximately 25,000 km^2. The lower flat area of the basin (where Kapı is located) is characterized by irrigated agriculture, cultivating maize, wheat, fruits and other cash crops (Watanabe, 2007). As Birkenholtz (2012: 301) maintain, empirical generalizability remains as a key challenge for intensive case study research on vulnerability. We chose Kapı precisely because it makes for a typical case for analysing and analytically generalizing responses to DE, given its high reliance on a single economic activity (agriculture) and the expected severe implications of climate change.

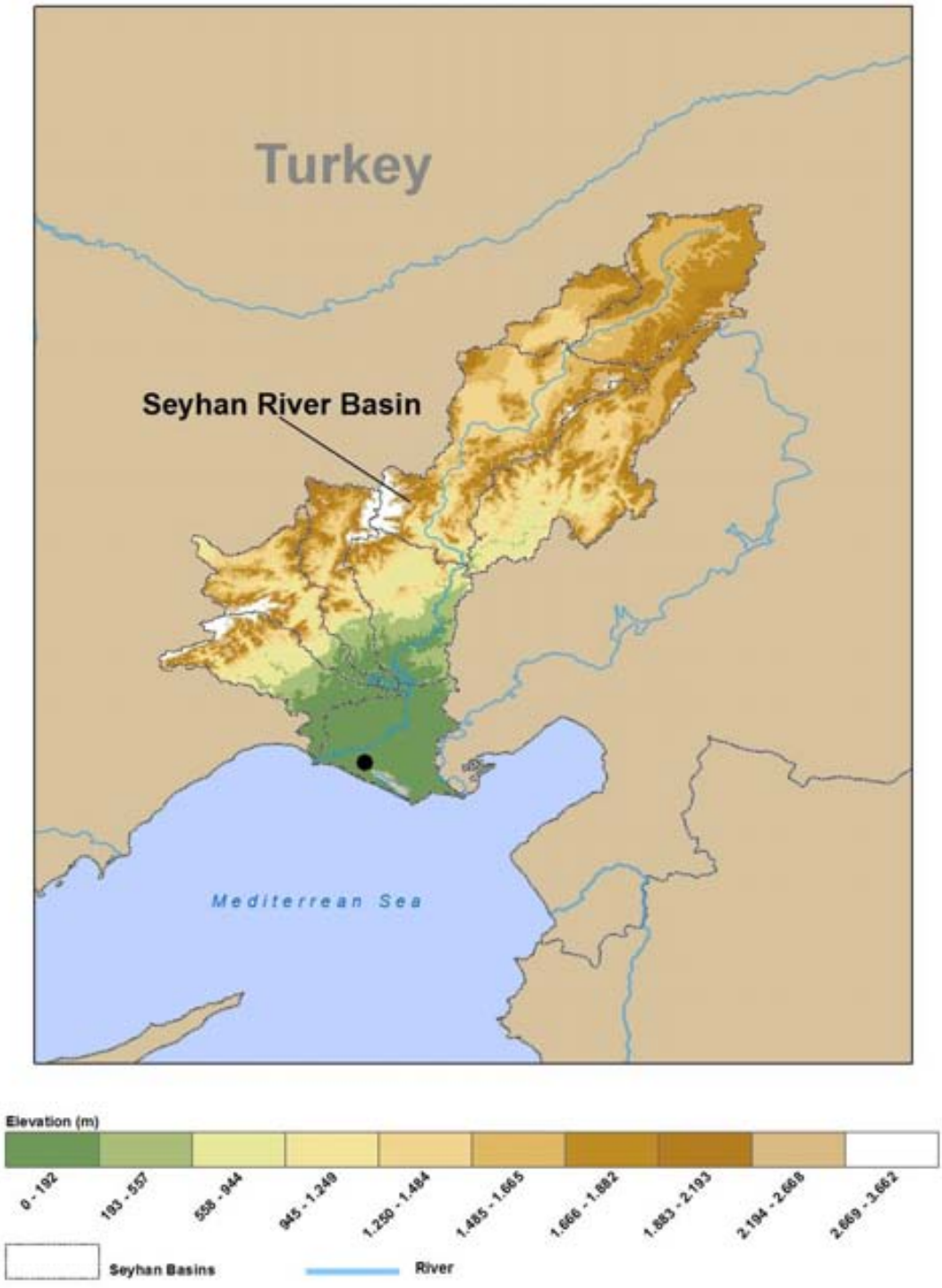

Figure 2.1 Map of Seyhan River Basin (Kapı is shown with a black dot, map courtesy of Hannes Etter)

The conditions in Kapı are typically representative of the production conditions in the rest of the region. Kapı grows early grown vegetables and

fruits and thereby has a high seasonal agricultural labour demand since its native labour force does not meet the demand. Karataş, the administrative district where Kapı belongs, has the highest share of agricultural production and the highest rural agricultural employment (DPT, 2004; UNDP Turkey, 2009) in the lower Seyhan basin. Moreover this district scores 21st out of 872 in the whole of Turkey in terms of gross agricultural production (DPT, 2004). Watermelon, which is the focus of this study, is one of the principal products of the district and a key product for Kapı. Turkey is a global runner-up in watermelon production, where it is the 2nd largest producer after China by accounting for 3.8% of the global market (FAO, 2014). Watermelon cultivation covers approximately 33% of the agricultural land dedicated to fresh fruit-vegetable production at the provincial level and constitutes 20% of the total national watermelon production (Provincial Directorate of Agriculture of Adana, 2011).

Similar to many developing country contexts, Jacoby (2008: 260) notes that the Turkish countryside has been transformed by capitalist development through "the commercialization of production leading inexorably to the elimination of peasant family farming, a process of depeasantization linked in turn to the growth of landless workers". The shift towards commercial fresh vegetable and fruit production, which made up for half of national agricultural exports between 1996-2004 (Yercan and Işıklı, 2004 as cited in Keyder and Yenal, 2011) testify this. While fresh fruit (13.68%) and vegetable (1.96%) production generally expanded in Turkey, this expansion has been much larger in lower Seyhan with 96.8% for fresh fruits and 3.18% for vegetables respectively for the period 2008-2012 (AGV, 2013). However such expansion often comes at a cost, the social cost of labour-intensive agriculture (Holmes, 2013; Gertel and Sippel, 2014).

Yet a unilateral look on the political economy of agriculture fails to account for the whole picture. Climatic predictions for the basin indicate increases in the range of 2-3.5ºC in mean surface air temperatures accompanied by 25% reduction in winter precipitation by 2070 (Watanabe, 2007) with regional models yielding a dire 6-7ºC increase by the end of the century (Şen et al., 2011). Associated biophysical risks include decrease in groundwater recharge in the whole basin in the range of 24.7% to 27.4% and possible decreases in precipitation as much as 25% for the period 2070-2080 (Tezcan et al., 2007; Watanabe, 2007). It is also estimated that with a 50% increase in groundwater abstraction, which is the main means of irrigation in Kapı, seawater intrusion in the lower basin can progress as far as 10 km inland by 2080 (Tezcan et al., 2007). Consequently, adverse impacts of

climate change are expected to be very significant in terms of yield, crop prices and employment (Özkan and Akçaöz, 2003).

Given the importance of agriculture in the region, and the foreseen impacts of climate change, there is a surprising lack of research concerning social vulnerabilities. To better understand the local context of vulnerability, and the ways in which power relations shape DE, we employed a qualitative approach based on direct observation, in-depth conversations and focus group meetings. We held 20 semi-structured in-depth interviews, eight of which were with seasonal workers (often in groups) and four with their intermediaries. On top of this, we interviewed three landowners, three representatives of different local government authorities, and two academics that previously worked on Kapı. Two focus group meetings were organized, the first with 12 landowners discussing changes in watermelon production in Kapı, and the second with 11 different actors from the region including but not limited to watermelon producers.

The research took place in two stages, first a short 2-week scoping phase (February 2009), and then a return period of two months (March-April 2011). There were some limitations in fieldwork particularly in communicating with the Kurdish seasonal workers on one to one, especially during elections, which coincided with part of the second fieldwork. There was particular suspicion by local authorities, rural police and the landowners on the presence of a male researcher of Turkish origin who was seeking to speak to seasonal workers. Such political constraints may condition study results. Even so, there is enough original, empirical material to sustain the basic thesis of this project, that exposure in Kapı is unevenly distributed, and that landowners often successfully shift the costs of DE to seasonal workers intentionally, with adaptation policies facilitating this shift. We present this in what follows.

4. A political ecology of double exposures in Kapı village

4.1. Outcome double exposures in watermelon production

Seasonal agricultural labour migration constitutes approximately 65% of the agricultural labour in the lower Seyhan region (Erkan, 2000). An unofficial estimate suggests that 100,000 seasonal workers arrive in the lower Seyhan region every year between January and September (Gümüş, 2005). Kapı, whose population is 300, hosts approximately 400 seasonal agricultural workers every year. These workers, mostly ethnic Kurds from southeast Turkey, arrive in Kapı for sowing, setting up greenhouses, hoeing and harvesting watermelons and groundnuts between January-September.

The roots of seasonal agricultural labour migration in Turkey lie in processes of dispossession. Such dispossession is often the result of multiple factors: such as displacement due to dam constructions (e.g. Ilısu Dam being the most emblematic, see Morvaridi, 2004), the cease of traditional sharecropping arrangements in labour-intensive crops (as in the case of tobacco subsequent to withdrawal of subsidies, see Kayaalp, 2009). Constant demand for cheap agricultural labour in the western, central and northern parts of Turkey have also induced a pattern of seasonal migration for those who were not qualified or not willing to join the informal urban labour force (Harris, 2009; Kadirbeyoğlu, 2010, see also Grineski *et al.*, 2013). On top of these, a key factor in the prominence of seasonal migration in the past three decades has been the rise of ethnic strife between Kurdish insurgents and the Turkish army in the eastern and southeastern Turkey. This violent conflict internally displaced approximately a million people with more than 75% of them being from rural zones (Hacettepe University, 2006).

In Kapı, we observe a heightened exposure of such a marginalized and vulnerable group to climate risks, which are most commonly manifested as climatic extremes such as prolonged drought and increased frequency of hail and frost events. Two main negative outcomes prevail. First, there are increased incidences of contagious diseases among the seasonal workers linked to increased climatic variations. Since their work is mediated by a verbal contract between the labour intermediaries and the landowners, seasonal workers work with no formal labour arrangement and hence remain out of the formal social security and health coverage. Malaria is one of the vector-borne diseases with well-known linkages of climate and living condition related to its transmission. Ergönül (2007) links the increased historical trend of malaria incidences with increasing mean temperatures in Adana for the periods 1977-1987 and 1993-1998. Out of the 77 malaria cases seen in the region in 2001, 57 of them were observed among seasonal workers (Özbek, 2007). In 2002, figures were 25 out of 31 cases. Moreover out of 1,399 cases of seasonal workers registered at the local clinic, 342 (24,4%) of them suffered from respiratory diseases during March-October 2002 (Sütoluk et al., 2004). The majority of the observed health problems are related with high temperatures, lack of potable water due to scarcity and contamination, malnutrition and increase in vectors. In all cases due to lack of social coverage, seasonal workers either have to pay for such occupational hazards or rely on charities for health service.

Second, worker-housing conditions pose a significant threat under heightened climatic uncertainties. Workers in Kapı reside in makeshift tents in encampments, mostly next to the lands that they work in, under extremely

poor sanitary conditions without access to clean water and toilets. Fires due to wood stoves inside the tents pose a significant problem for seasonal workers particularly in early spring (Özgür Gündem, 2011). Inappropriate housing conditions in tent yards exacerbate their vulnerability to climate-induced health risks, specifically during very cold and very warm periods. These risks also manifest themselves as sudden on-set events. During our initial interviews in early 2009, landowners in Kapı stated their satisfaction with the weather conditions following three consecutive dry years. However by May of the same year, approximately 6000 hectares of watermelon plantation in Karataş and neighbouring district were inundated due to heavy rainfall. Such events have deleterious effects on seasonal workers not only due to their precarious housing conditions but also in terms of payment of their wages. The superimposition of climatic and economic stressors manifests itself as loss or delay of wages (often in the scale of months), severely worsened housing conditions and deteriorating personal health.

> "So landowners come and tell us "there was a storm last night" and we all go to the field. We spent days and nights working there. We go there at night to see but it [the crop in the field] dies at night, what can he do? Eventually if he cannot sell it, you cannot get your money. These [crops] also belong to us." (Seasonal worker, 29.03.2011)

Watermelon farming is increasingly popular among many small and medium-sized producers. However despite the risk of anticipated impacts, this practice is not only ridden with climatic uncertainties. This practice is further affected by market fluctuations. 'Gamble' is the typical metaphor for watermelon farming due to its lucrative yet risky character.

> "Watermelon is like a gamble. You never know what you will get back or if you will be able to pay back your debts." (Landowner, 22.04.2011)

> "It is all about the weather conditions. It needs to be chilly in here and warmer in bigger cities like Ankara or Istanbul so they there's higher consumption. Look, what happened last year? We started sending out [watermelons] in late May and there was no sun in these cities for 20 days. No one wanted watermelons and prices fell. If there is heavy wind [indicating froze] in here, producers will harvest 10 days before the normal, prices will fall and no one benefits". (Landowner, 11.04.2011)

This metaphor resonates well with Keyder and Yenal's (2011: 63) observation on "the growing feeling of insecurity and indeterminacy on the part of the farmers about the prospects of their production and marketing decisions". Eventually simultaneous occurrence of climate shocks and landowners' gamble with domestic and foreign market prices manifest themselves as an outcome DE. However one should note the manifestation of

much worse impacts on seasonal workers. Absence of formal labour contracts, lack of access to social security, social and spatial exclusion of their encampments all contribute to consolidate a context where seasonal workers bear the majority of the burdens. It is with this vision that we now turn to context related DE.

4.2. Context double exposures and agricultural insurance

Increased frequency of climatic and market shocks damages both landowners and seasonal workers alike in Kapı. However adaptive policies promoted by the state such as the Law on Agricultural Insurance (no. 5363, dated 14.06.2005) brings a new dimension into risk reduction for landowners. Consequently, Agricultural Insurance Pool Enterprise (TARSIM), a private-public partnership including 23 insurance companies was established in 2006 to offer 50% subsidized agricultural insurance. TARSIM covers risks from hail, storm, fire, cyclone, landslide, earthquake, floods and flash floods. One of the key bottlenecks associated with this insurance scheme, however, is its indifference to drought. Despite increasing calls from the landowners to cover for droughts, TARSIM officials are reluctant if not resistant to include drought; stating that the company is not strong enough to insure drought risks yet (Hürriyet, 2010). Hence it is not fully groundless that some commentators suggest “TARSIM produces gains only for the insurance industry, not for the farmers” (Turhan, 2011: 9).

Nonetheless TARSIM still provides a fall-back measure to compensate for the economic loss after other strategies fail. For seasonal workers however, the most vulnerable population according to our empirical analysis, such schemes fail to deliver. While the Turkish national adaptation strategy pays rhetorical lip service to seasonal workers being among the most vulnerable groups (MOEU, 2011: 104), it provides no specific measure whatsoever to improve their livelihoods and adaptive capacity. For example, inclusion of seasonal workers in the formal social security scheme would go a long way into reducing their vulnerabilities, yet there is no such provision in the existing policies. While landowners are to be insured with state back up against financial losses, seasonal workers remain with no security whatsoever against losses of their whole livelihood, as they are not entitled to any compensation due to the informal nature of their labour relations. Hence their DE to a multiplicity of stressors at the outcome level is further exacerbated with the lack of social safety nets and income support in context-level. Landowners change their contexts by enrolling in subsidized agricultural insurance schemes despite increasing protest on their part, for example, due to non-payment of compensation in due time as in the case of hail-stricken

watermelons in Kapı this year (Evrensel, 2014). However as our respondents mentioned in casual encounters, farmers receiving insurance payments on time still delay or do not even dare to pay wages to workers. Seasonal workers become entrapped waiting for their payments from the previous season while trying to make sure they have a job in the next season.

> "If market prices are low and watermelons do not cost a dime that year, what are you going to do? Are you going to kill the landowner? [Agricultural] intermediaries get their money anyway but when the harvest do not get a good return, they usually delay our money." (Seasonal worker, 09.03.2011)

Agrawal and Perrin (2009) remind that resorting to market-based adaptation (i.e. insurance) should be treated with caution given the highly unequal access to them, especially for those who are in marginalized situations. As we elaborate below, this unequal access contributes to the big picture in which costs of DE are successfully shifted to the most marginalized segments in labour-intensive agriculture in Kapı.

4.3. Feedback double exposures and cost-shifting successes

Martinez-Alier (2002: 30) suggests that "the poor sell cheap, not out of choice but out of lack of power" when he refers to *cost-shifting successes*: a term he uses to highlight the uneven distribution of socio-ecological cost to the already vulnerable segments of the society and appropriation of the benefits by the dominant social groups particularly in reference to ecological conflicts. In line with the DE framework, two processes come out strongly when one shifts the focus towards landowners instead of seasonal workers. First, there is a negative feedback insofar as actions taken by landowners to respond to climatic and economic changes end up producing new vulnerabilities. Second, to the extent possible, landowners shift the costs and risks of these changes to the seasonal workers. Such cost shifting eventually causes a relative safety for powerful segments of the population in Kapı at the cost of relational insecurity of other groups. Within the context of seasonal labour, Laurent (2013: 164) calls this 'social dumping' or put otherwise "having the work [done] without [the hassle of] the worker".

Kapı producers have 10-20ha of land on average. Normally watermelon requires 45 days of work. Considering the labour need of 8-9 man-days per 0.1ha of land, no doubt that this makes a significant sum for the landowners. Particularly when producers cannot get the revenues they hope for, they resort to delaying or refusing to pay the full wages of the workers as a buffer strategy. As of 2011, the daily wage of a seasonal worker was 23 TRY (~10 Euros), 10% of which was directly reserved by the intermediaries

themselves. In return, they work 10-12 hours/day starting in cool days of winter until very hot and humid days of summer. Intermediaries act like an informal buffer for the workers in the absence of access to a formal social security system. Some of the intermediaries have grocery markets back in workers' hometowns and provide food and coal to the workers during the winter in exchange of their labour during the summer months. Such practices inevitably lock-in the worker to the mercy of the intermediaries.

Landowners face exposure to both changing climatic and market conditions, to which they respond in ways that create feedbacks. The mass shift to watermelon in Kapı was because watermelons have high productivity compared to traditional crops like maize and barley, which are failing in efficiency with the rising mean temperatures. Tsujii and Erkan (2007: 10) suggest that watermelon farming would increase to cover 54.4% of the irrigated lands by 2070s in the region. However, watermelon production is labour-intensive and hence increases the demand for stable seasonal labour inflow. In a focus group, landowners reported an increase in the yield due to aggressive introduction of fertilizers and grafted seedlings in the last 10 years. By raising the yield from 30 ton/hectare to 40-45 ton/hectare in watermelon and expanding the sown area, more seasonal workers were attracted to the region. The negative feedback from the intensification of production, nonetheless, was the rise of *fusarium oxysporum* disease in the crops: a problem which our interviewees repeatedly linked to bad agricultural practices such as soil overexploitation, intense salinization due to excess groundwater extraction and the monoculture of watermelons. Derviş et al. (2009) suggest a link between *fusarium* and the excessive exploitation of land for watermelon without crop rotation. It is important to underline that such intensification is undertaken in order to meet the domestic and international market demands and to deliver as soon as possible.

In an attempt to adapt to changing conditions, producers in Kapı responded by introducing zucchini-grafted watermelon seedlings. These grafted seedlings are promoted for their resistance against climatic extremes (Olay, 2011). Moreover they are also resistant both to *fusarium* and longer periods of drought. Yet in turn they created unexpected problems. On one hand, grafted seedlings created a dependency since they cannot be sown for a second time hence forcing farmers to purchase new seedlings each year. Our respondents in Kapı repeatedly lamented their dependency on seedlings that come from large agri-business companies from the Netherlands and Israel. On the other hand, the use of grafted watermelon seedlings ended up producing decreasing returns in both the domestic and international markets due to a concern related to the taste of the harvest.

