# Should I eat grapes from India?

*A story of who wins and who loses in export grape production in Nashik district, Maharashtra*

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Water Resources Management group

WAGENINGEN UNIVERSITY
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The cover photograph is of a woman employed in export grape production. She, along with fellow labourers, is unwrapping each grape bunch so the field is ready for harvesting the following morning.

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Master Thesis Water Resources Management submitted in partial fulfillment of the degree of Master of Science in International Land and Water Management at Wageningen University, the Netherlands

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AGRIS Mundus Sustainable Development in Agriculture Master of Science

# ABSTRACT

Within the context of contemporary globalisation and enabled by agro-economic restructuring in countries of the southern hemisphere I can, irrespective of season, purchase a colour array of horticultural produce in my local supermarket. One such item is grapes, produced in India and imported to Europe during April and May. Production is predicated upon plentiful and secure fresh water and labour resources and, through my conceptualisation of these processes within Marxist and Marxist feminist theory, I perceived potential negative consequences of these predications, including accumulation by dispossession, the exploitation of female labour through the gendered organisation of production and increasingly feminised conditions of labour for all. Perceiving a moral quandary in terms of my consumption I sought to decide whether I should eat grapes from India. Using a feminist commodity chain analysis I attempted to uncover the experiences of those incorporated into export grape production and understand processes of winning and losing within three nodes of the grape commodity chain; irrigation and hydraulic control, production, and harvesting and processing. To achieve this I carried out a reflexive ethnography, utilising guided conversations, semi-structured interviews and participant and non-participant observations, in the command area of the Ozar Water Societies in Nashik district, Maharashtra. Findings within all three nodes were contradictory and perplexing with actors simultaneously experiencing both winning and losing. In the irrigation and hydraulic control node I observed processes of accumulation by dispossession for export grape production but also identified the increasing vulnerability of export producers compared to non-export and non-grape producers. In the production node I observed the increased labour burden of women from export grape producing households but also realised their satisfaction with their improved condition of living. I also observed feminised conditions of labour for labourers but also saw their participation in terms of their own agency to improve their household condition. In the harvesting and processing node I observed lower wages for women, legitimised through gendered divisions of labour and discourses deskilling their work. However I also observed women's enjoyment of their working environment and potential increases in autonomy through wage retention. Whilst labourers experienced feminised conditions I contextualised these within the vulnerability of export companies to global markets. Although these perplexities prevent a simplistic answer to whether I should eat grapes from India, reflections can be made upon findings in terms of their wider meaning. These include the relevance of contextualising export horticultural production within Marxist and Marxist feminist theory, the importance of empirical research to understand experiences and the similarities between horticultural production within different geographical and social localities. Furthermore this research indicates that we need to be more conscientious consumers and realise that our consumption has consequences.

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# ACRONYMS

| | |
|---|---|
| **ABD** | Accumulation By Dispossession |
| **CCA** | Cultivated Command Area |
| **EU** | European Union |
| **EUR** | Euros |
| **GCA** | Gross Command Area |
| **GoI** | Government of India |
| **GoM** | Government of Maharashtra |
| **HVAE** | High Value Agro Exports |
| **ICA** | Irrigated Command Area |
| **IMT** | Irrigation Management Transfer |
| **INR** | Indian Rupees |
| **MFI** | Multilateral Financial Institutions |
| **MIDH** | Mission for Integrated Development of Horticulture |
| **MRL** | Maximum Residue Levels |
| **NHM** | National Horticulture Mission |
| **NRCG** | National Research Centre for Grapes |
| **PA** | Primitive Accumulation |
| **SOPPECOM** | Society for Promoting Participative Ecosystem Management |
| **SPK** | Samarth Parivartan Kendra |
| **WUA** | Water User Association |

# ACKNOWLEDGEMENTS

There are a great many people I wish to thank who have played a vital role in this research. To all those involved in export grape, non-export grape and non-grape production in Nashik district; producers, labourers and exporters. I greatly enjoyed the conversations, the hospitality and the questions. To my translator Sukanya for all her work, and to Bharat Kawale from Samaj Parivarthan Kendra and Ramnath Wable and Ravi Joshi from the Ozar Water Societies for being so generous with their time whilst I was conducting my fieldwork. To Seema Kulkarni and Sneha Bhat for their advice, support and friendship and to everyone at SOPPECOM for making me so welcome. To Iben Nathan for her open-minded and patient supervision and Margreet Zwarteveen for her enthusiasm and inspirations. To all the friends along the way in Denmark, India, the Netherlands and the United Kingdom. You have provided wisdom, reality and many, many laughs. Final thanks to my fellow thesis desperadoes Cecilia, Loes and Martina for their company, their discussions and their endless encouragement.