Grafted seedlings not only produce dependency but also adversely affect the taste of the product and augment the use of chemical fertilizers, at times leading to refusal of watermelons by international markets (e.g. like in Russian market in 2008, Yeni Şafak, 2008). Yet agri-business representatives argue that falling prices and taste issues are due to early harvest. The demanding conditions in the national and global markets drive landowners to harvest as early as possible. As reported by landowners in Kapı, the rise of *fusarium* coincided with changes in market conditions during the last decade. Kapı's comparative advantage is that it can grow watermelons early in the season hence giving producers a chance to serve domestic markets first when the prices are at their highest. Producers harvest their watermelons between mid-May to mid-June, placing them ahead of other producers elsewhere and thus giving them advantage to set the initial prices. However, those conditions changed drastically as part of trade liberalization and the opening of border trade with Iran. Law (no. 4910) changing the border trade regime was enacted on 01.07.2003. This legislation authorizes the Council of Ministers to make exceptions on tariffs and quotas for border trade with Turkey's neighbours, at times eliminating trade barriers to allow for free circulation of goods. The introduction of this law coincided with the implementation of ARIP (Agricultural Reform Implementation Project) spearheaded by the World Bank in the aftermath of the 2001 economic crisis, which redesigned Turkish agriculture into an agricultural basin model which prioritizes particular crops by removing subsidies and introducing direct income support. Hence an overlap of an increased interest towards watermelon farming, expanding border trade, and removal of subsidies in agriculture led to a convoluted stress for producers. When asked about the worrying state of inflation in the country, Iran's Khomeini once famously said, "[the] revolution was not about the price of watermelons." However, prices of watermelon from Iran do matter in Turkey. Due to its favourable weather conditions, Iran can supply both the Turkish domestic market (up to 50 tons/day) and global markets starting from April, thus earlier than Kapı. This inevitably leads to decreased prices for producers in Kapı both in local and global markets.

It is our contention that the problems related to grafted seedlings point at a negative feedback DE. Grafted seedlings were introduced as more climate and *fusarium*-resistant varieties, but in turn decreased watermelon's marketability and increased the costs of the farmers by exposing them more to market forces. Landowners themselves in Kapı are acutely aware of these risks and their exposure to both climatic and global market forces.

> "We started cultivating grafted seedlings back in 2006 because everything was getting more and more uncertain. Grafted seedlings are immune to diseases such as fusarium. Imagine, fusarium: You work to sow [the land], watermelons become ripe, time for harvest arrives and all of a sudden you see that fusarium hits all your work. There is no cure to it. […] Grafted seedlings [on the other hand] are a bit hard-bitten, they grow under any weather conditions be it heavy rain, extreme hot or extreme cold. Moreover they are resistant to fusarium." (Landowner, 22.04.2011).

Landowners therefore knowingly *gamble* in the face of ecological and economic uncertainty, and know that their adaptations and responses might backfire. Climate change only worsens this gamble by increasing the bets and risks alike, therefore creating a terrain fit for shifting the costs of potential failures to those at the bottom of the social ladder. Precisely for this though, landowners make sure that a considerable part of this burden and risk falls on the shoulders of the seasonal workers. For instance, the same landowner cited above, told us that with the watermelon market turning sour (as a result of competition with Iran, the backfiring from *fusarium* and the grafted seedlings) landowners now favour a shift from watermelons to mechanized wheat and maize production despite decreasing returns. The reason is that these traditional crops require much less wage labour due to increased mechanization and therefore reduce labour costs. In other words, the costs of the failed gamble are being shifted to seasonal workers as lack of employment.

Apart from such structural changes, this cost-shift also takes place within bad years, when landowners delay or even refrain from paying the promised wages to seasonal workers. Landowners in Kapı argue that they incurred serious losses in the period 2007-2009 given the decline of prices in the domestic market due to the competition with imports from Iran. Many of them did not even harvest their watermelons, as it was less costly to leave them on the ground in this period. Not surprisingly, this period also coincided with prolonged droughts, where many landowners moved to other products due to the excessive cost of irrigation. Associated delay of payments led to a strike of 50,000 seasonal workers in the region, the year when drought most severely stroke Turkish agriculture (Sol, 2007).

Under the light of these findings, we argue that local power dynamics and uneven hierarchical relations embedded in rural relations underscore cost shifting to seasonal workers. As Taylor (2013: 320) points out, understanding the inherent uneven relations in agrarian settings requires more than a mere practice of mapping vulnerability. It involves an exploration of the structural conditions relating to the means of production, class relations and ethnic

divisions with an eye for transforming those conditions. In Kapı, a split between Turkish landowner and Kurdish seasonal worker marks those conditions. Social and spatial exclusion of workers that temporarily settle in the outskirts of the village topped with a relation of dependency toward intermediaries contribute to workers' vulnerability. While landowners are increasingly facing uncertainty, they seek to maintain the inflow of cheap and obedient labour. This requires a continuation of the status quo, implying that in order to avoid any economic burden for landowners, wages and working conditions must be kept at minimum for seasonal workers. It is in this context that, adaptation policy needs to move beyond interventions to partially amend biophysical vulnerabilities and problematize production relations ridden with ethnic and class divisions in the region.

5. Discussion

In his preface to The Development Dictionary, Sachs (2009: ix) argues, "the competitive struggle of the global middle classes for a greater share of income and power is often carried out at the expense of the fundamental rights of the poor and powerless." We argue that this is also the case for adaptive strategies in seasonal labour-intensive agriculture in Kapı and possibly beyond. Power asymmetries, shaped by divisions in ethnic, class and gender lines which are the landmarks of seasonal agricultural labour, often contribute to a successful cost shifting in responding to climate and market contingencies manifested as DE. These uneven relations allow powerful groups to shift the costs and risks of future climate and market uncertainty to those who are at the lower end of agricultural seesaw. Adaptation policies, embedded in 'market-first' ideologies, facilitate this shift. Such a shift, we argue, mainly stems from seeing the agricultural sector as a homogeneous unit and oversimplifying the forces that structure the vulnerabilities of diverse social groups within it.

One of the key tenets of the DE literature focusing on multiple stressors is its acknowledgement of winners and losers within the context of global changes (O'Brien and Leichenko, 2003). However the empirical literature on DE to multiple stressors often handled rural communities as single entities of losers. However, our analysis suggests that there are significant differences between social groups at the local scale of agricultural communities, which are often portrayed as homogeneously distributed among the losers in a world ridden with DE. These differences are shaped by power asymmetries and further facilitate successful socio-ecological cost shifting from relatively more powerful to relatively weaker segments of the population, including but not limited to the case of adaptation. Therefore it contributes to an understanding

in which winner and losers are not universal categories since scale, aggregation and other factors (ethnicity, class, gender) are determinants of who wins and who loses (O'Brien and Leichenko, 2003: 97).

We maintain that a key useful notion that helps to understand this phenomenon comes from the meticulous focus of political ecology on power asymmetries. Kapp (1950) once argued that externalities are not so much market failures as cost-shifting successes. We find that adaptation provides space for such cost shifting to be performed by powerful-at-risk groups in order to reap the benefits (i.e. in case of agricultural insurance) and outsource both economic and social costs (i.e. in the case of wage payment delays for seasonal workers). As regards the policy implications of our study, in line with the existing literature we suggest that policy interventions should seek to avoid expansion of double exposures by addressing the root causes of global changes, decreasing outcome differentials, reducing the existing vulnerability and eventually rethinking present processes shaping the socio-economic and political landscapes (Leichenko and O'Brien, 2008: 104-111). As Zografos et al. (in press) suggest, inclusion of affected groups in adaptation decisions and policies that target poverty and lack of political voice are also pertinent as adaptation policy improvements. This necessarily goes beyond safeguarding the existing patterns of production and calls for rethinking the components of the agricultural sector (i.e. labour, land, markets, production relations etc.) holistically anew. Mono-dimensional policies, which only target at compensating landowners, will remain indifferent to the losses of more marginalized, albeit highly vulnerable social groups. If "adaptation is a social development issue as much as (if not more than) an environmental and technological issue" as Eriksen and O'Brien (2007: 348) suggest, then it means that responses to DE need to address "the political and economic structures and frameworks within which people adapt" (ibid).

Highlighting social justice and environmental integrity as key concerns, the concept of sustainable adaptation diverges both from reformist visions as well as from understandings of adaptation as a fine-tuning of current development practices (Eriksen et al., 2011). However insofar as multiple and intertwined exposures are concerned, Boyd et al.'s (2008: 391) analysis suggesting that development practice predominantly delivers a 'palliative care' for climate change adaptation holds true. Such palliative solutions offer few perspectives to transform the uneven power relations and avoid cost shifting to vulnerable segments of the population. Changing this is possible, if uneven vulnerabilities within the agricultural sector are handled comprehensively. For example, McMichael's (2009: 147) call for a shift from 'Food from Nowhere' to 'Food from Somewhere' in the global food regimes is a case in hand as it

involves establishing strategies that make explicit the differential vulnerabilities and power asymmetries embedded among the actors of labour-intensive agricultural system. Only such rethinking of the seasonal labour-intensive agriculture could address the different pathways of DE by recognizing that the dominant fresh fruit and vegetable production system in the Mediterranean relies heavily on a flexible and mobile workforce (often dubbed as 'undesirably desired', i.e. Gertel and Sippel, 2014: 249) and therefore a move to 'the place-based forms of agroecology' (McMichael, 2009) which is imperative. The added value of a political ecology analysis here is that it makes evident that responding meaningfully to socio-environmental injustice and overwhelming power asymmetries involves advancing adaptation through a more equitable distribution of power, a genuine consideration of alternatives and a deepened democracy (Kallis and Zografos, 2014: 76).

6. Conclusion

This article advanced the double exposure framework by making explicit a dimension that was implicit in it, that is the fact that within exposure units there are population groups that face uneven exposures, with powerful groups shifting risks and exposures to less powerful groups. In the empirical case analysed here, power differentials ran across lines of ethnicity and citizenship, with seasonal workers left out of the provisions of the welfare state, and hence rendered extremely vulnerable to the whims of climate and economic forces that influence agricultural production in southern Turkey. It is conceivable that in other cases such lines of uneven exposure may run across divisions of class, wealth, gender or race. This calls for more empirical studies of double exposure that are more aware and explicit of such divisions and shed light on the ways in which economic and political power shape exposure not only at the macro but also at the micro levels.

Agriculture in Turkey, like many other parts of the world, is exposed both to climate change, via more intense and frequent droughts, floods and high temperatures, as well as economic change, mainly declining prices due to market integration and intensified global competition. Landowners respond to such exposures by adaptations that intensify inputs and production, often taking a gamble that makes matters worse in the long term. A significant part of the costs of this gamble however is shifted to workers with much less power that lack basic citizenship rights, in this case, seasonal workers. This is done via wage cuts and by shifts to mechanized production and new products. While national policies, preoccupied with the continued profitability of the agricultural sector, develop mechanisms to insure and compensate

landowners against losses, they ignore those who are deeply vulnerable, and whose vulnerability can be easily reduced by the provision of access to the basic services of a social security system. Our political ecology lens that look at exposure as unevenly distributed and power-determined, allows us to understand why policies that aim at the adaptation of the agricultural sector as a whole, are bound to end up increasing rather than reducing, the vulnerability of those who are most vulnerable.

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CHAPTER 3

Adaptation as biopolitics: Seasonal agricultural workers, vulnerability reduction and state intervention in Turkey

"Ecological arguments are never socially neutral
any more than socio-political arguments are ecologically neutral"

David Harvey

Abstract

There is growing interest on the links between climate change and migration, but the literature so far has mostly focused on climate refugees, permanent migrants and the implications for destination countries. Seasonal workers, one of the most socially vulnerable groups in the agricultural sector, have received scant attention. Yet, several governments are already planning action to ensure the adaptation of seasonal workers to a changed climate. This article focuses on two recent social and climate change policies adopted by the Turkish government targeting seasonal workers. Based on a discourse analysis of the two policies and fieldwork carried out on a site of intervention, this article argues that such policies, although taken in the name of adaptation, are in fact biopolitical interventions. Their main aim is to secure the uninterrupted circulation of commodities and workers rather than to reduce the root causes of vulnerability. We contribute to an incipient literature on biopolitics and climate change by showing how the spectre of climate change and the pretext of adaptation serve to expand state's control of populations.

Keywords: agriculture, biopolitics, climate change adaptation, social policy, seasonal workers, Turkey.

1. Introduction

Walking one warm and humid day of early spring across the wide-open plain of the lower Seyhan river, at the eastern Mediterranean belt of Turkey, one cannot but witness the dramatic change of landscape compared to a few weeks before. Thousands of people toil the land as far as one's eyes can see. Once winter is over and the agricultural season begins, the district of Karataş receives tens of thousands of Kurdish and Arab migrant farm workers, almost all coming from the southeast of Turkey. With their arrival, white stripes of low-height greenhouses are set up for watermelon, tomato, pepper and eggplant production. In February each year, this greenhouse-dominated landscape visually marks the beginning of a new season. Seasonal workers will work here until May cultivating early grown vegetables and then move elsewhere - often towards central and northern Anatolia - for the sugar beet, onion or hazelnut harvest. Until the end of October, they will plant, hoe, irrigate and harvest, and then return to Karataş for the cotton harvest before heading home to the southeast.

Climate change is a major threat for the livelihood of seasonal workers and a force that can change social relations in the region. The literature on climate change adaptation however has not sufficiently engaged with mobile and seasonal forms of agricultural wage labour. There is indeed a growing interest on climate change and migration (Warner, 2010; Black et al., 2011), but with few exceptions (i.e. Vasquez-León, 2009; Tacoli, 2009), this literature has not sufficiently looked at the particularities of seasonal migration. Seasonal agricultural workers are arguably among the most vulnerable groups in any society, working in agriculture, which is one of the most exposed sectors to climate change. As Gertel and Sippel (2014) underline, labour-intensive agriculture is often constrained by environmental conditions, energy and labour costs as well as by financial investments. Climatic variation, unexpected weather shocks and market uncertainties cause dramatic fluctuations in the temporal supply of and effective demand for labour (Rogaly and Coppard, 2003). Migration with a seasonal character, as Warner and Afifi (2014: 201) maintain, often serve as a 'stop-gap measure' by providing temporal relief from erratic rainfall, impacts of crop failure or an overall downturn of household economy. While securing profitability for the agricultural sector however, seasonal workers themselves are often caught in a poverty cycle. Several studies have already documented the transience and invisibility of underinsured or uninsured agricultural workers in a profession surrounded by occupational and environmental hazards (Burke et al., 2012; Winkelman et al., 2013). Seasonal agricultural workers often "[r]emain invisible in terms of the goals, policies, programs and activities to eliminate

poverty [...] in promoting sustainable agriculture and rural development, world food security and sustainable development" (Hurst et al., 2007: 89). This article sustains that such invisibility is not the case anymore, but this is not necessarily for the better.

Our study critically examines what happens when the state, no longer able to ignore seasonal workers, renders them visible. We focus on state-led vulnerability reduction interventions in the name of adaptation of migrant seasonal agricultural workers (*gezici mevsimlik tarım işçisi* in Turkish, hereafter *seasonal workers*) to climate change in Turkey. We argue that such interventions, although taken in the name of adaptation, are in fact biopolitical interventions whose aim is to secure the uninterrupted circulation of workers and commodities rather than to reduce the root causes of vulnerability. In this way, we contribute to the growing scholarly attention on adaptation as biopolitics (Grove, 2014a; 2014b). Biopolitics is a conceptual framework that scrutinizes adaptive state interventions in terms of control and regulation of populations through processes of normalization, surveillance and insurance from threats (Coleman and Grove, 2009). Some contributions have so far argued that climate change provides opportunities for states to demonstrate their capacity to *make live* (Adelman, 2009), while others (Mukhopadhyay, 2009) point out to securitization in the name of climate change as in the case of the Mexico-U.S. cross-border migration. Individualization of responsibility and adaptability, as Grove's (2010) work on the role of the insurance sector in adaptation policies has shown, lies at the centre of such approaches. Similarly, Oels's (2013) analysis points out a general shift from the management of possibility to the management of contingency in the face of climate change risks. Oels attributes this shift towards 'climatization' of security to the biopolitical logic of mobilizing people to adapt to radical contingencies. This relates to the observed shift from a societal understanding of nature-*at-risk* towards one of nature-*as-risk* (Davoudi, 2014).

Visibility, securitization, individualized risk and the emphasis on the control of populations are key concepts of biopolitical theory, as we explain in Section 2. However, our study adds to the biopolitics and climate change literature, by focusing on the regulation of "circulation", i.e. of people and commodities, and on how populations, in our case seasonal workers, are constituted as part of the flows of power (see also Bailey, 2013). Section 3 describes our methods and fieldwork and Section 4 identifies the key sources of vulnerability of seasonal workers in Karataş. Section 5 analyses two key policies recently implemented in Turkey dealing with climate change and seasonal workers, and reveals their biopolitical features and the notable

absence of measures that would address the root causes of vulnerability. Section 6 concludes with theoretical and political implications.

2. Biopolitics and Climate Change

The concept of biopolitics is most often associated with the works of Foucault (2003; 2007; 2008), Agamben (1998) and Hardt and Negri (2000; 2004). This particular study adopts a Foucauldian understanding of biopolitics, in unearthing the interaction between state interventions and adaptation. Biopolitics, in this vein, refers to "the techniques and rationalities of power mobilized in pursuit of the security, growth and development of individual and collective life" (Grove, 2014a: 22 after Foucault, 2003). For Foucault (2003), biopolitics deal with the population as a power problem: one that is political, scientific and biological all at once. The key here is his historical observation of the emergence, starting around 17th century, of a new form of power, "biopower", alongside traditional "sovereign power" (Foucault, 2003; Reid, 2006). Sovereign power refers to the traditional power of the monarch to "*make die*", i.e. kill (with war, execution or forced exile) those who threaten his territory or alternatively, to "*let live*" those that protect it. Sovereignty takes the territory, its protection and expansion as its object. Instead biopower focuses on the "population", a new conceptual category at the time, as its object of intervention. Power is no longer exercised solely through sovereignty over the territory, but also via health, productivity, reproduction and wellbeing of the population. In this new model, expressed best in the historical emergence of the science of "political economy", the state is expected to take care of the people, not for the sake of their lives *per se*, but for their role in the economy. Under biopolitics, state power *makes live* or, in its extreme, *lets die*.

Through biopolitics, states govern individuals and populations by "practices of correction, exclusion, normalization, disciplining, therapeutics and optimization" (Lemke, 2010: 430). Therefore, the object of biopolitical intervention is the life of populations, seen as a "cohort of individuals" (Dillon and Lobo-Guerrero, 2008). When life itself becomes the object of such interventions, state's use of coercive policies to enforce individual and collective life-enhancing initiatives (i.e. public health interventions) find justification. In turn, calculative practices - censuses, maps and statistics – make life amenable to governmental intervention and improvement (Grove, 2014a: 27).

Three concepts from the analytics of biopower are especially useful for our purposes of analyzing seasonal migration and climate change: circulation, (in)visibility, and the individualization of risks. We define a biopolitical

intervention as one that: i) aims to control the circulation of people and commodities, allowing "good" circulation and suppressing "bad" circulation, ii) renders legible and visible certain aspects of a population, while ensuring that others remain invisible, iii) displaces the handling of risks to individuals by actively promoting formation of "adaptable, resilient subjects". Let us explain each in turn.

Circulation is a key concept in the biopolitics lexicon. Biopolitics is a matter of "organizing circulation, eliminating its dangerous elements, making a division between good and bad circulation, and maximizing the good circulation by diminishing the bad" (Foucault, 2007: 18). Good circulation here refers to the unimpeded flow of money, commodities and workers conducive to the expansion of the economy. Conversely, bad circulation includes diseases, conflicts or 'bad' people that should be controlled and not allowed to migrate from one space to another. Biopolitics, in this sense, establishes the terrain (*milieu*) in which circulation operates (Foucault, 2007: 21), which, in turn, has to be monitored and regulated (Dillon and Lobo-Guerrero, 2008: 268). According to Aradau and Blanke (2010), biopolitics acts to prevent 'unruly' movements, pre-empt contingencies and foster good circulation in order to govern risks, insecurities and vulnerabilities. Biopolitical interventions are realized through policies regulating circulation.

Attempts to control circulation presuppose a series of simplifications intended to improve the legibility of populations. Statistics as literally the "science of the state" has this purpose: informing the state about average properties and changes in a population. Such calculative practices make populations visible in a very specific way, since they are driven by certain assumptions that are linked to specific purposes related to the governing of the population. Simplifications are like abridged maps, which neither represent the actual activity of society nor intend to: they rather represent the slice of the reality that interests the official observer (Scott, 1998: 20). Consequently, the peculiarities of certain dynamics of populations are either left unseen or deliberately underrepresented. Scott's work has shown how states use simplification to produce certain types of knowledge and gain control over populations (e.g. through census data) or territories (e.g. through cadastral maps). This simplification "makes the phenomenon at the centre of the field of vision more legible and hence more susceptible to careful measurement and calculation" (ibid: 28). Careful measurements and calculative practices manifest themselves in policies *securitizing* those who risk undermining the functioning of capitalism, e.g. from *the penniless and vagabond agricultural worker* to organized workers and from *the dangerous class* to the *mobile and precarious flexible worker* (Negri, 2003; Aradau and Blanke, 2010).

Securitization of these objects, i.e. through rising walls to impede migrant mobility or “climate refugees”, constitutes part of the exercise of biopolitics (Bettini, 2013).

Biopolitical interventions under the contemporary phase of what has been called neo-liberalism increasingly take on the form of a “reorganization or restructuring of government techniques, shifting the regulatory competence of the state onto responsible and rational individuals” (Lemke, 2001: 202). This does not necessarily equate to a ‘roll-back’ of the state (see Peck and Tickell, 2002). Rather, it points at a deeper ‘roll-out’ disguised as individualization and capacity-building for better surveillance and control of productivity. Hence the lives of individuals are increasingly given an entrepreneurial form, empowered through such interventions. This calls individuals to maximize their self-interests and adapt to risky and ever-changing environments. Biopolitical interventions, consequently, aim to create adaptable and governable individuals, who do not threaten the existing politico-economic order due to the potential desolation they live with. In doing so, interventions target those who are fit-to-adapt, with the overall purpose of maintaining the status quo of the desired circulation of money, people and commodities (Reid, 2010). As Potter (2009, unpaginated) argues “the environmental discourse concerned with ameliorating climate change has increasingly focused upon the individual as an agent of self-monitoring, to both facilitate government agendas at a distance, and to “self-fashion” in the mode of the autonomous subject, securing [itself] against external risks.” The politics of such autonomous individuals leads to the construction of the resilient subject, which “permanently struggles to accommodate itself to the world” (Reid, 2012: 74). It creates a subject that is not political and hence capable of changing the world or imagining alternatives to its condition, but a subject that strives to secure itself from the world around it (ibid.).

Climate change adaptation offers an opportunity for an extension of biopolitical power. It provides a new rationale to control circulation and population on the one hand, while on the other hand individualizing responsibility to adapt. As Felli and Castree (2012: 1) observe, uncritical interventions serve to produce ‘adaptable’ human subjects, defined as “people able to respond tactically to anthropogenic alterations of the biophysical world while becoming ever more the subjects of capitalist market relations”. Therefore, if adaptation is as likely to extend biopolitics so as to reduce vulnerability, then it becomes imperative to identify what precisely is going on in specific grounded contexts and hence theorize the conditions under which adaptation becomes biopolitics.

In an attempt to map this new terrain, Grove (2014b: 202) categorizes adaptation interventions under three main types of biopolitical approaches. The first ('ordered life') is in line with the impact assessment tradition of adaptation, which understands the socio-ecological condition as well ordered and vulnerability as occurring subsequent to an impact. This approach, conforming to biophysical approaches to adaptation, strives to bring back the previous condition. The second approach ('logistical life') elaborated by Grove is the one that interprets vulnerability as a precondition. This approach suggests that the re-configuration of flows of people, goods and information within the existing politico-economic assumptions can serve to reduce existing vulnerabilities. However it often fails to imagine alternative ends by lacking a political imaginary on how to tackle root causes. The final approach is the 'resilient life'. In this approach, both policy and practice are designed to handle an unknown amount and scale of threats in everyday life so as to be able to maintain intact the functions of the socio-ecological system and its components (Grove, 2014b: 206). Consequently, adaptation does not seek to close the gap between present and (uncertain) future conditions but to knit policy and practice together by engineering particular forms of individual and collective life (ibid: 203). As a result, such interventions continuously strive to construct a 'resilient subject' that is a life that is adaptable to changes, but without a vision or will to alter the rules of the game (Reid, 2012).

In what follows, we exemplify pathways of biopolitical interventions on a particular case: state interventions concerning seasonal workers in Turkey promoted within the context of climate change adaptation. Although framed as adaptation and social policies, we argue that such policies in effect enhance control of seasonal workers without addressing the root causes of their vulnerability and therefore undermine potential alternative political imaginaries. The main aim of state policy appears to be managing climatic contingencies through regulation of the circulation of people in a way that maintains business as usual in the country's agricultural economy.

3. Methodology

We have conducted an in-depth case study in the Karataş district of Adana, located at the southern tip of the lower Seyhan river basin in the eastern Mediterranean coast of Turkey (see **Figure 3.1**). This region was selected since it is the largest destination for seasonal workers in Turkey, receiving approximately 100.000 people ($1/4^{th}$ of mobile agricultural labour force) working in various crops every year between February and October. Moreover, this region was the geographic focus of the first community-based adaptation project in Turkey, initiated by the Ministry of Environment and

Urbanization and executed by UNDP Turkey. Karataş was selected because of the severity of anticipated climate change impacts.

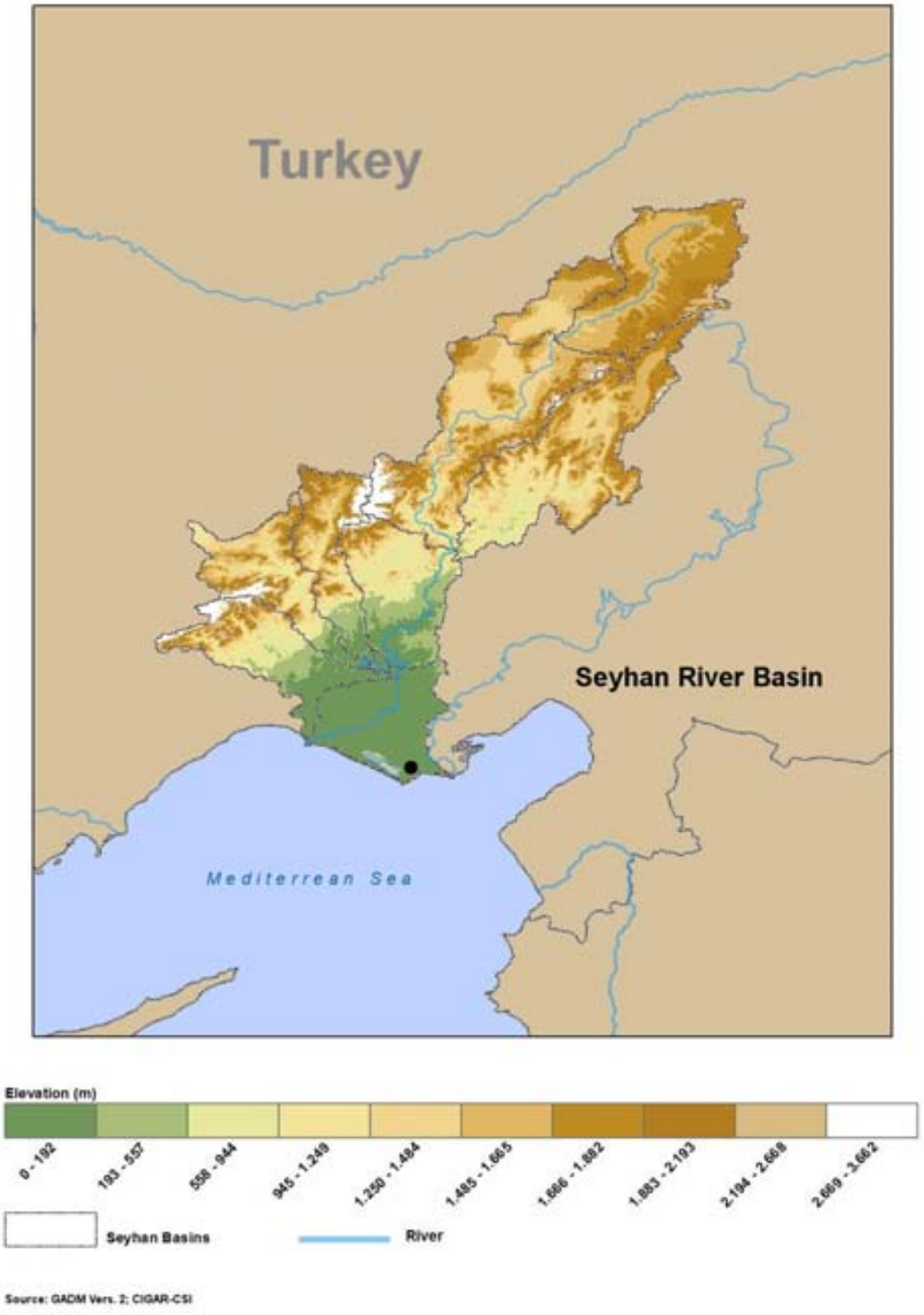

Figure 3.1 Map of Seyhan River Basin. Karataş is indicated with a black dot (Courtesy of Hannes Etter, UNU-EHS).

Fieldwork developed in two phases: first, a scoping phase with a two-week visit in February 2009 which was followed by a two-month direct observation period, conducting 30 semi-structured interviews and many more informal encounters with seasonal workers, intermediaries and landowners between February and April 2011. Fieldwork also included a 5-day visit to one of the main places of origin of seasonal workers in southeast Turkey, Şanlıurfa. Interviewees were selected through snowball sampling with the help of key informants such as the president of the now defunct association of agricultural intermediaries, the head of Tropical Diseases Research and Application Centre at Çukurova University, the president of the Chamber of Agricultural Engineers and social workers involved in schooling of seasonal workers' children in the region. Direct observation consisted mostly of sharing meals and after-work talks with seasonal workers and spending time with them in their encampments. The presence of intermediaries during most of the interviews with workers and the limited access to women may create a certain bias in our results. The heavy surveillance and monitoring of our research by the rural police complicated our mobility and at times hindered direct access to people and information. This was exacerbated by the unfortunate fact that fieldwork took place in the run up to the 2011 national elections and in the turmoil following the imprisonment of hundreds of Kurdish politicians and journalists in late 2010. Outsiders wanting to get in contact with Kurds were treated with suspicion. Recognizing such limitations, we have pursued information triangulation and contextualization by combining material from interviews, direct observation, and empirical data including historical material and secondary analyses, as well as a discourse analysis of documents from the two key recent policies targeting seasonal workers.

4. The vulnerability of seasonal workers in Karataş

The vulnerability of seasonal workers needs to be placed within the historical context of the political-economic transformations of Turkey's countryside. A significant transformation of agriculture and rural regions took place in Turkey after World War II, with a shift from feudal landlords to capitalist farmers and from sharecroppers to wage workers (Kıray, 1974). This shift was accelerated by the introduction and promotion of modern agricultural tools, financed by the Marshall Plan, a plan that, according to Wood (1986), solved the problem of over-accumulation faced by North American capital by investing development aid in the periphery. The Marshall plan gave Turkey an agricultural function in the post-war world system (Tören, 2007), favouring large landholdings over the formerly dominant small and medium-sized landholding households (Pamuk, 2014). Subsequent economic crises (in

1980, 1994, 2001) following the dissolution of the import-substituting protectionist economy, the dominance of free-trade agricultural policies (particularly after 2001) and the failure of national policies on stockbreeding led to a significant shrinkage of the rural population by the 2000s (Gülçubuk and Aluftekin, 2006).

Smallholders who could not compete with larger landholdings in a globalized environment migrated to cities. Particularly after 1985, the population in the Turkish countryside began to shrink in absolute terms (Keyder and Yenal, 2011: 21). Steady decrease in the rural population continued as "neoliberal globalization swept away the accustomed networks of information, production and marketing in the Turkish countryside, which were largely established and maintained by comprehensive governmental support policies put in place during the national–developmentalist era of the post-war period" (ibid: 82). The Turkish Ministry of Development (MOD, 2013: 156) reports that the share of rural population the country decreased from 32.5% to 27.7% between 2007 and 2012. In absolute terms, rural population decreased by 8.8% while the total population of Turkey increased by 7.1%. Aydın (2010) explains how de-agrarianization (and associated land consolidation as well as rural population decline) has been actively propelled by the Turkish state, since decision-makers often linked development with the decline of the relative share of agriculture in the national economy. Despite such trends and interventions, Turkish agriculture still has a significant smallholding component with 32.7% of all agricultural enterprises having a landholding between 0.2-4.9 ha, while 78.9% have less than 10 ha (TURKSTAT, 2008).

Seasonal workers came to fill the labour shortage that the decline of the rural population initiated by the agricultural modernization of the Marshall plan caused. They rose to prominence filling the labour gap in regions that lived a rural exodus. Both in terms of "push" and "pull" factors, seasonal work is related to concentration in ownership after the dispossession of small peasants, which led both to rural depopulation in the west, and a reserve army of disposable labour in the east (Kadirbeyoğlu, 2010). Nonetheless, seasonal workers are employed in small-scale as well as large-scale farms alike in the West. Despite the absence of official data on the exact number of seasonal workers, various sources agree on around 300,000 (FES, 2012) to 400,000 people moving each year (Ministerial estimate; MLSS, 2012). In comparison the total number of agricultural wage labourers (including local non-mobile labour) is estimated at about 623,000 (TURKSTAT, 2012: 90). The rise of seasonal labour accelerated in the 1990s. Workers from the Southeast increasingly moved temporally towards the country's more affluent

Black Sea (for the hazelnut harvest), the Mediterranean and Aegean regions (for vegetables, citrus, cotton) as well as Turkey's central provinces (for sugar beet, tuberous vegetables and legumes). Despite decreasing rural populations, labour-intensive agriculture in those zones remained possible and profitable as seasonal workers came to provide cheap labour. Key to this was the forced migration and resettlement of Kurdish people in the southeast, due to the long ethnic strife between Kurdish insurgents and the Turkish army, which started in 1984. This violent conflict yielded almost a million (estimates vary) internally displaced people in the period between 1985-1996, with more than 75% of them being from rural regions in predominantly Kurdish provinces (Hacettepe University, 2006). While some of those displaced ended up in urban peripheries contributing to a growing informal urban labour force, others turned towards seasonal agricultural wage labour to make a living (Ayata and Yükseker, 2005). The ethnic strife increased the "supply" of seasonal workers and lowered the cost of agricultural labour (Çınar and Lordoğlu, 2011). Today, seasonal workers, move now from their southeastern hometowns to more than 48 cities across the country (Development Workshop, 2012; Şimşek, 2012).

The majority of seasonal workers we interacted with during fieldwork originate from the eastern town of Şanlıurfa. Most of them live in the periphery of the city there. For many, agriculture had been their main occupation up until the mid-90s when they either lost employment opportunities in the vicinity or could not feed their families anymore from their own land. Economic decline in the area is linked to the ethnic strife and violence. Unemployment in the statistical region that includes Şanlıurfa is the second highest nation-wide at 17.5% (the highest with 21.1% is the one in the neighbouring region that includes the cities of Mardin, Batman, Şırnak and Siirt). These two statistical regions include the cities with the highest number of seasonal workers (**Figure 3.2)**.

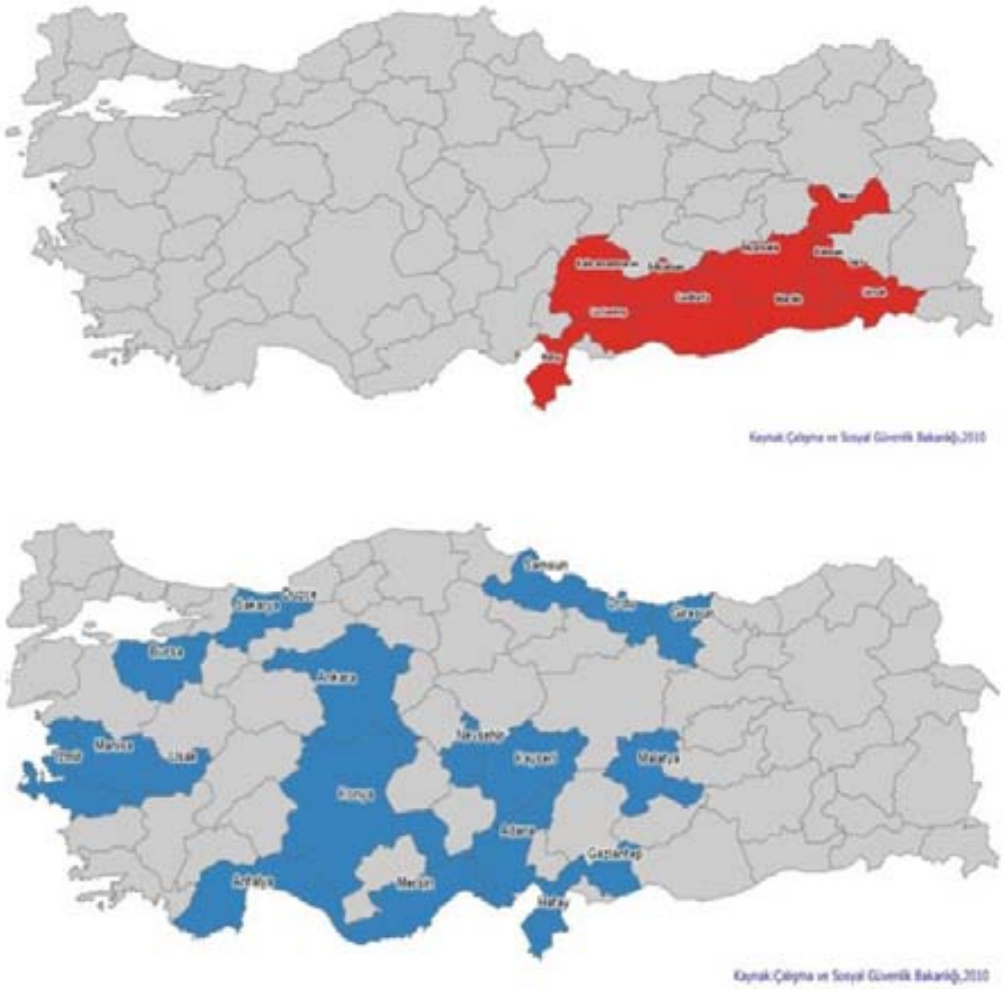

Figure 3.2 Cities with the highest number of seasonal worker sending and receiving figures. The upper map depicts migrant seasonal worker sending cities, while the lower one shows the receiving cities (Courtesy of Ali Kaplan, Development Workshop)

Agricultural intermediaries mediate the mobility of seasonal workers. These intermediaries are often members of the extended family of the workers or come from the same neighbourhood. Typically, they consist of former workers who later on bared the role of interlocutors between workers and landowners, either because they were savvier or had better access to information on labour networks than the rest (Çetinkaya, 2008). Intermediaries arrange the informal labour contract in the destination and commission 10% of the daily wage of workers. The numbers of workers handled by a single intermediary may range between 20-500 workers; with a daily wage of less than 15$ (~1.5 U.S.$/hour, considering the fact that often they work 10-11

hours/day), this means that an intermediary may make anything between 30 to 750 $/day. Landowners communicate only with the intermediaries and do not talk directly to workers. The intermediaries are the only ones bargaining for wages and working conditions such as working hours or the circumstances under which workers are allowed to stop working. In turn, they also act as informal social security nets for their workers supporting them when ill or unable to work. At the beginning of each agricultural season, matters related to seasonal workers are decided in provincial committees – consisting of provincial governors, rural police (*jandarma*), landowners, and intermediaries as representatives of the workers.

Karataş, which is the geographical focus of our study, is ranked 21st among 872 provinces in Turkey in terms of the output of its agriculture in monetary terms. 81.53% of natives are involved in agriculture as their primary economic activity (DPT, 2004). One of the first land consolidation projects (to agglomerate small landholdings into bigger farms) in Turkey was implemented here in 2009. Given the historical context of land ownership and clientelist relations with central authorities, landowners in Karataş have strong nationalist sentiments. Our own observations confirm that landowners are inimical to Kurdish workers, whom they treat with suspicion and contempt. It was not uncommon to see landowners intimidating seasonal workers together with rural police, conducting random ID controls.

This unequal power configuration shapes the vulnerability of seasonal workers. Seasonal workers are located at the end of the chain of any stressor that hits local agriculture. Landowners and intermediaries possess the power to shift the cost of natural or market calamities onto them. Seasonal workers are outside the formal social security system (more on this below) so if they get sick or have an accident they simply lose their job and wage. If there is crop failure, they see their wages reduced or not paid. As they reside informally and cannot register to vote in Karataş, they have no say on the politics and decisions of the local authority. They also have no direct bargaining power, other than through the intermediaries due to the absence of a worker-organized union. Intermediaries do have a strong incentive to secure high wages for their own commission, and indeed organized a big strike in 2007, that counted with the participation of 50,000 workers in the wider area. Yet they are much less concerned with working conditions or the security of seasonal workers since their existence also relies on the precarity of the labour.