In memory of my Grandfather, Keith Larrington.

Fields new.

# DEAR READER

Before I commence the story of my thesis I would first like to disclose that I am a feminist. Perhaps this will be perceived as self-indulgent, particularly as I do so before I have introduced my research, its location and, most importantly, the participants. But I do this for a reason. My choices before and during research have not been made objectively, uninfluenced by external factors. Instead they have been reached subjectively, influenced by my own feminist perspective. I am not a neutral being but a product of my experiences and these experiences are manifested in the conceptualisation of my research; from the initial idea and its contextualisation within existing theory to the later stages of fieldwork and the analysis of findings. I therefore (attempt to) disclose my main influences.

My first is Feminist Post-structuralism and particularly the works of Donna Haraway and Sandra Harding, whose influence has led me to this disclosure. Like Harding I too do not see science as a neutral instrument that can be used to understand the real world and do not believe in the existence of the stereotypical scientist who is an:

> "…eccentric and socially marginal genius spending private funds and often private time on whatever purely intellectual pursuit happens to interest him" (Harding, 1986, p. 26)

All Scientists, and all people for that matter, are social products developed out of particular cultures and contexts. Their work, research and constructions of reality are influenced by perceptions and interpretations resultant from their socialisation (Harding, 1986). The normative scientific notion of positivist objectivity is therefore not possible but rather a "god-trick", a "conquering gaze from nowhere" (Haraway, 1988, p. 581). Influenced by this I employ the notion of feminist objectivity and situated knowledges; the idea that "only partial perspective promises objective vision" (Haraway, 1988, p. 583). This involves situating myself with my research, recognising my own influences upon choices and outcomes through self-reflection. This disclosure it my first attempt at situatedness and will be continued throughout my thesis.

My second influence is Marxist Feminism and the ideas that society is structured in such a way that it not only enables the exploitation of the proletariat, but that such structuring particularly enables the exploitation of women. The theoretical background of this influence is developed in Chapter Three.

My third influence is the social construction of gender. Unlike sex, which is determined by a biological criteria, an individual's gender is "the product of social doings of some sort" (West & Zimmerman, 1987, p. 129). Babies are not born with a gender, but rather assigned it through socialisation. These normative processes lead to reified differences of male and female and a subsequent divergence in gender roles within the household and labour market (West & Zimmerman, 1987). The construction of gender norms are not constant but performative; unstable and changing over time in order to "regulate and guarantee production, exchange and consumption of material goods" (Butler, 1988, p. 524). Furthermore gendered constructions are spatially and temporally variable, influenced by an intersection of factors including, but not limited to, age, caste, class, income, ethnicity and religion (Butler, 1988; Nightingale, 2011).

So these are the three (identifiable) influences upon this thesis; feminist post-structuralism, Marxist feminism and the social construction of gender. I am reluctant to draw any large conclusion from these influences and assign myself (and this thesis) to one 'brand' of feminism. Recently colleagues described themselves as 'left-wing feminists that care about the earth'. I too care about the earth (and its people and environment) and 'left-wing' is an apt classification of these three influences, so maybe I will borrow this description to encompass my situatedness for the duration of this research.

# 1. A GRAPE REVELATION

Perhaps the best way to introduce my thesis is to explain how the initial rootstock was found and the vines began to develop, before it was contextualised within, and at points convoluted by, existing literature and theory.