As we explain in more detail in another paper on double exposure (Turhan et al., submitted), seasonal workers and the agriculture of Karataş in

general, are exposed to two major hazards: climatic uncertainties and market fluctuations. The lower Seyhan basin is identified as a priority region for climate change adaptation. Climate models estimate 2-3.5^{o}C increases in temperatures in the area accompanied by 25% reduction in winter precipitation by 2070 (Fujihara et al., 2008). Furthermore recent studies using regional climate models hint to an even more severe 6-7^{o}C increase by the end of the century (Şen et al., 2011). As a result the region became the focus of the first community-based adaptation project in Turkey that lasted between 2008 to 2011. Such climatic changes will inevitably limit production and affect seasonal workers' livelihoods. Indeed, heat and droughts are already a major stressor on seasonal workers, with heat strokes posing a major public health threat (THAUM, 2010).

Another major stressor is agricultural market fluctuations. The changing nature of agriculture in Turkey has been on par with global internationalization and deregulation trends, making price, product and production relations more complex, uncertain and vulnerable to shocks (Keyder and Yenal, 2011). Karataş is a showcase of such complexities particularly with regard to labour-intensive agriculture. For example, in the labour-intensive practice of watermelon cultivation, it is not only the increasingly uncertain climatic patterns that severely damage production as in the case of a recent hail storm that destroyed over 1000 ha of watermelon in Karataş (Radikal, 2014). It is also the competition with foreign markets like Iran, which ranks third[4] in global watermelon production just behind Turkey, opened up with free trade agreements (Hürriyet, 2011).

In anticipation to those changing socio-economic and climatic conditions, some landowners in Karataş are already shifting from products like watermelon (which they see as a 'gamble' due to its lucrative yet risky character) to capital-intensive crops such as wheat and maize, which require less labour, have increased productivity and profit, and eventually remove 'troubles' with labour. "*For me, the drive is towards mechanized agriculture* […]" commented a senior agricultural engineer and continued "[…] *In mechanized agriculture, landowners do not have the trouble of finding and accommodating workers. If advanced technologies arrive cheaper, worker trouble will diminish. Producers will be happy. […] However whatever you do, you will still need workers for hoeing and irrigation. From what I see, there is a*

[4] Data on global watermelon production can be found in FAOSTAT: http://faostat.fao.org/site/339/default.aspx

drive towards a less labour-intensive agriculture here." (Interview #28, 08.04.2011).

As the quote indicates, access to cheap farm labour is and will remain a critical issue in the plain (Ünsal, 2004; Gümüş, 2006; Kusadokoro and Maru, 2007). The local establishment of landowners and authorities in collaboration with the state seek solutions to respond to climatic risks and a potential downturn of labour availability. As both production and living conditions get more uncertain, workers are also set to seek income in other parts of the country, including cities, where they feel economically more secure. Although acknowledging that landowners perceive climate change as a distant threat, another senior official from the Chamber of Agricultural Engineers expressed his belief in individualized (self-inflicted and often reactive) adaptation to anticipated changes:

> "The third biggest problem of production [after input prices and climate] is shortage of labour. [...] Yet, as long as there is produce to harvest, there will be workers coming here. **They will adapt**. The impact of [climatic] changes will become more evident as delays in payments, health risk and loss of money for workers" (Interview #27, 08.04.2011, emphasis added).

As one rural development expert observed, dealing with seasonal workers is *"a delicate issue and no one wants to have a headache*". However she recognized that seasonal worker vulnerability is: "[...] *much worse than any other social group to begin with.* […] *As you know this is an informal economy. They depend on the mercy of the landowner*" (Interview #1, 02.02.2011).

Both the state and the local establishment (landowners, local government officials, intermediaries) treat seasonal workers as a social group whose labour circulation should be secured under increasingly uncertain conditions of production (climate, first of all, and market). Consequently, in order to ensure this circulation, state interventions work to reform encampment, transportation and working conditions so that that labour circulation continues without raising demands for higher wages, or treatment as equal citizens with fair working and living conditions that would inevitably increase the cost of production. The next section develops this argument and explains why adaptive state interventions in Turkey are a case of biopolitics *par excellence*.

5. Securing good circulation, arresting bad circulation: Climate change adaptation as biopolitics

The Turkish state addresses the growing vulnerability of seasonal workers by means of two main policies: the National Climate Change Adaptation Strategy and Action Plan (NCCAP) coordinated by the Ministry of Environment and Urbanization (MOEU) and the National Strategy and Action Plan for Improving Work and Social Lives of Seasonal Migratory Workers (METIP) coordinated by the Ministry of Labour and Social Security (MLSS).

NCCAP defines the vulnerabilities of various sectors in Turkey and sets priorities and responsibilities for adaptation. It identifies seasonal workers as among the most vulnerable groups[5] to climate change (MOEU, 2011a: 104). Consequently they were targeted as a priority group for community-based adaptation and hence made the subjects of a public health study undertaken by the Tropical Diseases Research and Application Centre of Çukurova University (THAUM, 2010). The second policy METIP, in turn, aims at "meeting the long-term qualified labour demand of the country through registering seasonal workers and improving their living and working conditions especially those of children" (MLSS, 2010a). Through this initiative, 24.3 million USD were disbursed from the national budget in 2010, 15.1 million USD in 2011 and 11.6 million USD in 2012[6]. Our thesis is that the two policies do not reduce the vulnerability of seasonal workers, but regulate their circulation in ways conducive to the political economy of the region, i.e. to sustain the growth of the agricultural economy and the perpetuation of established power relations. There are three ways in which this circulation is regulated.

First, both policies explicitly aim to create favourable conditions for workers to return and work in the area, but at the same time ensure that they do not stay and reside there permanently. For example, the above-mentioned community-based adaptation project is rather clear that the priority to achieve adaptation shall encompass: "*the prevention of [permanent] migration, and*

[5] Others include construction workers, tourism workers and people living in coastal zones.

[6] Exact figures on how these sums were allocated is not available, but according to our observations and accounts of other researchers most went to agriculture infrastructure, fixing irrigation ditches, and improving ground conditions for workers' encampments as well as capacity-building trainings for seasonal workers, such as training for more skilled labour in citrus packing (Personal communication with a provincial public officer, 28.02.2011).

the identification and control of social problems." (MOEU, 2011b: 39). Good circulation in other words, is the circulation of obedient and cheap labour in good working conditions that do not impact production: a labour force that arrives when needed and leaves when the season ends. Bad circulation, in this gaze, is that of a labour force that arrives and seeks to reside in the area (claiming their rights as citizens) or an unpredictable labour force that could show up for work one year, while failing to show up the next. Workers have fully assimilated how the system works. When we asked if anyone stayed or wanted to stay longer, a seasonal worker responded: "*only Hacı* [labour intermediary] *stays here, he has a house so he comes to Şanlıurfa 1-2 months a year. We live in these tents, so we are obliged to leave*" (Interview #13, 09.02.2011)

To ensure minimum living conditions of seasonal workers, especially under conditions of increasing heat and rising waterborne diseases, a main element of the policy is the establishment of Conglomerated Settlement Zones (CSZ)[7] that are intended to substitute formerly widespread tent squats. These zones, which are designated on public property across Karataş, are meant to provide official settlement zones for makeshift tents with access to basic utilities (electricity, water) and prevent seasonal workers from settling in risky zones next to irrigation channels. Such ordered spatializations of seasonal workers are examples of *non-places* (Auge, 1995), transit sites of good circulation. These *non-places* involve installations and spaces not only ensuring accelerated means of transport but also catering for the accelerated mobility of populations (ibid: 34), as spaces formed in relation to certain ends. They are designated with the purpose of maintaining good circulation of labour by restricting the possibility of a long-term settlement, while in the meantime still providing prospects for a temporary (albeit controlled) return in the future. More precisely, seasonal workers are obliged to leave CSZ once the agricultural season closes following harvest. This departure is completed under the surveillance of the rural police. 'Good circulation' is when workers leave as soon as their labour time ends and continue their migration without causing troubles.

Adaptation policies in turn frame the problem they address as one of "nomadism" intrinsic to Kurdish workers living in tents. This is particularly interesting since, according to Gambetti and Jongerden (2011), the analyses of spatial relations, practices and experiences of Kurdish people, as well as the ways in which they shape the landscapes they live in, have often been

[7] *Toplulaştırılmış Yerleşim Birimleri* in Turkish.

ignored in contemporary Turkey. To this end, a project report claims, “tropical diseases are important especially for the health of *people living in tent villages in the basin*” (MOEU, 2011b: 40). Throughout the report, language is used that treats as natural the fact that Kurdish people reside on tents. Kurdish seasonal workers however do not live a nomadic life for some cultural reason; they live in proper houses back in their south-eastern hometowns. The reason why they seasonally immigrate lies in the dispossession of their livelihoods back at home and the political economy of agriculture that has left them with seasonal work as the only meaningful employment opportunity other than migrating to metropolitan areas. However when naturalized as an issue of nomadism, the adaptation problem pre-empts the biopolitical intervention of the state to secure how and where these ‘nomads’ live.

Within the scope of this community-based adaptation project, the aim is stated as being to reach seasonal workers, who are “nomadic” (THAUM, 2010: 6) and “at risk” due to growing incidence rates of climate-related tuberculosis and water-borne diseases. The second bad circulation that the policies purport to avoid concerns diseases brought by the seasonal and thus posing a threat to the local population as well as to the workers themselves, by keeping them away from work. During our conversations in the field, local government officials repeatedly stressed the importance of establishing CSZs to cater for the ‘hygiene’ and ‘order’ of seasonal workers, especially under changing climatic patterns (see also MOEU, 2011a: 106).

Seasonal workers are indeed vulnerable both to heat strokes and heat-aggravated waterborne diseases. During fieldwork one of the most common scenes was that of workers lining up outside local village clinics with respiratory problems, muscular problems and sunstrokes. These effects are expected to increase with climate change (Haines et al., 2006). It is also reported that Crimean-Congo haemorrhagic fever cases might increase with climate change, the majority of which occur among agricultural workers (Ergönül, 2006: 204). The main problem for seasonal workers though, is their lack of access to basic water infrastructure and the public health system. Seasonal workers do not have access to public health for two reasons. First, since they seasonally settle in squatted public land and they are not formally registered residents of Karataş, they do not have appointed primary care physicians. Second, they are not entitled to social security. For this, they would need to work for more than 30 consecutive days in the same job (same agricultural enterprise), something landowners and the nature of agricultural labour ensure that never happens.

In biopolitical fashion, the two policies we mentioned above shift the burdens of adaptation and public health risks to workers themselves. Following Reid (2006), seasonal workers are expected to be "adaptable subjects", i.e. adapt *on their own*. Authorities sustain that seasonal workers could pay for social security themselves if they wish. Such options however, are evidently beyond the means of people paid less than 15$ per day for a limited period of time. Instead of providing formal social security and a comprehensive plan for access to healthy settlement conditions, what the state instead offers is charity, which increasingly shifts from being a temporary to a permanent solution (Kısa and Younis, 2006). This is most graphically exemplified in the outcomes of the public health risk assessment undertaken within the scope of the aforementioned community-based project:

> "The project aimed to reach 3,600 of the 12,000 people who have migrated from east and southeast Anatolia as seasonal agricultural workers and settled in tents and sheds in the towns of Tuzla and Yunusoğlu in the district of Karataş […] Aside from transmitted diseases, access to clean water and education are also critical problems in the area. […] Within the project scope, hygiene products, toothbrushes, toothpastes, shoes, t-shirts and blankets were distributed. Training on sanitation and hygiene was given." (UNDP, 2010)

The "capacity" of workers to take care of themselves is to be "built" by teaching them how to be hygienic and by offering them informal health services, a charity by state or international organizations, while access to regular health services is denied. It is obvious that the structural vulnerability of seasonal workers cannot solely be dealt with hygiene training (i.e. distributing soap, tooth pastes or rubbish bins) or managed through informal, one-time charitable interventions (e.g. in-kind aid provided during the Muslim holy month of Ramadan). Buğra and Keyder's (2006) observation about the shifting role of the state in Turkey from being the provider of social security to doing "brokerage of charity" is here relevant and strongly resonates Foucault's (2003: 244) argument that biopolitics not only establishes charitable institutions (to *make live*) but also acts through more subtle and rational mechanisms such as individualizing the responsibility for insurance, savings and safety.

The third circulation to be governed is that of individuals who can create "social problems". A provisional decree proposed by the Ministry of Labour and Social Security states the following as among the responsibilities of representatives who will administrate CSZ: "*Informing police authorities with the ID information of all inhabitants, control of destructive separatist activity and ensuring internal order in CSZ"* (MLSS, 2010b). "Improvement of *surveillance* on a local and regional level" is strangely also one of the main

recommendations of the public health project (THAUM, 2010). CSZs do not only serve as hygienic spaces, but also as spaces amenable to surveillance since METIP provisions foresee constant security control over these spaces. Surveillance in those formerly unruly spaces of seasonal agricultural work is also promoted in the name of pre-empting public health risks from climate change. Public health surveys are standardized and regularized while workers still remain without access to formal health services. All these practices contribute to an increased legibility of seasonal workers by the state, which treats them as a population that has to be counted, regulated and monitored at all times. Thereby it lends heavily to the notion of security in its action plan and its progress reports. METIP provisions state this clearly under its 3rd target which state that the Ministry of Interior is responsible to ensure "*a) ID control of workers, b) avoiding people engaging in illegal activities disguised as seasonal workers, c) avoiding provocations against national unity using seasonal workers, d) avoiding inter group disputes and e) not allowing settlement outside of CSZ*" (MLSS, 2010a: 15). Partly as a result of such intimidation, workers remain without formal organization in a union, despite attempts to unionize them, most notably by activists and organizers in 2005. Although a recent initiative for unionizing seasonal workers is underway with stronger emphasis on their ethnic identity (Sendika, 2013), the current situation somewhat parallels Don Mitchell's (2013: 224) observation of migrant agricultural labour in Californian agriculture, when he mentions that state interventions under the Bracero program (1942-1964) were "revolutionary mostly because, right at a propitious time in the development of the agricultural system, that is, right when that system was in the midst of crisis and ripe for revolutionizing, [they] made the further organization of farm workers […] all but impossible."

We therefore conclude that the result of the policies of the Turkish state is the maintenance of the precarious presence of seasonal workers in the field, in an effort to ensure the continuation of accumulation of agricultural surplus value by landowners and to a secondary degree, intermediaries. Policies serve as a buffer for labour-intensive agriculture keeping labour costs low in the face of climatologically and economically uncertain futures. It is indicative here that the adaptation plan identifies seasonal workers as a key group vulnerable to climate change because of potential public health impacts related to heat (not only a humanitarian, but also an economic concern, since this could impact labour availability), and not because, for example, of droughts that could dramatically reduce production and employment opportunities for seasonal workers in the region. On one hand, state interventions secure the desired circulation of workers, which contributes to the circulation of agricultural surplus, while on the other hand they serve to

control the potentially threatening circulation of permanent rural-urban migration or political activity. Climate change and public health both act as justifications for this extension of biopolitical control over seasonal workers.

Inability to unionize or bargain collectively obliges seasonal workers to air their concerns through intermediaries. Yet, intermediaries remain part of local power dynamics and are content as far as they can secure their commissions through keeping wages at a sufficient level. It is illuminating that the new policies of the Turkish state do not challenge this informal institution of intermediaries, and formally recognize them even though they do not conform to national labour laws. If something, policies such as the ministerial decree (no: 27593) on "Agricultural Labour Intermediaries" (27.05.2010) strengthen this informal institution by recognizing and formalizing the function of intermediaries. It is not farfetched to suggest that the main preoccupation of state policies is not how to reduce the vulnerability of workers, which could be reduced by providing opportunities to seasonal workers to express their concerns without mediation and to elect trustworthy representatives defending their interests. Rather adaptation and social policy act hand-in-hand to maintain the *status quo* and not upset the local power dynamics that secure the circulation of both seasonal workers and agricultural commodities.

In conclusion, while the two policies and the associated projects have several provisions and introduce several measures, they stay away from giving seasonal workers the same rights as workers in other sectors enjoy in terms of access to social security and public health. As one respondent put it clearly: "*The acts of the state […] involve nothing close to registering and regulating seasonal workers as formal workers with social security and dignity of work. This is cheating. You cannot just get away by only preaching improvement of working conditions*" (Interview #1, 02.02.2011, development expert). Social housing, pensions, free and accessible healthcare would do much more to reduce the vulnerability of seasonal workers (e.g. to extreme heat effects or to loss of employment due to drought) than any of the other interventions, such as the public hygiene programs or the improved tent yards. Our proposition is that there is a logic behind this "cheating", which involves the intention of maintaining labour costs low under increasing climatic uncertainty, sustaining only the minimum conditions necessary for labour reproduction. A biopolitical framing of adaptation fails precisely because it fails to transform life-worlds in order to deal with vulnerability but merely secures "surviving the after-effects of industrial modernization, green revolution and the Washington consensus" (Walker and Cooper, 2011: 55 as quoted in Grove, 2014a).

This study has significant policy implications. Turkey is not the only country using climate change adaptation policies to control labour circulation as also shown by Brickenstein and Tabucanon (2013) in the case of Australia and New Zealand. Furthermore, our findings may be relevant for European Union policies, particularly under the "Seasonal Workers Directive", formally adopted by the European Parliament and Council in February 2014. According to the European Commission document titled "An EU Strategy on adaptation to climate change" (2013), bilateral schemes such as that between Colombia and Spain designed to meet seasonally Catalonia's agricultural labour demand (de Moor, 2011) are important instruments in the context of adaptation to climate change. Our research instead calls for more caution, if the goal is not to simply reduce the costs of agricultural labour and secure consumer and agri-business needs by bringing in "reliant, flexible and compliant" labour (Hunt, 2014: 135), but to reduce also the vulnerability of those who depend on agriculture for their livelihood.

6. Conclusions

Towards the end of one of our interviews in March 2011, a seasonal worker asked another one who was answering our questions: "*so if you are happy with everything back in Şanlıurfa, why do you come here?*" The response to this rhetorical question was quite ironic: "*To experience a change of weather, a bit*" (Interview #19, 21.03.2011).

Seasonal workers are a vulnerable population, exposed continuously to the caprices of weather and now subject to permanent changes due to climate change. There has been very scant research on seasonal workers, their vulnerabilities and the policies that aim to adapt to an increasingly uncertain and changing climate. This paper, based on a case study from Turkey, shed light on how a state tries to respond to the vulnerabilities of seasonal workers, revealing the multiple ways in which adaptation throws up "governable and ungovernable spaces and subjects in the rough and tumble of the grand slam of capitalism" (Watts, 2003: 29).

In doing so, our study showed how adaptation to climatic contingencies might provide an entry point for extending biopolitical control. Contingencies, such as extreme weather events, provide ruptures where the previous invisibility of vulnerable populations can no longer be maintained. Nonetheless, biopolitical interventions secure the insertion and uninhibited continuation of the circulation of bodies into the political economy of agriculture. In that sense, state-led adaptive interventions ensure that the 'right things' are always in motion in the desired direction. Such interventions,

while effective at extending state control, fail to reduce the vulnerability of workers. A truly transformational adaptation requires a reconfiguration of the physical and social terrain that produces vulnerability to go beyond rhetoric. The policies and actions of the Turkish state ensure that seasonal workers are devoid of opportunities to develop and express new political imaginaries, have a voice on how they want to adapt, or how they see the agricultural system of the region adapting in ways that are beneficial to them too. In fact, ignoring such root causes, and creating a labour that is easily disposable when conditions change, allows the economy to adapt easier, albeit at the cost of the people. If our analysis is valid, then securing the future of seasonal workers in an increasingly uncertain world would require them ensuring access to a much larger bundle of social, political and economic entitlements. Nothing less than that would reduce their vulnerability.

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CHAPTER 4

Value-based adaptation to climate change and 'developmentalisms' in Turkish agriculture

"Of the value traps, the most widespread and pernicious is value rigidity. This is an inability to revalue what one sees because of commitment to previous values. In motorcycle maintenance, you must rediscover what you do as you go. Rigid values make this impossible."