In April 2013 I was discussing potential MSc thesis topics with my soon-to-be supervisor Margreet Zwarteveen. I had a vague idea of a desired topic – irrigation water reallocations and gender – and a desired location – South America. Ten minutes later I had a topic – irrigation water reallocations and gender – but was going to India. A colleague of Margreet's, Seema Kulkarni, works for Indian NGO SOPPECOM and was interested in an exploratory study of water reallocations for grape production in Nashik district, Maharashtra.

The idea of grapes from India was intriguing. I did not know that grapes were produced in India, let alone exported. And where were they exported to? I asked myself where I thought the grapes sold in my local supermarket were from. Sometimes I am conscientious enough to read the label, I've heard of 'air miles' after all. Spain? Yes. South Africa? Naturally. Chile? Perhaps. But India?

After the meeting I biked to my nearest supermarket to investigate and low and behold, 'Indian grapes'. I purchased them. Upon arriving home I called my Father on Skype who answered whilst perusing the colourful aisles of Sainsbury's (mobile internet is pervasive). To the presentation of my plans; India and Grapes, he replied *"I've just put grapes in the trolley".* No one was ill he clarified, just for eating. I don't remember 'just eating' grapes during my childhood, they must have gone down in price. These grapes were also from India. A coincidence perhaps? It had to be tested more. I used a Facebook status to ask friends to look at the grapes in their local supermarket and tell me their origin (Figure 1.1). The answers arrived within minutes; India mainly but also South Africa and Chile. The status was liked by a Dutch friend travelling in India and an Anglo-Indian friend studying in Argentina. I decided to use the internet to trace the source of the grapes I had purchased (and by this point was consuming). I quickly found the supplier, their location and the area from which these grapes were grown; Nashik district, Maharashtra. What a coincidence. This was a lot to discover within sixty minutes of deciding upon a thesis topic so to digest the information I did what I have culturally been taught to do; I sat and drank English Breakfast Tea, grown in Sri Lanka, and thought quietly for a while.

I was a British student, studying in the Netherlands, imminently moving to Denmark and then, apparently, to India. Within an hour of finding a thesis topic I had communicated instantaneously with my Father in England, used social media to contact a network of friends that spans six continents (I've never met an Antarctican) and asked Google for the source of the grapes I was eating. The global appeared local and everything and everyone, it seemed, was connected. We are living, I concluded, in a globalised (still globalising) world.

I also thought about the consequences of being able to buy grapes from India in Europe. They must be irrigated, so is water being reallocated from another crop? Has conversion to export grape production in India changed agricultural and labour practices? Are there social, specifically, gendered, implications as a result of this? Who is making money from export grape production? I also began to feel some kind of moral responsibility. By purchasing these grapes I am, albeit virtually, connected to their source and so supporting, even driving, potentially negative practices and impacts associated with export. Upon reflection, all types of questions one would expect from a left-wing feminist that cares about the earth.

Cup of tea finished, thoughts chaotic, I asked myself one final question. Should I eat grapes from India? It is this question that this thesis seeks to answer.


**Figure 1.1 Facebook status asking friends to identify the origin of grapes in their local supermarket**

# 2. ASPARAGUS FOR CHRISTMAS AND MANGOES FOR EASTER

Over the next few months I became an avid supermarket label reader. After my initial Indian 'grape revelation' I began to observe the provision of grapes in European supermarkets (specifically Denmark, the Netherlands and the UK) from a wide range of countries including Brazil, Spain, Italy, South Africa and Chile. I broadened my label-reading beyond grapes to other horticultural items. At Christmas time I saw fresh asparagus imported from Peru and in the New Year citrus fruits from Egypt. My label reading became contagious and friends and family also started to look at the origin of their fruit and vegetables too; pineapples from Costa Rica, avocadoes from Kenya and dragon fruit from Vietnam. For Easter my nieces Ava and Nell received mangoes, imported from Burkina Faso, from the Easter Bunny (egg-shaped and healthier than chocolate).

Grapes, I realised, are one amongst a seemingly endless array of colourful horticultural products that can be purchased in the supermarkets of Europe, or at least in Denmark, the Netherlands and the UK, irrespective of season. Although I have been aware of the wide availability of horticultural produce for a long time, I was not so aware of its pervasiveness. For how long have we (the European consumers) been able to make the assumption that we can go to a supermarket, any month of the year and buy a mango, a pineapple, a bunch of grapes? Furthermore it seems that not only should these items be available, they should also be flawless; big, bright and blemish-free. Attractive to, and of minimum effort for, the consumer.