Robert M. Pirsig,
Zen And The Art Of Motorcycle Maintenance: An Inquiry Into Values

Abstract

There is an increased recognition and attention on human values with respect to their role in shaping climate change adaptation policies. Furthermore, as the recent literature suggests, values held by policy stakeholders are centrally located in the debates linking climate change adaptation to development. However different understandings of adaptation tend to underlie these values, which often portray adaptation as a dichotomy of adjustment (incremental change) versus transformation. This study enquires the assumptions and values in adaptation policy by using Q-methodology and advances the potential of a value-based approach to adaptation policy. By exploring the narratives of 29 policy stakeholders who participated in the making of Turkey's climate change adaptation strategy, the analysis suggests that assumptions regarding growth, such as its inevitability and the dire necessity for growth-driven development agenda often shape adaptation concerns. Further analysis of the 4 emerging discourses (productivism, eco-localism, techno-managerialism and authoritarian) suggest that while discourses agree that the ultimate goal of adaptation is safeguarding a developmentalist vision of Turkish agriculture, they differ on the means and chief agents they consider necessary for reaching this goal. This divergence can enhance the transformative potential of adaptation by bringing 'how', 'for whom' and 'why' questions back to policy making.

Keywords: climate change adaptation, transformation, adjustment, Turkey, agriculture, Q-methodology

1. Introduction

Contemplating on the tangible action on climate change, Adam Corner writes “people work backwards from their values, filtering the facts according to their pre-existing beliefs” in his recent op-ed in the New Scientist (Corner, 2013). His argument suggests, “values, not just science, need to be central to the climate change debate“ and that we need to work across scales to understand which and whose values dominate climate debates. In a similar vein, the recently launched World Social Sciences Report claims that “understanding how values, attitudes, worldviews, beliefs and visions of the future influence system structure and processes is critical” in the context of global environmental change (Hackmann and Moser, 2013: 68). As it is becoming evidently clear from such accounts, research on human values and responses to global environmental challenges is of utmost importance in order to provide us with new tools to understand and evaluate the underlying assumptions of policy preferences.

This study explores the emerging notion of ‘value-based adaptation’ (O’Brien and Wolf, 2010) by considering the relevance of values for adaptation policy making. As such, it contributes to the research on social and cognitive limits to adaptation (Adger et al., 2009). Values here are understood as significance, which people subjectively employ for meaning making and for importance/priority setting. In an attempt to operationalize these subjectivities, I employ Q-methodology to investigate values that underlie climate change adaptation discourses. Situated within the context of adaptation policy in agriculture, this study explores shared discourses that emerge among 29 policy stakeholders of national climate change adaptation processes in Turkey. The article first presents the theoretical linkages between values and climate change adaptation as the basis of the value-based adaptation approach. This is followed by an empirical exercise that identifies adaptation discourses and extends work on value-based adaptation through a practical application in Turkey. Q-methodology exercise maps the cognitive terrain of the policy stakeholders who participated in the making of national adaptation strategy with an emphasis on their priorities and values around adaptation. The analysis identified 4 discourses. I argue that emerging discourses point at diverging notions of developmentalism underlying the Turkish climate change adaptation policy, in which development predominantly remains the ultimate goal of adaptation. Crucial however are the differences between those narratives, which indicate disagreements on the means (how is it to be achieved) of development and agency-related aspects (by whom).

2. Values and climate change adaptation governance

O'Neill et al. (2008: 12) posit that values can be apprehended as the various ways in which individuals, processes and places matter to us as well how we relate to and consider them in informing our actions. While values may refer to a wide set of concepts ranging from interests to preferences, from desires to aversions, they eventually constitute the core conceptions of 'the desirable' (O'Brien, 2009). These conceptions are often seen as "deeply rooted, abstract motivations that guide, justify and explain attitudes, norms, opinions and actions" (Schwartz, 2007). Despite multiple and often competing definitions, Schwartz (1994) has established an overarching categorization of human values that develops along two axes across a continuum: self-enhancing *vs.* self-transcendent and openness to change *vs.* conservation. Such clustering of values emerges from different motivational goals. For example while openness to change depicts values related to self-direction and stimulation (and hence creativity), the value cluster at its diagonal opposite emphasizes values around conservation as they relate to security, conformity and tradition. On the other axis, the self-transcendence cluster reflects universal and benevolent (i.e. altruism) value, while its opposite, self-enhancement, focuses on power (i.e. authority) and achievement (i.e. progress).

Values do not happen haphazardly, write O'Brien and Wolf (2010: 234), instead they are "organized into integrated, coherent structures or systems and linked to motivations" which drive our actions. In environmental decision-making, policy makers "are often faced, not with a clear cut decision between protection and damage but with the distribution of different kinds of damage and benefit across different dimensions of value" (O'Neill et al., 2008: 15). These different dimensions of value or competing values also manifest themselves clearly in climate change adaptation where confrontation of diverse values is particularly evident on what is perceived to be worth adapting and what is to be done collectively. Values, henceforth, constitute subjective determinants of limits to adaptation while also underpinning how and in what ways vulnerability is perceived (Wolf et al., 2013). Those limits shape the debate on uneven distribution of risks across time and space as well as between social groups. Therefore a great deal of interest in values within the adaptation literature stems from the debate on social limits to adaptation (Adger et al., 2009; Dow et al., 2013), which sees adaptation not only "simply about the changes in systems and behaviours required to reduce the negative impacts of climate change, but about the wider capacity of individuals and societies to respond to challenges to existing beliefs, values,

and worldviews" (O'Brien and Hochachka, 2010:2). An initial step in this direction would be to make values underlying adaptation preferences and decisions explicit (Adger et al., 2009).

Amongst other dimensions, adaptation also provides an opening for questioning the values that drive inequalities in development and human unsustainable affinity with the environment (Pelling, 2011). Therefore the surge in policy-relevant adaptation research can be attributed to the urgency and importance of perceived climate change risks on development policies (Basset and Fogelman, 2013). Nonetheless how policy stakeholders understand and subjectively shape adaptation through their discourses still remains a core question. Moreover this question is shadowed by the risk of uncritical discourses that may potentially lead to re-legitimization and repetition of old development practices (Ireland, 2012).

Discourses, in this context, refer to ways of seeing and talking about a particular topic (Barry and Proops, 1999). By their nature, discourses reflect individual and subjective positions referring to how individuals in particular circumstances and times conceptualize and relate to the subject of inquiry (ibid: 338). These positions are informed by values, often held in common as Schwartz's (1994) research demonstrates. Henceforth a questioning of adaptation not only as saving something that people perceive to be legitimate and worth preserving but also as a discussion of alternative futures is tempting (O'Brien and Wolf, 2010).

2.1. Value-based adaptation: transformation *versus* adjustment

As O'Brien (2009) explains "successful adaptation will depend on the capacity of individuals and societies to perceive and respond to a spectrum of legitimate values that extend beyond those that are relevant to oneself or one's group". In this regard, O'Brien and Wolf (2010) have conceptually developed a value-based approach to climate change adaptation that recognizes the importance of different conceptualizations of 'the desirable'. Value-based adaptation acknowledges that no single solution to climate change exists since value conflicts between actors are decisive in policy-making (O'Brien and Wolf, 2010: 235-236). Through its acknowledgement of the plurality of values and motivations behind adaptation decisions, it also inevitably brings distributive and procedural justice issues into the table (Paavola, 2008). What Pelling (2011: 88) identifies as missing, however, is "a cultural shift from seeing adaptation as managing the environment *out there* to learning to reorganize social and socio-ecological relationships, procedures and underlying values *in here*."

Adaptation, however, is often "a contested and painful process that may achieve human security gains for some but also put at risk the security of others" (Zografos et al., in press). In this sense, "adaptation strategies and actions can range from short-term coping to longer-term deeper transformations, aims to meet more than climate change goals alone, and may or may not succeed in moderating harm or exploiting beneficial opportunities" (Moser and Ekstrom, 2010: 22026). This observation reiterates that values in adaptation are not only about the scale at which interventions will be implemented but also on the ultimate goals of adaptation. Aligning with these often competing goals, two different constellations of adaptation emerge: (i) understanding adaptation as 'fitting *to*' the environment *versus* (ii) understanding adaptation as 'fitting *with*' the environment (Rickards and Howden, 2012). These two contrasting visions of adaptation correspond to "*adaptation to*" and "*adaptation of*" approaches (Thomsen et al., 2012). While the first of these approaches suggests a self-directed change for modifying internal characters of a system to better suit the external conditions, the latter seeks to modify external contexts and hence allow peripheral change to fit better the purposes of the existing predisposition of individuals or social groups. This cognitive split unavoidably leads to ontologically different adaptation pathways. Pelling (2011) categorizes adaptation pathways in three categories as resilience (maintaining status quo), transition (incremental change without a shift in system goals) and transformation (radical change in system goals). However in for the sake of this analysis, I group the first two under 'adjustment' and the third under 'transformation' mainly because both resilience and transition pathways discourage (or at best, avoid) a thorough questioning of system goals.

Transformation, in the context of adaptation, can be defined as the "physical and qualitative changes in form, structure and meaning-making" (O'Brien, 2012: 670). These changes can be identified as "a recognizable shift in the type of change occurring rather than introduction of change to a stable setting" (Rickards and Howden, 2012: 241). In line with this definition, transformation fits squarely with the self-transcending (i.e. altruistic) and openness-to-change cluster of values (Schwartz, 1994), which aim at going beyond the assumptions of the economic, political and cultural systems. These values often lead to active engagements with climate change (Corner et al., 2014), which occur at 3 nested-spheres: practical, political and personal (O'Brien and Sygna, 2013). The overarching personal sphere, which is also the unit of analysis here, "includes individual and collective beliefs, values and worldviews that shape the ways that the systems and structures are viewed, and influence what types of practical solutions are considered possible" (ibid: 19).

Conversely, adjustments or incremental changes operate to fit the conditions that give rise to social unrest in order to ease social tensions rather than remove their root causes. As such, adaptation as adjustment occurs when the ratio of what remains constant to what is changed deliberately remains high (Rickards and Howden, 2012: 242). Similar to transformation, adjustment is also value-laden particularly for seeking means to avoid radical change and accommodate changes within the existing system. Adjustments can be characterized by their emphasis on the conservation of the status quo (and hence the resilience of existing systems) as well as on the self-enhancement value cluster, which focuses on the importance of ambition, authority and power (Schwartz, 1994). For instance, literature suggests that the more people adhere to hierarchical and individual values, the more they are likely to downplay socio-ecological challenges (Corner et al., 2014). Thereby, while transformational processes aim to produce substantive changes in the goals/motivations of a system as well as spatial/contextual changes of its activities, processes of adjustment seek to contain these activities (*in-situ* or *ex-situ*) and maintain systemic goals relatively undisturbed.

Given how this transformation-adjustment duality plays out in adaptation policy, It is crucial to understand the cases in which barriers to anticipatory transformations might be daunting due to uncertainties, costs and institutional and behavioural barriers (Kates et al., 2012). Furthermore research on identification and positioning of values contribute to elucidate the "hidden assumptions and disparate uncertainties in climate change policy" (Eakin et al*.,* 2009: 224). In that sense, I believe that a study of values shaping adaptation decisions fulfils the academic responsibility to study the ways in which different interest groups produce and legitimize new political subjectivities on adaptation (Pelling, 2012). Consequently, the next section focuses on unearthing the different discourses of policy stakeholders of Turkey's national climate change adaptation strategy with an eye on agriculture.

3. Methodology

Q-methodology is increasingly applied in environmental social science to identify discourses in contemporary environmental decision-making (Ward, 2013; Lansing, 2013; Curry et al., 2013). Aiming at generalizing the characteristics of subjectivity on a particular topic, this methodology offers useful insights in analysing divergence and convergence of multiple discourses. In doing so, Q-methodology elicits patterns of opinion from its participants and works to synthesize them as ways of seeing and talking

about the subject of inquiry (Barry and Proops, 1999). Its strength lies in that it extracts ideal and shared forms of discourses hidden within the individual responses by matching patterns of knowledge and shared discourses across its participants (ibid.). Hence it establishes social discourses, which speak to each other rather than atomized sets of individual preferences. Q methodology does this through "a structured analysis of what sets of attitudes, values and beliefs combine to form coherent perspectives or discourses" (Davies and Hodge, 2007: 331) which bundle value and some non-value dimensions of preferences.

I followed the five-step process of Q-methodology, whose implementation[8] is described here. First, I extracted a set of statements (n=68*, 'concourse'*) from the semi-structured interviews with 7 policy stakeholders (all of them took part in the national adaptation strategy policy making process, 5 of them also produced Q-sorts afterwards) as well as from a detailed screening of official documents, reports and statements on adaptation in Turkey. A 6 x 2 matrix (**Table 4.1**) helped us to categorize these statements across 6 main themes in line with transformation-adjustment dichotomy (Eden et al., 2005: 417). The first 4 themes presented in the first column of this matrix were derived from Düşünceli et al.'s (2010) take on priorities of adaptation in Turkish agriculture as well as the agriculture section of National Climate Change Adaptation Strategy (MOEU, 2011). Scale and labour, however, were included as additional parameters to control for the scale of policy interventions and human dimensions. At the second stage, this exercise yielded us with a number of stand-alone representative statements (Q-set, n=30*,* see **Table 4.2**). Respondents positioned each statement in a -4 (strongly disagree) to +4 (strongly agree) scale in the Q-grid. After the participants completed Q-sorts by positioning the statements on the Q-grid, data was analysed using the PQMethod[9] software. The emerging discourses inevitably melded explicit reactions to normative value judgments with other complex judgments on priorities, which I present in the next section.

4. Case study: Exploring values in adaptation decision-making in Turkey

Often self-declared as a country highly vulnerable to climate change, Turkey has recently produced a "National Climate Change Adaptation

[8] For more information see e.g. Zografos (2007).

[9] version 2.33 (©) by Peter Schmolck.

Strategy" (MOEU, 2011). This strategy concludes "adaptation to the impacts of climate change should be one of the primary strategies of production-oriented policies in the agriculture sector in Turkey" (ibid: 68). Following this assertion, I gave a special attention to the participants of national consultations (undertaken in 11 cities across the country) on the agriculture-adaptation nexus. The respondents included experts, national and regional policy-makers, and other stakeholders, specifically: 2 from Ministry of Forestry and Hydraulic Works, 4 from Ministry of Environment and Urban Planning, 5 from Ministry of Food, Agriculture and Livestock, 1 from Ministry of Development, 3 from State Hydraulic Works, 8 from NGOs and think-tanks, 4 from international organizations and 2 academics. With 3 exceptions (respondents representing a farmers' union, an NGO working on agricultural workers, and the Turkish Via Campesina chapter respectively), all respondents have directly taken part in the national consultations on climate change adaptation in agriculture.

Themes	Transformation	Adjustment
Capacity building	1,2	3, 4
Conservation of natural resources	5, 6	7
Planning for development	8, 9, 10, 11	12, 13, 14
Use of advanced technologies to ensure efficient use of agricultural inputs	15, 16, 17	18, 19, 20
Scale of policies	21, 22	23, 24, 25, 26
Labour	27	28, 29, 30

Table 4.1 Selection matrix used for reducing the concourse

4.1. Data Analysis

In order to reduce the high correlations emerging between factors 1 and 2 (0.6075) and 1 and 3 (0.5983) after Principal Components Analysis and Varimax rotation, I preferred pure factor loadings. Eventually by considering its explanatory power of the variance I settled for a 4-factor solution, which explain 63% of the variance. Results are given in **Table 4.2**.

Statements	*Productivism (F1)*	*Eco-localism (F2)*	*Techno-managerialism (F3)*	*Authoritarian (F4)*
Institutions that develop adaptation policy in Turkey are knowledgeable about varying vulnerabilities across regions, agricultural basins, sectors and social groups.	-3	-3		
Capacity building measures on job diversification, direct income support and agricultural subsidies provide protective and preventative measures against climate change risks.	+3		0(*)	
There is no need for additional institutions in Turkey for planning and coordinating adaptation			-1(**)	+3(*)
What is to be done to adapt to climate change is a technical issue that requires specialized expertise.			+3	+4
Since adaptation planning in agriculture is done in a participatory manner, there are uncertainties and delays in implementation of these plans by the producers.	-3		0(*)	
The most important adaptive measure is the one taken by small producers who are trying to reproduce nature with their traditional production patterns and knowledge.		+4(**)		
Good agricultural practices in line with EU-acquis are effective practices that contribute to climate change adaptation while protecting ecosystems.		0(**)		
Regional socio-economic differences are taken into consideration in the climate		-4	-4	+3

change adaptation strategy in terms of planned interventions and funding available.				
Adaptation requires serious societal transformation that can cause social unrest such as mass migration.	-3	+2(**)	-3	0(**)
Municipal administrations are indispensable in climate change adaptation in order to address local needs.		+3(*)	0(*)	
The state is developing policies against maladaptation to avoid the potential negative consequences of adaptation on some groups.				
Turkey's climate change policy is proactive on the surface and reactive in essence.				
The objective of adaptation projects should be to align Turkey with international agreements and fulfil its commitments.	-4		-3	
Development concerns shall precede adaptation policy in Turkey.		-2(*)		-4(**)
Priority of adaptation to climate change in Turkey should be water management in agriculture.	+3	+3	+4(**)	
A widespread use of advanced agricultural technologies will remove vulnerabilities to climate change.			+1(**)	-3
Adaptation is about how we use our energy, how we do our agriculture, and how we plan urbanization.	+4		+2(*)	0(*)
Use of new irrigation technologies, hybrid seeds and greenhouses are the most feasible climate change adaptation strategies in Turkey.		-3(**)	+3	

Agricultural adaptation policy must increase agricultural productivity by focusing on comparative advantage of different basins.	+4(**)			-2(**)
Land consolidation, transition to pressurized irrigation systems and reduction of rural population are the most important steps in adapting to climate change.				-4(**)
If marginalized groups such as small landholding farmers and seasonal workers were to participate in adaptation policymaking, their priority would not have been future climate change risks.				
While determining adaptive measures for climate change risks those, which are most cost-efficient for the state such as agricultural insurance, should be preferred.				
Radical transformation of the current social system is not required to adapt to climate change.				-3(*)
Social justice concerns are well embedded in adaptation policy in agriculture in Turkey at all levels (local – regional - national).	-4	-4	-3	
Demand-side priorities of agricultural markets and adaptive needs of farmers are compatible.		-3		
In order for adaptation to be successful, it should be planned and implemented and monitored by the state.	+3	+3		+4
The most important step of adaptation to climate change in Turkey is the shift from labour-intensive agriculture to technology-intensive agriculture.			+2(**)	

Public health concerns reflected in climate change adaptation in Turkey aim at keeping a healthy and cheap agricultural labour force.			-4(**)	
Widespread use of modern agricultural and irrigation practices in Turkey will decrease labour costs.			+3(*)	
Social security coverage is an important adaptation measure for the people in labour-intensive agriculture.				

Table 4.2 Salient statements for all four factors (* indicates significance at P< 0.05; ** indicates significance at P< 0.01)

4.2. Emerging discourses

Factor 1: "Productivism"

The first emerging discourse focuses on agricultural productivity. Accounting for 22% of the variance, this discourse suggests that adaptation should focus on safeguarding economic interests in agriculture and thus favours incremental change. Maintaining and enhancing productivity is set as the main goal of adaptation interventions under the danger of declining returns (S19 at +4). It identifies water management as the key priority and therefore prioritizes adaptive interventions in this domain (S[10]15 at +3).

This discourse acknowledges that adaptation is about planning and coordinating rural-urban connections in agriculture (S17 at +4) by pointing at the central state as the protagonist of adaptation (S26 at +3).

> "We should find the most suitable patterns of production geographically so that geographical imbalance in development levels [across regions] would disappear." (Participant #17, Head of department, Ministry of Food, Agriculture and Livestock)

This discourse does not limit adaptation to infrastructural interventions as demonstrated by its attention on job diversification and agricultural subsidies (S2 at +3). Nonetheless productivism approaches the role of the state with a grain of salt: it is concerned that institutions which develop

[10] "S" stands for "statement". i.e. S15+3 refers to statement '15' placed in box '+3'. Double asterisc (**) refer to distinguishing statements.

adaptive policies are often uninformed or under-informed about the varying vulnerabilities across sectors, geographies and social groups (S1 at -3). As such it attaches a prominence to democratic participation in decision-making and associates itself strongly with the conviction that there is little to no social justice in the current spectrum of adaption policies (S5 at -3; S24 at -4). This discourse refuses viability of top-down policies while at the same time rejecting the need for an overall societal change for adaptation (S9 at -3). Overall, it represents an optimist vision of adaptation, in which the state and society act together for their own good; not for the sake of fulfilling international commitments but to ensure prosperity from within (S13 at -4).