I began to conceptualise the availability of horticulture, irrespective of season, within the context of the globalised (still globalising) world that I had previously identified. Globalisation, understood as the connections between everything and everyone, is not a modern phenomenon. People, places and products have been connected for thousands of years. Agricultural trade has been occurring between continents for hundreds of years, although in the past it was largely limited to non-perishable items such as opium, tea and coffee that could survive long, low-tech sea voyages. Contemporary globalisation is different; characterised by unrelenting technological advances and instantaneous communication. Global connections are now best described as "more people, more often, more intense" (Scholte, 2008, p. 1479). It is these technological advances (including faster transportation and 24 hour cold storage on sea voyages) combined with improved coordination through instantaneous communication that has enabled the long-distance transportation of perishable horticultural items. The global boom in the production and exportation of high-value agricultural exports (HVAE), such as horticulture, (Lohr, 2001; Regmi & Gehlhar, 2005; Wu Huang, 2004) "is thus a reflection of the many advances made through globalization" (Barrientos & Barrientos, 2002, p. 3).

It is important to recognise that although the boom of HVAE has been enabled by contemporary processes of globalisation, it has been catalysed by two factors. The first is the neo-liberal agenda, beginning in the 1980s, which has opened up national and international borders for trade whilst simultaneously reducing tariffs and transaction costs (Barrientos, Kabeer, & Hossain, 2004). Secondly, particularly in developed countries, there is an increasing 'demand' for added-value products. Although added-value more often applies to processed food due to ease of preparation, fresh fruit and vegetables also provide added value: firstly through health benefits derived from their consumption and secondly the convenience of being able to purchase fresh goods according to recipe or whim (Regmi & Gehlhar, 2005; Wu Huang, 2004). I use 'demand' as I wonder whether I actually demand horticulture, irrespective of season, or whether I just take it for granted.

As the majority of countries that have an increasing demand for horticulture are in the northern hemisphere, counter-seasonal supply must be located within the countries of the Global South (Wu Huang, 2004). Perceiving potential opportunities in supplying high-value horticultural items to affluent consumers, particularly in terms of economic development and employment provision, many developing countries in the southern hemisphere have undertaken agro-economic restructuring in order to capture these gains. Restructuring includes the development of policies both internally, as well as contributing to the international policy environment, that enable and support the conversion to, and production and exportation of, HVAE

(Bee, 2000). When possible it also involves the development of a market niche; the production of a good that can be supplied on global markets at a point of low supply from alternative origins as this increases the price (Wu Huang, 2004).

After looking at this broader picture of globalisation and horticulture I started to focus on India. I soon realised India is a prime example of a country undergoing agro-economic restructuring with agricultural production moving away from traditional cereals and towards fruits and vegetables. Diverse soil and climatic conditions throughout the country are conducive to the process by enabling a wide variety of horticultural products to be grown (Briscoe & Malik, 2006; Mittal, 2007).

Agro-economic restructuring is institutionally supported by a number of programmes. The first is the National Horticultural Mission (NHM) which, centrally funded by the National Government and covering the majority of India's states, was launched in 2005. The aim was to expedite the transition from low to high value agricultural production, and increase production and improve productivity, in order to contribute to economic development within the country. Agricultural development was perceived as important for national development due to the continued importance of agriculture within the national economy and the dependence upon agriculture for livelihoods. The mission also involved capacity building, providing support for infrastructural development and technology adoption and investing in science in order to improve agronomic practices (Dwivedi, 2008; Mittal, 2007). Since 2014 the NHM has developed into the 'Mission for Integrated Development of Horticulture' (MIDH) which is funded by National (85 percent) and State (15 percent) governments. It has a much stronger focus upon non-traditional and market niche horticultural products and is also concerned with improving post-harvest processes and technology in order to ensure quality and enable successful exportation (Department of Ariculture and Cooperation., 2014).