> "I believe international agreements are tough on Turkey, expecting from us what developed countries do not do. We also would like to have a perfect adaptation but we have other priorities as a developing country" (Participant #14, expert at State Hydraulic Works)

Factor 2: "Eco-localism"

The second emerging discourse preaches that *small and local are beautiful* (S6 at +4). In doing so, it separates itself from the others with its transformative vision. Eco-localism maintains a focus on traditional peasant agriculture as an adaptive measure in line with Via Campesina's approach on prioritizing small and middle-scale producers, landless peasants and rural women.

Main characteristics of this discourse include its indecisiveness about the role of EU accession process in adaptation (S7 at 0), a strong opposition against agricultural modernization and a preference of traditional peasant agriculture with local seeds, varieties and traditional techniques over technology and capital-intensive techniques (S18 at -3; S6 +4). While Turkey is a centrally governed state to a large extent, increasingly more demands for decentralized governance in political, economic and environmental terms are raised. In that terms although identifying the state as a key actor in terms of planning, implementing and monitoring (S26 at +3); eco-localism puts a particular emphasis on the role of local administrations for adaptation governance (S10 at +3).

> "Local authorities shall plan locally in accordance with the local needs. In order to do that they should be well informed about agriculture, industry and the local population. Their needs [for food-water] shall be determined and local authorities should take part in adaptation by planning the limits of adaptation" (Participant #14, expert at State Hydraulic Works)

Eco-localist discourse rejects the view that national development concerns precedes the adaptation policy in Turkey (S14 at -2). Consequently, it boldly underlines the incompatibility of a markets-driven adaptation strategy with the needs of farmers (S25 at -3). It also suggests that state institutions are at best under-informed about varying vulnerabilities and do not act on differential vulnerabilities arising due to regional socio-economic differences (S1 at -3; S8 at -4).

> "Central planning authorities are not informed about the needs of the local [regions] just as it is the case in energy production. Thus local authorities should participate democratically in adaptation planning in line with the needs of their local populations" (Participant #15, expert from an NGO)

By underlining the need for democracy and participation, this discourse strongly challenges social justice claims in the adaptation policy (S24 at -4). Its transformative character becomes more evident by its acknowledgment that adaptation is more than a state policy or a technocratic intervention. Adaptation, in this narrative, requires a societal transformation that may shake the fault lines of today's agricultural economy (S9 at +2).

Factor 3: *"*Techno-managerialism*"*

The third discourse, which is probably the most intricate one, demonstrates convoluted adjustment and transformation characteristics. This discourse considers agricultural modernization and expert-led adaptation as the optimal adaptive strategy (S4 at +3; S29 at +3) and therefore named as the techno-managerial vision. Techno-managerial discourse points at water management and agricultural modernization as the key to adaptation (S15 at +4). In that sense, it resonates strongly with Turkish state tradition particularly in public works, hydraulic works and development planning domains, which have been breeding grounds for key developmentalist political figures in the republican history (Harris, 2012).

In line with agricultural modernization discourses, techno-managerialism calls for a shift from labour-intensive agriculture to technology/capital-led agriculture (S27 at +2). As such, it recognizes agricultural intensification as an adaptive measure (S18 at +3). However the dividing line of this discourse from productivism appears in its unparalleled belief in technology as a one-stop shop solution for reducing vulnerabilities and boosting economic activity (S16 at +1). With its emphasis on expert-rule and market-driven approach, this discourse reflects typical views of an expert overlooking from its office in a high-rise in Ankara: a perspective which sees a terrain with vast opportunities for development, an developing nation which is

thirsty for more and a vanguard role for itself while looking over the Turkish territory.

> "We have to use advanced technology since it brings rise in the quality of production and removed the need for cheap labour and hence exploitation. Technological improvement will not only bring rapidity and efficiency but will also provide skilled labour" (Participant #29, academic)

This discourse remains optimist by rejecting the need for all-out societal transformation despite acknowledging an absence of social justice (S9 at -3). It also opposes the argument that adaptive interventions contribute to cheap labour (S28 at -4; i.e. for biopolitical interventions that seek to make poor populations resilient to climate change see also Evans and Reid, 2013). Another key division between this narrative and the productivist one is the former's ambivalence on local level governance. Techno-managerial discourse differs precisely because it is indecisive whether centralized or decentralized adaptation governance should be preferred (S10 at 0). Thus the relevance of local governments and planning across scales emerge as a matter of concern. Finally to set an institutional ground for its priorities, techno-managerialism favours creation of new crosscutting institutions to deal with adaptation challenges in agriculture albeit not very strongly (S3 at -1).

Factor 4: *"*Authoritarian management*"*

The final discourse emerging from the data can be identified with its full confidence in authoritarian state-led adaptation interventions. This discourse, I argue, demonstrates traces of both adjusting and transformative approaches. By maintaining a strong faith in the state policies and a *will to improve* akin to the techno-managerial vision (S4 at +4, S26 at +4), it considers current configuration of the state as relevant and sufficient in contrast with the enhanced engagement of techno-managerialism with markets and local governments.

> "Adaptation is a topic of state policy par excellence. State has to include different sectors and themes in its adaptation policy. Supporting adaptation initiatives through economic subventions and financial tools makes these sectors sustainable." (Participant #6, consultant)

> "State should take the lead in adaptation policies since it requires careful planning, implementation and monitoring. I wished local institutions were equipped enough for this but for the moment, the state has the biggest capacity" (Participant #26, civil society)

Authoritarian discourse is confident that the state retains knowledge on differential vulnerabilities of its citizens and geography (S8 at +3). In contrast

with the techno-managerial discourse, it does not single out technological improvements and modernization. As such, it strongly rejects the idea of depopulating the rural areas in favour of a transition to capital-intensive agriculture, probably due to political reasons (S19 at -2; S20 at -4). However it doesn't quickly rule out the need for societal transformation (S9 at 0). I argue this transformative insight differs from those presented in eco-localist discourse as per its goals and means to achieve those goals. It signals at an authoritarian turn (as opposed to democratic engagement) in agricultural planning.

> "No matter what the state does, people decide on what they want to produce in a democratic context. We, as the state, try to steer people's decisions with subsidies and crop support but this is not sufficient. No matter how hard you try with these tools, it is not possible to convince the producers […] however now with what we call as the 'agricultural basin model', producers will know which crop is the most strategic, the most suitable for their regions. We want production of those [resistant] varieties." (Participant #18, Head of Department at Ministry of Food, Agriculture and Livestock)

Authoritarian discourse remains unsure whether adaptation is linked to the way in which we use energy, plan urbanization and eventually do agriculture (S17 at 0). It also shows certain distrust in the advanced agricultural technologies for removing social vulnerabilities (S16 at -3). While it envisions development as something necessary and desirable (and possibly unavoidable), it is highly reactive to comments that development concerns precede adaptation policy in Turkey (S14 at -4). This, I argue, is due to the reactionary nature of authoritarian statist narrative against any claims that blame the state for sacrificing environment. Therefore it acts in a rather protective and conservative way by trying to safeguard the existing practices. From this gaze, it is the state-led development itself (S3 at +3), which is most likely to help the population to adapt to future challenges manifested through climate change. Hence it tries to strike a balance such that no conflict of interest arises between development and adaptation.

> "Development paradigm is changing and climate is an important parameter in the new paradigm. If institutions of sustainable development is to be consolidated, a process independent of adaptation is impossible" (Participant #24, expert at Ministry of Environment and Urbanization)

Consensus statements

All 4 discourses identify the state as the protagonist while there are nuances in their understanding (see **Table 4.3**). Particularly, eco-localism and techno-manageralism put significant emphasis on the role of local governments (i.e. municipal, provincial) vis-à-vis central government. A key

consensus between all discourses appears on the lack of state policies in preventing maladaptation; implying potentially differentiated consequences of adaptation are yet to be tackled (Barnett and O'Neill, 2010).

No.	Statement	Productivism (F1)	Eco-localism (F2)	Techno-managerialism (F3)	Authoritarian (F4)
11**	The state is developing policies against maladaptation to avoid the potential negative consequences of adaptation on some groups.	-2	-1	-2	-1
22*	While determining adaptive measures for climate change risks those, which are most cost-efficient for the state such as agricultural insurance, should be preferred.	0	1	0	1
25*	Demand-side priorities of agricultural markets and adaptive needs of farmers are compatible.	-2	-3	-1	-1
26**	In order for adaptation to be successful, it should be planned and implemented and monitored by the state.	3	3	4	4
30**	Social security coverage is an important adaptation measure for the people in labour-intensive agriculture	1	1	1	1

Table 4.3 Consensus statements (* indicates significance at P< 0.05; ** indicates significance at P< 0.01)

5. Discussion

5.1. Divergent developmentalism(s): Key topics of confrontation

Brown (2011) observes that 3 main nodes link adaptation to development. These nodes are identified by (a) how adaptation is framed, (b) how it is linked to broader development and poverty alleviation goals and (c) whether it challenges the dominant ideas and practice of development. Despite their agreement on a developmentalist agenda, four discourses here diverge in their answers. I suggest that while 3 out of 4 discourses (i.e. with the exception of eco-localism) represent adjustment approach in adaptation by maintaining development as the goal, they have different approaches on

how to achieve development. This divergence hints at a potential value conflict in policymaking in Turkey as far as the means (on how to achieve the desired ends) and the agency (of who will take responsibility) are concerned. As O'Brien and Wolf (2010: 235) observe, value conflicts reframe climate change debate beyond the resource scarcity-conflict nexus and incorporate "questions of why climate change matters, to whom, who wins, who loses, and whose values count". This is particularly important for drafting and implementing adaptive policies.

The first example of this value conflict appears between the productivist and techno-managerial discourses. While both discourses focus on the vulnerability of agricultural production (rather than the socio-economic system) and prioritize actions in this domain, productivism prefers a strong regulatory institution that is the central state. Techno-managerialism, contrarily, approaches adaptation as a cross-scale management issue including decentralized initiatives. Productivism suggests that one of the key concerns of adaptation is to increase agricultural productivity by focusing on comparative advantages of different agricultural basins whereas techno-managerialism does not single out productivity as the unique indicator. It is rather interested in modernization and potentially depopulation of the countryside. Nonetheless both are well positioned to support a national developmentalist agenda with no particular emphasis on international commitments.

The second example of the developmentalist divergence can be observed between techno-managerial and authoritarian discourses. Although both agree that adaptation is a technical matter requiring technocratic interventions, they differ as *where* to find this expertise. Whereas techno-managerialism is looking at markets and technical (possibly foreign) experts to find the solutions, authoritarian discourse appears confident that the current configuration of the state holds the key to a successful adaptation in agriculture. Therefore they clearly disagree whether the state retains necessary and adequate information on vulnerabilities. In the overall, I observe that authoritarian discourse demonstrates an understanding of adaptation as resilience, which supports the continuation of existing and desired system functions into the future (Pelling, 2012). Techno-managerialism, in contrast, calls for incremental change (i.e. transition) and hence does not explicitly aim at the protection of the status quo as such although both remain within the limits of adjustment.

5.2. The low-hanging fruit: development as adaptation

As Manuel-Navarrete et al. (2011: 250) assert, "characterizing prevailing development visions is important for adaptation not only because they legitimize governance structures and shape response to hazards, but also because development influences the very conditions of vulnerability". Hence the developmentalism inherent to the adaptation narratives presented here can also be linked to Turkey's economic growth. For example, Gürkaynak and Sayek-Böke's (2013) analysis succinctly demonstrates that the construction sector had been the driver of Turkey's economy in the last 12 years with its adverse environmental impacts well recorded (Balaban, 2012). As such, respondents' emphasis on urbanization in adaptation policy is elucidating although the focus was on agriculture.

> "[Adaptation] is all about correct planning of energy, agriculture and urbanization" (Participant #14, expert at State Hydraulic Works)

> "Urbanization is not only building high-rise buildings, it is also about use of water/electricity, agricultural inputs and energy. Growth should be well-planned" (Participant #32, expert at agricultural think tank)

> "Turkey's urbanization planning, environmental strategy and plans all include adaptation. The ministry is running these processes parallel to urbanization" (Participant #19, head of department at Ministry of Environment and Urban Planning)

> "For example urbanization includes green buildings, adaptable to climatic conditions. Equal attention should also be given to agriculture" (Participant #23, expert at Ministry of Environment and Urbanization)

The fact that various respondents linked adaptation with a controversial centrepiece of Turkish development policy, namely urbanization, although this was not listed among the statements in the concourse shows how developmentalism permeates adaptation. As Pelling (2012) suggests, most practical work on adaptation tends to focus on addressing low hanging fruits such as infrastructure planning and livelihood management rather than following a truly transformative approach to adaptation and look beyond management of existing development initiatives by targeting the dominant political-cultural regime. While adaptation provides an opportunity to reconsider development practices, so far the contradictions that arise due one-sided focus on development are far less scrutinized (Milman and Arsano, in press). Bearing this in mind, it is crucially important to establish reflexive formal policy mechanisms, which acknowledge the competing values (such as that of eco-localism) and go beyond the low-hanging fruits in adaptation

governance. In contrast, most discourses prefer short-term, partial remedies since these better serve their value priorities (Pelling et al., 2012).

5.3. Instrumentalizing adaptation

The findings of this study mark a certain trend in which adaptation is instrumentalized and mainstreamed in development policies. Discourses presented here all fail to challenge the exclusive prioritization of development as adaptation except for eco-localism. While adaptation mainstreaming in Turkey is perceived as a win-win opportunity often such understandings render adaptation as "something to be tackled onto development rather than being an integral part of it" (Ayers and Dodman, 2010: 164). As such, discourses here demonstrate an unquestioned belief in the growth-driven development agenda when it comes to adaptation.

Insofar as adaptation is concerned, consensus hints at which policies are perceived to be legitimate and likely to be accepted. A summary of consensus statements reveals that:

(a) the state is the most important actor through which adaptation should be implemented;

(b) however state-led adaptation approaches

(i) do little to acknowledge maladaptation with adverse impacts on some social groups

(ii) need to consider social security as an adaptive strategy;

This consensus indicates a dominant narrative, which squarely fits the debate on adaptation as adjustment (including both its incremental change and system resilience-centred manifestations). According to this paradigm, development is the way to tackle climate change by focusing on i) an increase in production, ii) technological modernization and iii) top-down measures. National adaptation strategy (MOEU, 2011: 27-28) identifies three main factors, which cause lag and uncertainty in the Turkey's adaptation approach: a) the refusal to accept or understand the existence of a series of maladaptive policies, b) the insufficient cooperation among public institutions and c) insufficient institutional and technical capacity. I argue that these shortcomings reflect on the discourses identified here. They demonstrate the disagreement on the role and capacity of the state as evident between techno-managerialism and authoritarian management as well as the consensus on lack of policies to tackle maladaptation.

Arsel (2012) argues that the *'how'* dimension of development has largely withered away under state-mediated neoliberal developmentalism in Turkey. Although I side with his observation, I suggest that the results here indicate that differing views (discourses) on adaptation policy bring back this *'how'* dimension as per the means and agency in adaptation. This is because the discourses on adaptation here presented differ from each other as regards the means of reaching the ultimate goal of development (i.e. authoritarian management stick to status quo while both productivism and techno-managerialism ask more engagement with markets and agricultural modernization) and support competing protagonists (i.e. the central state vs. local authority) for achieving this project. The re-emergence of a debate about the "*how*" of developmentalism in Turkey, which I observe through the differing narratives on adaptation, implies a challenging task for developing adaptation policy but also an opportunity to improve the democratic quality of adaptation governance through value inclusion.

Over-reliance on expert knowledge and progress fetishism risks rendering adaptation as a technical challenge and effectively as a nonpolitical process (Murray Li, 2007). Unearthing plural values and discourses of adaptation and vulnerability tries to counter this as value pluralism paves the way to inclusiveness in decision-making. This can be a main pillar of a transformative vision: a vision in which diverse values around adaptation can be formally expressed in decision-making. Nonetheless, critics argue that putting sole emphasis on inclusiveness, as the solution to the current technocratic nature of adaptation is problematic. Such visions of adaptation often underestimate the possibilities for radical socio-political change and instead reduce it to incremental changes the limits of which are defined by the status quo (Manuel-Navarrete et al., 2011).

Meanwhile a transformative view of adaptation questions the main assumptions on 'the ultimate goal of adaptation', development often serves as a cohesive element that binds social groups by pointing at a direction for society (Manuel-Navarrete et al., 2011: 250). However a clash of opposing collective images of social order can therefore give rise to alternative paths of development (Cox, 1981:136). In this sense, the challenge for policymakers in Turkey is one of creating an agenda of 'reflexive developmentalism' (Pieterse, 1998), which would reconsider the importance of economic growth while seeking environmentally sound practices and social justice (Arsel, 2005). Such a process does not only require bringing back the "*how*" dimension to development policies but will also lead to an informed discussion on "*for whom*" and "*why"* keeping in mind the institutional inertia in Turkey. Only insofar as institutions establish formal political arenas for value negotiation

adaptation governance may be able to address the key challenge of advancing “strategies that acknowledge and address a spectrum of values” (O’Brien, 2009: 177).

6. Conclusion

A focus on values in adaptation decision-making processes opens a refreshing path for identifying the underlying assumptions of policies as well as the subjective limits of adaptation. Q-methodology, which I employed here to elucidate values and discourses, not only proves useful in opening up ostensibly cognitive “black boxes” but may also serve well the purpose of developing insights about reflexive institutional arrangements (Hajer, 1997). Through identifying 4 emerging discourses around adaptation policies in agriculture, this study revealed that adaptation in Turkey is a hotbed of divergent developmentalisms. Nevertheless, we need to be mindful that developmentalisms have “consistently failed to challenge the imaginary of development that has made the world in a limited (and limiting) range of ways” (Ilcan and Phillips, 2010: 846). In that sense opening up formal spaces of negotiation and contestation on adaptation priorities and values should be encouraged in order to achieve legitimate and robust climate change adaptation governance.

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CHAPTER 5

Synthesis and Conclusions

"To be hopeful in bad times is not just foolishly romantic. It is based on the fact that human history is a history not only of cruelty, but also of compassion, sacrifice, courage [and] kindness."

Howard Zinn

1. Overview of Empirical Findings

> "Three-quarters of the world's poor live in rural areas, where agricultural workers suffer the highest prevalence of poverty. They are caught in intractable cycles of low productivity, seasonal unemployment, and low wages, and are particularly vulnerable to changing weather patterns."
>
> (UNDP, 2014: 3)

This thesis has so far presented three main arguments regarding the interaction of vulnerabilities, state-led interventions, and discourses underlying existing adaptation policies, based on its empirical findings. I will now revisit these main arguments before fitting them into the larger debate on adaptation, labour-intensive agriculture, seasonal migration, and development. The first argument expounded on here suggests power asymmetries constitute the baseline of vulnerabilities and are often downplayed when proposing technical fixes to current and future problems posed by the complex overlap of climate change and economic structuring in the labour-intensive agricultural sector. The main findings of the first empirical chapter (see **Chapter Two**) point to the increasingly commonplace practice of *socio-ecological cost-shifting* in the name of climate change adaptation. This is particularly relevant not only for the adaptation policies in labour-intensive agricultural regions heavily dependent on migrant seasonal labour, but also for social policies affecting seasonal workers elsewhere (Hoggart and Mendoza, 1999; Luna, 2014), which claim to provide safety nets for the most vulnerable. Uneven power relations allow more powerful groups to shift the costs and risks of climatic and market uncertainties onto those who are at the lower end of power relations—seasonal workers in this specific case. State-led adaptation policies, which prioritize production, optimization, and maximization, facilitate this shift. I argue that the main problem of such adaptive policy interventions resides in an oversimplification of power asymmetries, which eventually leads to framing diverse social groups in labour-intensive agriculture as a homogeneous vulnerable group.

The second argument this thesis has put forward suggests that, regardless of their intentions, state-led adaptation policies often fail to address the most critical issues that exacerbate vulnerability, such as social power imbalances, market-driven political economy, and structural inequity (see **Chapter Three**). As climatic risks and economic stressors act both simultaneously and sequentially on socio-ecological systems, policies often

opt for shortcuts, which only fix the system so as to maintain structural system goals in place. I claim that these shortcuts are frequently crafted as biopolitics, with the goal of keeping vulnerability manageable, thereby maintaining the capital accumulation project. In accordance with this approach, those who are exposed to risks are often blamed for their exposure, even if such these very exposures arise from the circumstances beyond their control (Casper and Moore, 2009). Therefore, even while less powerful segments of society are blamed, or at best victimized, for exposure to changes beyond their control, certain risks beyond the control of these populations provide an opportunity for the state to intervene. Such interventions often include practices that enhance the legibility of populations. Scott (1998), in his influential work on *Seeing Like A State*, argues that states simplify certain characteristics of populations to produce particular types of knowledge in order to better control them as well as the territories they inhabit. As such, simplification by the state creates a depiction of reality that serves the purposes of the state (directly related to the existing dominant politico-economic paradigm). Moreover, as Scott (ibid: 3) comments, when allied with state power, simplifications allow for reality to be altered (like, for example, the social construction of seasonal workers as nomadic groups). The findings from the second empirical chapter of this thesis confirm that contingencies, such as extreme climatic events, market shocks etc., provide ruptures where the vulnerable condition of certain social groups can no longer be maintained. In such instances, *biopolitical interventions* (which serve to promote self-adaptable, resilient subjects by simplifying their vulnerabilities to a portion of them) secure the insertion and uninhibited continuation of the circulation of bodies into the political economy of labour-intensive agriculture.

The third and final argument extended here zooms out to focus on convergences and divergences in discourses and values of national adaptation policy in labour-intensive agriculture in Turkey. This chapter attends to human values and their role in shaping climate change adaptation policies (see **Chapter Four**). As recent interest in the effect of values and worldviews on adaptive responses suggests, values are central to the adaptation-development nexus. However, different understandings of adaptation and development are often behind these values, which portray *adaptation as a dichotomy between adjustment (incremental change) and transformation (radical/marginal change)*. The outcome of this analysis suggests national adaptation policy stakeholders in Turkey share the same assumptions about the lead role of the state in adaptation, the significance of markets in facilitating adaptation, the inevitably and desirability of economic growth, and the ultimate usefulness of technocratic responses to socio-ecological problems. This dominant outlook coexists with (if not reproduces)

practices that endeavour to maintain profit with double exposures and policies, which safeguard labour circulation and, consequently, capital accumulation. Nonetheless, out of the four narratives emerging from this study, the outlier (eco-localist discourse) portrays an alternative future scenario in which adaptation involves a societal transformation, one which does not only address present-day vulnerabilities but also meets the long-term challenges of social inequities.

I would like to argue that overall, the findings of the three studies presented here hint at a possible construction, or reconstruction, of a political space for the crucial debate on 'how to do development' in Turkey. This debate, which is increasingly foreclosed by the dominance of authoritarian neo-liberal policies, can revive via a discussion of adaptation alternatives. Such a discussion will require an articulation of radically different, "conflicting and alternative trajectories of future socio-environmental possibilities" (Swyngedouw, 2010: 229) insofar as the means, the agents, and the goals of development are concerned. It is important to recognise that, while developmentalism is composed of the aspirations, desires, values, and worldviews of its subjects, it is also created through the agency of its subjects. Subjects are not necessarily passive recipients of the developmentalist discourse; rather they are active agents in the perpetuation of speech-acts, discourses that have operational functions, and praxis like we have previously seen in Chapter Four. Policy actors construct divergent forms of developmentalism: (almost) all aligned towards an unquestioned belief in linear progress, although through different means, and with different protagonists. Disagreement, then, over "what kind of a future we want" can indeed be quite fruitful, as long as there are legitimate avenues of political expression and self-reflection. Only such avenues can provide ruptures, which may help divert from post-political technocratic management and consensual policy-making in adaptation (ibid.). Next, I will try to fit these arguments into the broader picture.

2. Synthesis of Empirical Findings

Hartmann (2010: 242) poses the following key critical question in her discussion of alternative futures that are the result of our decisions in the Anthropocene: "Might the challenge of climate change provide an opportunity to rethink the meaning of development and economic growth in ways that promote redistribution of power and wealth while simultaneously protecting the environment?" Other scholars, like Pelling (2011: 3), suggest that not only the scale, speed, and extent of threats —emanating from climate change and our will to mitigate them—, but also our adaptive responses, provide a window

of opportunity for social reform through "questioning of values that drive inequalities in development and our unsustainable relationship with the environment." In an attempt to question adaptive interventions in labour-intensive agriculture and investigate how they are linked to developmentalist narratives, this thesis provides some insight into the role and agency of seasonal workers in the adaptation-development nexus.

Empirical findings of this thesis fit squarely with Pelling's (2011: 3) observation on the nature of adaptation, which suggests:

> "adaptation is a social and political act; one intimately linked to contemporary, and with the possibility for re-shaping future, power relations in society. But it also recognises that different actors perceive contrasting roles for adaptation."

By investigating this social and political act, this research also highlights the interventions perpetuated in the name of adaptation, which indeed safeguard the existing socioeconomic status quo. This safeguarding is achieved in two principal ways: a) by shifting the social, physical, and monetary costs of adaptation onto vulnerable social groups, and b) by establishing governance mechanisms, which design and operationalize processes inductive to the continuation of capital accumulation. In order to maintain the profit margin in place in the face of surmounting risks, these governance mechanisms promote the self-reliance and self-adaptability of populations through biopolitical interventions. In doing so, they wilfully comprise incremental adjustments (be it in resilience or transitional forms), aimed at mitigating imminent threats to the socio-ecological system in question while not steering the overall system away from a collision course (Pelling, 2011: 33). In other words, the adaptive interventions exemplified throughout this research cater to protection and reproduction of the social structures that are insecure by design.

Yet adaptation is not only part of a domain of policy and action, but also a wider epistemological interest, which operates across spatial and temporal boundaries. While formal policies often depict adaptation as a technical, rational, and manageable process, adaptation necessitates multi-scalar, multi-actor, and multi-temporal action (Conway and Mustellin, 2014). So adaptation today and adaptation tomorrow will necessarily differ from one another, not only politically and economically, but also socially and culturally, given the never-ending social change human societies experience. A comprehensive understanding of existing vulnerabilities, their root causes, and necessary steps to reduce them will therefore be crucial for adaptation. This calls for extensive social mobilization. Jerneck (2013) suggests that a 'mobilizing narrative' for action on climate change will encompass three main

dimensions. These dimensions do not only theoretically inform us of the challenges of adaptation, but also serve as practical toolboxes to pinpoint entry points for a sound praxis on adaptation. Jerneck (ibid.) identifies these three key dimensions as ***distribution, diversity,*** and ***direction***.

The first of these dimensions, *distribution*, acknowledges the material aspects of vulnerability by encompassing both class relations and power asymmetries across dividing lines in ethnic, gender, race, and caste relations. A multi-scalar and multi-temporal focus on adaptation cannot ignore the broader political and economic interests embedded in the spaces of agricultural production. While poverty and persistent/structural inequalities appear among the most salient conditions giving rise to vulnerability, it is important not to conflate poverty with vulnerability (Ribot, 2013: 175). In this sense, adaptive interventions shall seek to address the problems and not the symptoms. This also includes casting a critical eye on the romanticization of autonomous coping and adaptive strategies of poor people in the face of climatic stimuli. For example, Tschakert's (2014: 748) cases of low-caste Nepali women dropping out of school "to curtail their own adaptive potential", or Tanzanian women joining the ranks of wage labour markets during droughts in order to adapt, shall be taken with a grain of salt. Such self-reliance on individualized adaptive capacity does not offer prospects for a comprehensive social transformation, but on the contrary iterates an acceptance of structural conditions giving way to vulnerability. In this sense, poverty in relation to adaptation shall be considered as intersecting with other aspects of social exclusion (including gender, race, ethnicity, class, and caste), which reinforce existing vulnerabilities and/or lead to new ones (Leichenko and Silva, 2014). Standing at this junction, socio-ecological cost-shifting acts as an enabling condition for capital accumulation (see Chapter Two). Such cost-shifting practices make power asymmetries and distributional issues explicit, particularly when they emerge under climatic contingencies. As I have demonstrated previously, these climatic contingencies (as well as future climate scenarios and associated socioeconomic risks) do not simply play into the hands of landowners at the cost of seasonal workers in the lower Seyhan basin. Rather, there is a facilitation role played by the state, through its law enforcement and regulatory agencies, in order to fend off risks of capital accumulation through labour-intensive agricultural production. In this sense, adaptation interventions implemented serve to maintain 'the development project.' As McMichael (2009b: 248) underlines, the ultimate goal of the global development project is "to sustain energy, capital, and commodity flows for purposes of military and political security." One has to include labour flows in this picture. Indeed, rather than a flow (which suggests one-way movement), the development project is seemingly more inclined

towards sustaining 'circulation,' as I have outlined in Chapter Three. In this sense recent emphasis on 'circular and temporary migration schemes,' which particularly caters to the agricultural labour deficit in market-driven horticultural economies (Gertel and Sippel, 2014) confirms the findings of this research.

Diversity, as the second dimension of a 'mobilizing narrative', refers to inclusiveness, deliberation, and participation in decision-making related to adaptation matters. This narrative focuses on the added value of pluralism and emphasizes collective action. For the most mainstream development thinkers, climate change "re-enforces the need to do development better, more effectively, and within an emphasis on shifting vulnerabilities and how they reconfigure the distribution of costs and benefits within the society" (Brown, 2012: 46). Nonetheless, a key issue in an era of climate change is to avoid pitfalls, which replicate existing uneven socioeconomic structures, but in new guises. In his study on the discourses of development practitioners, Ireland (2012) found out that some of the actions proposed under the banner of 'adaptation' were indeed driven by an existing and continuing imperative for a certain type of development, rather than responding to newly emerging challenges specific to climate change. Such actions often repeat, strengthen, and perpetuate existing practices that led to vulnerability in the first place. This observation is also confirmed through this research with the relative insignificance of 'eco-localist discourse' in Turkey's adaptation policy (see Chapter Four). The promotion and depiction of adaptation as an allegedly rational and interest-free process in developing countries, in order to harvest more revenue from international agencies, further adds to this picture (Symons, 2014). Mainstream adaptation interventions, with their insurance schemes, climate resistant seeds, and irrigation systems, reproduce and strengthen the development project by adjusting to external conditions rather than reconfiguring themselves (McMichael, 2009a). As icing on the cake, some recent initiatives even suggest trade liberalization (i.e. tariff elimination) as a means of adaptation in Turkish agriculture (Ouraich et al., 2014). This, I argue, is due to a conscious decision to leave out non-mainstream options in adaptation, due to neoliberal developmentalist priorities (such as a stronger emphasis on inclusive social security, strengthened safety nets, and a formalization of labour relations, see also Kallis and Zografos, 2014). If adaptation is to be redesigned to equitably share the fruits of progress, then multiple subjectivities need to be moulded into climate policy, which so far underemphasize or ignore the symbolic and psychological features people attribute to places, processes, and things (Adger et al., 2011). This is particularly relevant since "people's identity, values and worldviews, and power dynamics" all contribute to shape the limits of adaptation (Tschakert,

2014: 747). In this sense, the limits of adaptation are not only shaped by ecological thresholds or economic constraints, as the development project asserts, but also depend on individual and cultural values, institutions, and governance structures (Adger et al., 2009). This calls for acknowledgement of a plurality of voices and values in deciding which path to take to adaptation. Notions like 'deliberation' (Zografos and Howarth, 2010) and 'reflexivity' (Pieterse, 1998; Arsel, 2005) all have a role to play in establishing the institutional terrain of changes to adaptation policy to make it attentive to distinct subjectivities. This study's contribution on reflexive policy arrangements in labour-intensive agriculture in Turkey (in terms of the goals, means, and agency in adaptation) points to such recognition.

The final dimension of a mobilizing narrative on climate change, *direction*, intrinsically involves a questioning of the goals of our socio-ecological systems. It departs from an understanding that interventions to adapt to immediate contingencies do not provide durable solutions to vulnerabilities per se, since imminent double exposures of our age are not autonomous problems. Rather, they are symptoms of foundational contradictions of the societal structure. As the empirical study presented in Chapter Four suggests, there are diverse ways of approaching adaptation in line with one's values/worldviews. Yet regardless of one's final goal (for example, even in the case where all parties strongly demonstrate a developmentalist agenda), there will always be nuances in means, agency, and tactics in adaptation. Such nuances will be shaped by political and ethical preferences. This can most clearly be seen in the contestation between resilience and transformation as two distinct ways of perceiving and valuing adaptation, which emerge from the findings of Chapter Three and Four of this thesis. In what follows, I elaborate these two visions in-the-making.

3. The direction of desirable change

3.1. Resilience as adjustment

> "*We can't predict the next disruption or catastrophe. But we can control how we respond to these challenges. We can adapt to the shocks and stresses of our world and transform them into opportunities for growth."*
> *Rockefeller Foundation*[11]

[11] 100 Resilient Cities Challenge Website: http://www.100resilientcities.org/pages/100-resilient-cities-challenge?utm_medium=social&utm_campaign=20140827appclosingemailtwshare&utm_source=twitter&source=20140827appclosingemailtwshare (Accessed on 01/09/2014)

The recently released UNDP Human Development Report 2014 (UNDP, 2014: 15), which carries the title "*Sustaining Human Progress: Reducing Vulnerability and Building Resilience*," suggests that "a person (or community or country) is vulnerable when there is a high risk of future deterioration in circumstances and achievements." Under a vulnerable description of the future of human societies, the panacea proposed by this high-level, influential policy guidance document is resilience. Human resilience, according to this report, is defined by people's ability to cope and adjust to changing conditions. The problem with this lies precisely with the definition. Both the critical literature and empirical findings of Chapter Three of this thesis observe that, as long as the direction of change is shaped with reference to its 'coping' and 'adjusting' characteristics, resilience will fall short in proposing an effective and durable solution to existing problems. One of the key reasons of this shortcoming is the apolitical vision inherent in resilience.

It is not a huge revelation that the existing social science on global environmental change has so far focused on immediate problem solving (techno-managerial fixes) or on triggering individual behavioural change to a great extent (Pelling et al., 2012). Such responses to vulnerabilities regularly promote individual and group capacities for incremental reform rather than providing alternative political imaginaries (Evans and Reid, 2014; Grove, 2014). This is achieved through the use of neoliberal state apparatus in disciplining the subjects both materially and discursively, as we see happening with seasonal workers being depicted as nomads (see Chapter Three). Despite common wisdom, Peck and Tickell (2002) observe that neoliberalism does not necessarily manifest itself as a *'roll-back'* of the state. On the contrary, in its recent reincarnations, neoliberal rule increasingly assigns a *'roll-out'* role for the state, a role in which the state becomes an instrument of social intervention and social engineering. This form of neoliberalism is not only concerned with "the mobilization and extension of markets" but it also specifically focuses on "aggressive regulation, disciplining, and containment of those marginalized or dispossessed by the neoliberalization" (Peck and Tickell, 2002: 388-389). An understanding of adaptation as adjustment, which gives the highest consideration to the resilience of a system, precisely reinforces such a role for the state.

Resilience, which is increasingly popular in a number of global subjects and disciplines, changes the way we understand object-subject relations (Chandler, 2014). This notion is increasingly employed in response to emergencies/contingencies understood as problematic events and processes,

which are unpredictable, abnormal, and disruptive to the political economy. As such, they render a response/intervention necessary (Calhoun, 2004). Nonetheless, resilience strongly favours adaptation of the self. It reshuffles the meaning of security in the highly political domain of climate change adaptation. Adaptation as biopolitics, a notion that I have elaborated in Chapter Three of this thesis, runs parallel to resilience as adjustment in terms of its responses to multiple challenges of our age (i.e. double exposures). While initially considered a doctrine providing a critique of neoliberal model of developments, resilience as adjustment ends up legitimizing the leading role of the market in adaptive responses, while individualizing the responsibility to self-adapt to changes perpetuated by state-led policies (Evans and Reid, 2014: 37).

It can be argued that there are different levels to adaptation as biopolitics, which eventually serve to build 'resilience' of the labour-intensive agro-system. The first level is at the individual level, building resilience on the individual and social bodies of peasants and seasonal workers as a fallback mechanism to shift the costs of climatic and market risks, should they turn true. Building resilience on the bodies of labourers using biopolitical interventions[12] constitutes the first step. To be made resilient, the subject (i.e. seasonal worker) accepts the very conditions of uncertainty, insecurity (or *flexicurity* as Gertel and Sippel (2014) suggest) and precariousness of her/his existence, labour, and life. Acknowledging that she/he lives in a permanent process of continual adaptation to threats and dangers outside of her/his control, he/she accepts the conditions of possibility of the world and therefore deliberately disables his/her "political habits, tendencies and capacities" by "replacing them with adaptive ones" (Evans and Reid, 2014: 41-42).

> "Rather than enabling the development of peoples and individuals so that they can aspire to secure themselves from whatever they find threatening and dangerous in a worldly living, the liberal discourse of resilience functions to convince peoples and individuals that the dream of lasting security is impossible." (ibid: 68)

When we move from the individual to the population at large, resilience as adjustment serves to produce allegedly value-neutral, apolitical roadmaps for societies by promoting self-adaptable individuals responding to contingencies through incremental changes. This happens by spreading the bad news that lasting security (and an associated, alternative imaginary for

[12] Lemke (2001) reminds us that the key question under such circumstances is "*who has the power to decide autonomously on one's conduct of life?*"

the future) is impossible. Such recognition is promoted at the societal level in parallel with the individual level. In this sense, while security is associated with the exclusion of risks and threats to well-being[13], resilience approaches preach that we cannot be secure from risks so it is better to be prepared at all times, by all means. Consequently, resilience as adjustment securitizes the individual and the population through discursive and material considerations. In doing so, it reduces matters of security and politics to "behavioural choices and the prerequisites of adaptation processes" (Juntunen and Hyvönen, 2014: 9).

As Dufty-Jones (2014: 373) observes in her analysis of rural economies in an age of migration, productivity increase and agricultural intensification is achieved at the price of maintaining a more vulnerable, compliant and easy-to-control body of migrant seasonal labour. Thus, the only way to continue capital accumulation in this global labour-intensive agricultural scene under grim scenarios of climate change and pressures from markets is to exert control over the profits by facilitating the circulation of cheap and precarious seasonal workers. This does not only hold true in developing countries like Turkey, but also in wealthy parts of the world like Canada (Preibisch, 2010) and Spain, (Hoggart and Mendoza, 1999) amongst others. My contribution to this literature can be read as a word of caution against the unquestioned reliance on resilience in mainstream adaptation planning in labour-intensive agriculture. One has to be attentive to the fact that "climate proofing is a new profit frontier" (McMichael, 2009b: 252) and be cautious of the potential risks that biopolitical interventions carry. As history has repeatedly shown us, high-modernist ideals and domination of economistic goals imposed as biopolitical rule on rural social groups in Turkey often fell short of what they meant to achieve (Evered and Evered, 2012). In this sense, reducing the opportunity provided by adaptation to rethink the goals of our socio-ecological system to a fraction of its potential does injustice to these social groups within productive sectors. An alternative approach to adaptation in labour-intensive agriculture needs to address these shortcomings. In doing so, it needs to construct "a different vocabulary through which to articulate the necessity and reality of climate change, while being able to welcome this inevitable event as the process of passage to a new world and new life beyond that which we have known up until now." (Evans and Reid, 2014: 163).

[13] i.e. Self-securing of a social group from external threats, for example see the '*politics of the bunker*' in development aid industry by Duffield, 2011; Duffield, 2012.

3.2. System change as transformation

The findings of this thesis confirm that there is only a degree of consensus on the direction of change insofar as the adaption in labour-intensive agriculture in Turkey is concerned. A combination of socio-ecological cost-shifting and disciplining of the agricultural labour force serves the end goals of a developmentalist agenda in adaptation. Nonetheless, a transformative shift in thinking about adaptation is not only plausible (Park et al., 2012), but also required to overcome the hurdles of recurring vulnerabilities. Not only the evidence provided here but also the consolidating political ecology literature on adaptation suggests that transformation should constitute the theoretical backbone of a truly applicable praxis within the adaptation-development nexus. This calls for a thorough rethinking of the agricultural system's goals in light of broader connections, and also considering the interlinkages between subjective and objective dimensions of adaptation. Such considerations need to account for identity, values, power relations, and structural inequalities within the context of place-based, policy-relevant studies. As O'Brien (2012: 591) acknowledges, there is hardly any gap in the knowledge-action axis in a world full of complexities associated with "social, economic, political, technological, cultural, and environmental problems." Rather, the problem is in the types of knowledge and action that are prioritized by the political and economic powers in place, and in the inhibition of alternative transformative imaginaries. Let me elaborate my point on these imaginaries through two examples of alternative approaches to adaptation in labour-intensive agriculture, which is threatened not only by global environmental changes but also by instability in global markets.

Figure 5.1 shows us a labour-intensive landscape that came to life not long ago amid a dry, barren landscape. It portrays greenhouses in the city of Almeria in Andalucía (southern Spain). This powerful image is taken from the 2009 documentary of world-famous photographer and documentary director, Yann Arthus-Bertrand, titled *Home*. He explains the story of this photo in his blog (Arthus-Bertrand, 2009, emphasis added) as follows:

> "This sea of plastic, the largest concentration of greenhouses in the world, did not exist 35 years ago. It now covers almost 40.000 ha. An average of 200 mm of rainfall a year falls on what used to be a dry savannah where a few herds roamed. This pluviometry technically means that this part of the Almeria province is a desert. The cold greenhouses are home to fruit production, especially intensive vegetable production, which uses 1 cubic meter of water per m^2 a year, that is to say 4 to 5 times more than the little rainfall provides. The plants grow on an artificial substrate made of sand covered in black plastic and get their water from forage. Half of them have been installed illegally and some of them draw water from fossil groundwater. The environmental balance is disturbed as is the soil,

which is polluted by fertilisers, pesticides and fungicides used to increase the rate of the yields. **The lack of water, increasing salinity and the exploitation of cheap immigrant (and often illegal) labour show the limitations of this system**. There are now 100.000 ha of crops in greenhouses in Spain (ten times more than in France). In the international agricultural market, Andalusia is the region that exports the most market-garden products, fruits, and vegetables in the whole Europe."

Figure 5.1 La Costa del Polythene or Almerian greenhouse landscape (36°42' N, 2°44' W) (Photo Credit: Yann Arthus-Bertrand)

More than 50% of the produce of Almeria is destined for foreign markets, and "the corresponding 1.66 million tons that are exported make this province the largest Spanish exporter of fresh vegetable produce" (Aznar-Sanchez et al., 2011: 242). On the physical impacts of such massive change, a group of geophysicists found out that this booming development of "greenhouse horticulture in this area may have masked local warming signals associated to greenhouse gas increase" (Campra et al., 2008: 1). This is demonstrated by the significant reduction in average surface air temperature trend of -0.3◦C/decade in the region. *La Costa de Polythene* (The Plastic Coast), as it is called in common language, appears both as an adaptive measure against climatic contingencies, as well as a landmark of the drive towards the intensification of agriculture led by an export-driven economy. Nonetheless, *El milagro de Almería* (the Almerian miracle) does not go uncontested. The export-led labour-intensive horticulture in Almeria shows striking parallels with migrant seasonal agricultural labour in Turkey as elaborated in previous chapters of this thesis:

> "Many Spanish workers find it too hot to work and the conditions too brutal so the sweat-houses are staffed mainly by legal and illegal immigrants from Africa and Eastern Europe. One hundred thousand immigrants are thought to work in the 'invernaderos' [greenhouses] and many believe it is the lack of workers' rights that help the businesses to be profitable." (Rod Kirkpatrick, 2012, unpaginated)

This greenhouse-dominated agricultural landscape only proves profitable in the face of increasingly uncertain climatic patterns, demand-side fluctuations, and prevailing competition in foreign agricultural markets, as long as it builds on the precariousness of the hands that pick the vegetables and fruit. Such intensification of the labour-intensive agricultural landscape through greenhouses has often been accompanied by growth in immigrant employment (Hoggart and Mendoza, 1999: 545). In this sense, the flipside of adaptation as adjustment through technological fixes (such as more efficient irrigation schemes, establishment of greenhouses against climatic risks etc.) serves to maximize the production, meanwhile creating ever-precarious conditions for the workers, which serve as a buffer for profitability of the business. Adaptive interventions to maintain the circulation of seasonal workers in the lower Seyhan plain are but one face of such a phenomenon.

Quite ironically, while this image of *La Costa del Polythene* was being circulated around the world through Arthus-Bertrand's documentary in the run-up to COP15 in 2009, a distinct vision of adaptation was also being heard in the streets of Copenhagen (see **Figure 5.2**). This alternative vision is one of agroecology as uphold by La Via Campesina, a global movement of peasant movements that embraced "*globalize hope, globalize struggle*" as its key motto. On 12 December 2009, La Via Campesina column in Copenhagen Climate Justice March walked the streets with a banner, which read as "*Food sovereignty can cool down the Earth*", indicating agroecology as the way forward. Altieri (2009: 110) explains that agroecological strategies, such as those promoted by La Via Campesina, deliberately target the poor and in doing so, they **do not** simply "aim at increasing production and conserving natural resources." Instead, such strategies care for meaningful employment for the human dimensions of agricultural systems while ensuring access to local input and local markets. Accordingly, adaptations of this sort require, heavy involvement of local knowledge and skills in the planning phase for a fair and sustainable agriculture under a changing climate.

La Via Campesina's vision for adapting to climatic risks and mitigating the negative impact of agriculture on the planet extends beyond mainstream recipes for change to the contrary of experiences in both Almeria and the lower Seyhan plain. Rather than providing patch-wise techno-fixes to emerging problems, this vision promotes a thorough re-thinking of agricultural

systems' goals with an eye on the ecological, cultural, social, political and labour ramifications of these systems. If we accept Moore's (2014) argument that climate change is about to bring an end to cheap food regime by mobilizing negative-value[14]; new, emancipatory and egalitarian alternatives might only spring by producing new ontologies. In this sense, such a vision of adaptation offers a transformative vision of peasant-driven agriculture by contributing to the "epistemic shift that is necessary to reverse the metabolic rift, by revaluing agroecology and a 'carbon-rich' future, where a human-scale agriculture performs the life-task of feeding those marginalised by corporate foods" (McMichael, 2009a: 162).

Figure 5.2 Cooperative rice farm in Sukabumi, Indonesia (Photo Credit: La Via Campesina)

As the two examples have shown, approaches to adaptation matter, and they matter significantly. Insofar as transformation is concerned, these visions "convey something more radical than mere change or even transition to a new world where climate change effects are a reality" (Tschakert et al., 2013: 346). Such visions require a thorough rethinking of system goals, where both changes in system goals (i.e. resulting in major change in land use or

[14] A condition which Moore (2014: 5) identifies as the "ferocious combination of rising costs of production (an old cumulative dynamic) with the novel global *conjoncture* of planetary instability and unpredictability captured in the discourse on climate change."

employment), and changes in spatial aspects of agricultural activity are scrutinized and considered (Rickards and Howden, 2012: 243). In operationalizing these transformative approaches to global environmental change, Hackmann et al. (2014) identify six cornerstones. These cornerstones are respectively (i) paying attention to historical and contextual complexity, (ii) fully grasping the consequences of global environmental change, (iii) establishing conditions and visions for change, (iv) valuing interpretation and subjective sense-making, (v) acknowledging responsibilities and ethics, and (vi) producing sound governance and decision-making. This thesis presents evidence for all these six different cornerstones with its empirical studies. Let me present them in turn.

The first empirical study of this thesis (Chapter Two) provides a detailed picture of biophysical and socioeconomic vulnerabilities underlying the double exposure of different social groups in a labour-intensive rural setting. In doing so, it depicts the complexity of ethnicity, class, gender, and social status-laden character of vulnerability, and indicates that power asymmetries are the obstacles to a fair, legitimate, and effective adaptation. A transformative approach shall therefore also tackle the socio-ecological cost-shifting emerging from these power asymmetries. The second contribution, as underlined in Chapter Three, hinges on paying attention to contextual complexity and unearthing policy circumstances that raise issues on the responsibility and ethics of adaptation. These responsibilities inevitably need to be clarified and addressed at a national policy level in order to not reproduce existing vulnerabilities. A vague approach to the responsibilities in adaptation, in this sense, contributes to biopolitical practices to maintain the existing power asymmetries and ensure the continuity of capital accumulation. The third study (Chapter Four) completes the cycle by pointing out the diverging interpretations of what adaptation constitutes, and the subjective attributes of its overlap with developmental policies. It points out that a multiplicity of values and worldviews shall be considered to avoid the reproduction of biopolitical practices at the policy level. In this sense, the findings of this thesis indicate two main issues to reach a transformative adaptation that are also applicable in the case of Seyhan and Turkey overall. These are a) politicization of the seemingly rational, straightforward, and techno-managerial means of adaptation and b) establishment of relevant governance structures and institutions to allow the expression of multiple values and worldviews in decision-making on development and adaptation.

As I have previously underlined, understanding adaptation as exclusively protecting ‘the development project’ from external threats (or itself), leads to the implementation of “a set of biopolitical compensatory and

ameliorative technologies of security that define and act upon non-insured populations to improve resilience by strengthening self-reliance" (Duffield, 2006: 74). Adaptation, in such a formulation, becomes the process of securing development through the construction of self-reliant populations, who are able to heal their wounds and ease their woes on their own in order to save 'development': the unifying goal, which binds nations, peoples, and geographies in their competition against the risky and hostile world out there. Rather than pointing at governance level adaptive responses or techno-fixes to ameliorate agricultural productivity in saving the development project, a transformative adaptation needs to provide safety from markets and the climate alike.

In light of these research findings, I argue that there is a need for a new political economy of adaptation since solutions that "rely on a linear apolitical view of the policy process and tend to frame solutions in technical and managerial terms" are not responsive to the challenges of climate change (Tanner and Alouche, 2011: 2). This is particularly relevant in cases where adaptation is used as an entry point by the state for population-level biopolitical controls to keep prevailing agricultural economy intact from the risks posed by double exposures. Similarly, one has to be cautious of the calls for "bringing the state back in" within the intricate relationship between adaptation and development (Eakin and Lemos, 2006: 16). I argue that this is required not to advance an anti-statist agenda in adaptation (which falls prey to the demands of markets easily) but quite the opposite, to be aware of the facilitation role of the *'roll-back'* state under neoliberalism and to avoid biopolitical pitfalls. In this sense, new institutional arrangements to tackle vulnerability in labour-intensive agriculture need to show receptiveness in implementing politically costly redistributive policies to prevent reproduction of existing patterns.

4. Policy implications and future research

Tania Murray Li (2007: 1) draws our attention to the "inevitable gap between what is attempted and what is accomplished" insofar as the development project is concerned. Despite being adorned with good intentions, capital accumulation-led development projects serve to control, regulate, and benefit from people with their unparalleled belief in linear and one-dimensional progress. Adaptation policy, which is aligned to serve these goals, is no exception.

From a mainstream perspective, adaptation serves to handle or soften the threats posed by climate change as long as the proposed adaptive

strategies and practices do not challenge the existing modes of capital accumulation and maintain the favourable conditions for those in power (both at the local, national and supranational scale). Nonetheless, adaptive interventions of this sort might give the impression that problems are addressed while delaying the necessary changes in the institutions and structures of power (Fieldman, 2011). This is increasingly more evident in the rise of the resilience discourse in national and international policy documents (Evans and Reid, 2014; Chandler, 2014, see also UNDP, 2014). Therefore a comprehensive policy response to social vulnerabilities needs to overcome the assumption of a single, integrated, actionable knowledge on resilience, which fits any situation. Rather, climate change adaptation policies (similar to the responses to other socio-ecological challenges) should stop short-circuiting the grand questions on the goals of our socio-ecological systems in rushing to produce immediate responses to local manifestations of global environmental changes (Castree et al., 2014: 766).

As Duruiz (2011) argues "short-term actions for the betterment of the social and working conditions can be instrumental, if and only if the workers are regarded as subjects capable of reflecting on the problems they experience in the field and of coming up with innovative ways to overcome them." This inevitably requires including migrant seasonal agricultural workers in planning for adaptation to climate change both in the short and long-term horizons in a region of Turkey historically shaped by labour-intensive agriculture. Incorporation of these communities' aspirations, perceptions, and values surrounding their mobile living and working conditions is indispensable for adaptation to changing environmental and socio-economic conditions.

If we return to the argument of Phillip McMichael (2009a) on food regimes, extended here in Chapter Two within the context of response to double exposures, a just adaptation in labour-intensive agriculture should not only encompass re-envisioning food as a good that comes from somewhere, embedded in a web of social relations, picked up by some hands and served through specific channels to our table, but also it shall possess the characteristics that Altieri (2009: 110) suggests in what follows:

> "The development of sustainable agriculture will require significant structural changes, in addition to technological innovation, farmer-to-farmer networks, and farmer-to-consumer solidarity. The required change is impossible without social movements that create political will among decision-makers to dismantle and transform the institutions and regulations that presently hold back sustainable agricultural development. A more radical transformation of agriculture is needed, one guided by the notion that ecological change in agriculture cannot be promoted without comparable changes in the social, political, cultural, and economic arenas that conform and determine agriculture"

Such reconsideration of agriculture steers away from a productivist understanding of agriculture (De Schutter, 2014; see also Chapter Four), and points to the curtailing of alternative visions in agricultural systems. The predominance of existing narratives conspicuously entails imagining adaptation as a straightforward technical and managerial process. Acceptance of adaptation along these lines leads to what Swyngedouw (2010: 214) identifies as the evacuation of 'the political' in climate change policy. This is precisely the case in Turkish adaptation policy in labour-intensive agriculture where alternatives diverging from the mainstream are brushed under the carpet. Nonetheless, a thorough re-thinking of agriculture in the lines of agroecology will necessarily involve setting sail beyond the technological fixes, public health interventions, governance and management strategies, risk assessments, and economic valuations in adaptation policy (Manuel-Navarrete, 2013: 307). It will comprise conflict, contradiction, and politics as any transformative change does, and hence make space for alternative subjectivities. A drift towards agroecology as a means of adaptation in line with La Via Campesina's vision in Turkey will inherently entail embracing a multi-scalar, multi-temporal, and multi-functional role in agriculture (aimed at more than boosting the output).

In order to move beyond the incremental socio-spatial fixes and drift towards a transformative agenda, understanding the interests and values need to be given priority in adaptation research. In this sense, the outcomes of this thesis suggest some new directions for research. A key research theme, which emerges from here, is the need for more studies regarding the capacities of vulnerable people to "shape the political economy that shapes their securities and vulnerabilities" (Ribot, 2014: 3). This involves conducting studies on the emergence of peasant social movements, unionization, worker-led cooperatives, and politicization of seasonal workers over class and ethnic identities vis-à-vis their adaptive strategies within the prevailing political economy. Another potential research direction is the operationalization of transformative and resilience approaches, and assessment of their respective capacities in responding to shocks. This research branch will involve longitudinal analysis of policies and practices in adapting the labour-intensive agriculture to newly emerging conditions. Comparative studies in different labour-intensive agricultural hotspots (for example, comparisons of a productivist vs. post-productivist agricultural setting) might produce further enlightening results in this respect. The third and the final research topic, which could not be covered in this thesis, constitutes the responses of the most vulnerable people against policies, which aim to control and constrain them. This involves an inquiry into gendered responses, relations within other marginalized groups as well as research on failures and successes of

bargaining power of these groups against attempts on their subjectification in maintaining capital accumulation under the disguise of adaptation.

Rivas (2014), in his review of a new contribution to agricultural labour literature, suggests that the experiences of seasonal agricultural workers constitute an assemblage of economic, political, and ideological forces. These forces are closely tied with the "despotic forms of capital accumulation in contemporary global capitalism —that make possible the existence of a food production system that provides healthy, fresh food to a small fraction of the world population at the expense of the exploitation of an extensive mass of labourers who provide to that system their subordinated, flexible, and cheap labour force" (ibid: unpaginated). In order to disentangle these assemblages under double exposures, this thesis also suggests deployment of carefully selected research strategies. Critical approaches to research subjects and a careful selection of participatory methodologies have important roles to play here to reveal the biopolitical control of human subjects and suggest alternatives. As such, it is important to follow to Negri's (2014: 430) advice where he identifies the added value of a critical approach to study and counter the assumptions of capitalist development (including but not limited to adaptation policies) as follows:

> "The critical (better, subversive) method constructs a missile of multiple stages, and every stage carries us further away and puts us in the conditions to construct more intense and farther-reaching concepts. In this way, advancing research from within capitalist development, life becomes ever more invested by the productive process, and this method enables researchers to extend their findings much further than the genetic determinations of research itself could—and arrive, today, at an analysis of the resulting biopolitical and ecological consequences flowing out of capitalist development."

Regardless of the research strategy to be deployed to tackle the points raised here, future research shall extend the knowledge and political action on seasonal workers in identifying and producing alternatives to these biopolitical and ecological consequences of capitalist development. This involves putting a special emphasis on the agency of seasonal workers in transformative change and catering for producing alternative social imaginaries. In this sense, an alternative reading of this text allows opportunities to pursue further research from a 'situated knowledge' (Haraway, 1988) point of view. Paulson et al. (2003: 209) observe that exclusion of situated knowledge and discourses leads to framing the environment as an "unproblematic category, an arena of natural laws." Nonetheless, while such modes of thinking about human progress and end goals of our socio-ecological system contribute to existing global problems, "humans also have the capacity to collectively

transform systems and structures that are based on dangerously outdated paradigms" (O'Brien et al., 2013: 6). This will entail "deliberate, transformative actions […] for breaking through some entrenched thoughts and attitudes about human-environment relationship" (ibid.). One amongst many, yet a very important challenge before such actions is the necessity for environmental movements to go beyond the urban-rural divide to question developmentalism through reflexivity (Arsel, 2005: 31). This will require nothing short of a liberation from a blind commitment to economic growth, elite political powerhouses, and the global economic system as a given.

5. References

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Appendix – 1

Case Study Protocol
For Fieldwork in Karataş / Adana

1) Overview of the case study:

The main objective of this case study is to understand the existing vulnerabilities and the functioning of state-led efforts on climate change adaptation of labour-intensive agriculture in Turkey. The case study site is Karataş district of Adana province in southern Turkey. This case study investigates the underlying motives and related actions with a focus on migrant seasonal agricultural workers

The case(s) to be studied

The case, to be investigated in this research, is the implementation and social construction of adaptation policy and social policy on migrant seasonal agricultural workers. The study focuses on the existing vulnerabilities of their living and working environment, precariousness of their work relations and the state-led initiatives to improve their condition under increasingly uncertain climatic conditions.

Data collection strategies

A qualitative research design is preferred to grasp the different subjectivities and perceptions therefore data will be collected through semi-structured interviews with landowners, workers and intermediaries, existing field reports, documents from the village board, state institutions in Karataş district, agricultural unions and water users' unions, rural police (*jandarma*), expert and group interviews, informal meetings with workers and field observation during the working hours. A content analysis will be undertaken on two major policy documents. A structure focus group meeting and scenario workshop will also be held with landowners, intermediaries and local government officials.

2) Field work arrangements and data collection strategies

Key informants will be recruited using snow-ball technique, one leading to another. In establishing the preliminary contacts, institutional diversity and seasonal workers will be prioritized. Personal contacts with key actors (i.e.

Head of Tropical Diseases unit at Çukurova University, president of the Çukurova Agricultural Intermediaries Association) will be used to reach other actors. The researcher will reside in Karataş and will travel to three villages (Bahçekapı, Kapıköy/Tuzla and Karagöçer) with a high concentration of seasonal workers and labour-intensive horticulture production.

3) Concerns to be raised and monitored in protecting human subjects

No payments or in-kind donations shall be done to respondents. Verbal consent will be taken for recording the interviews and for taking photos.

4) Sample research questions

a. For landowners / experts
   - How did the temporality of agriculture have changed here in the past 10-20 years?
   - Has there been a change in crops? If so, what and why?
   - What are the most frequent climatic hazards?
   - Has the necessary labour-input changed in the basin?
   - Has the migrant seasonal agricultural labour supply changed?
   - What do you see as the main threat on agriculture here?

b. For seasonal workers
   - For how long have you been coming to Karataş?
   - In which crops do you usually work, for how long, with how many people?
   - Have you witnessed any change in the employment availability due to weather or market-based changes?
   - Have you witnessed any change in the crop pattern in Karataş?
   - What are the major problems you have while working in the field and residing in tent yards?
   - Do you feel secure here? What do you perceive as the threats to your well-being?

5) Data analysis

All interviews will be recorded (where appropriate) and transcribed. Detailed notes will be taken for those interviews where recording is not possible. Real names will not be used to ensure anonymity.

Watermelon, which is somewhat an important component of the earlier chapters of this thesis as well as its cover, provides us a brilliant metaphor on climate change adaptation. Political strategies that resemble watermelon (green on the outside, red in the inside) create opportunities to read and make history in radically different ways and to transform our societies beyond the dull political oscillation of reformative climate policies. It is my hope and belief that a fair future for all will not only come from red-green political strategists pursuing their goals in parliaments and congresses but also from the ground with the hands of the people who harvest these red-green futures.

"It is we [the workers] who built these palaces and cities, here in Spain and in America and everywhere. We, the workers. We can build others to take their place. And better ones! We are not in the least afraid of ruins. We are going to inherit the earth. There is not the slightest doubt about that. The bourgeoisie might blast and ruin its own world before it leaves the stage of history."

(Buenaventura Durruti, 1936)

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