India is now the second largest producer of fruit and vegetables worldwide and, though exports sometimes lag behind production due to quality issues and poor post-harvest infrastructure, horticultural exports are now rapidly increasing (Table 2.1). The export quantity of fruit and vegetables has increased four-fold in the past fifteen years, and production value has increased ten-fold. The faster increasing production value is indicative of the increasing production of high-value horticulture and the exploitation of market niches. (Mittal, 2007)

**Table 2.1 Quantity (tonnes) of export fruit from India 1991-2005 and the percentage increase over time. Source: adapted from Mittal (2007)**

| Commodity | Quantity (tonnes) | | | | % increase 1991-2005 |
|---|---|---|---|---|---|
| | 1991 | 1995 | 2000 | 2005 | |
| **Apple** | 3075 | 6508 | 5477 | 23225 | 755 |
| **Banana** | 290 | 966 | 6290 | 12818 | 4420 |
| **Orange** | 6611 | 11765 | 24019 | 31528 | 477 |
| **Grapes** | 5348 | 16813 | 14006 | 98898 | 1849 |
| **Guava** | 237 | 234 | 2102 | 3340 | 1409 |
| **Mango** | 19378 | 25414 | 34631 | 53480 | 276 |
| **Papaya** | 273 | 321 | 12660 | 3701 | 1356 |
| **Pineapple** | 197 | 117 | 138 | 1766 | 896 |

It was during this initial desk-based research that I realised, despite my initial scepticism, not only are grapes grown in India, they are grown extensively. Since the early 1990s the production area has quintupled (Figure 2.1A) and total yield has tripled (Figure 2.1B). India is now the 18$^{th}$ largest grape producing country in the world (FAOSTAT, 2013) with the majority consumed as table grapes (Bhosale, 2001). Grape cultivation is specifically targeted within the MIDH and production has grown faster than many other horticultural crops (Table 2.1); perhaps attributable to it being considered as "one of the most remunerative farming enterprises

in India" (Shikhamany, 2001, p. 1). Remuneration is high due to both the high demand for grapes but also because the harvest of Indian export grapes coincides with a low supply point on the European markets; March, April and May. A market niche. Of India's total grape production, 63 percent is produced in the state of Maharashtra (Figure 2.2A) and 80 percent of all exported grapes are from Maharashtra. The majority of grapes within Maharashtra are grown in the districts of Nashik, the origin of my supermarket grapes where Seema Kulkarni suggested I undertake exploratory research, and Sangli (Figure 2.2B) (Bhosale, 2001).

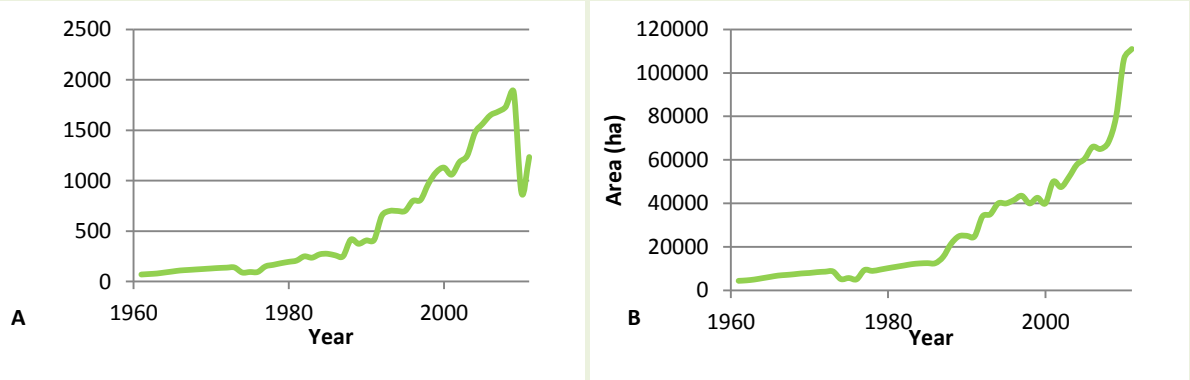


**Figure 2.1A Production (000) tonnes of grapes in India from 1961-2011. Source: adapted from FAOSTAT (2013)**
**Figure 2.1B Area of land (hectares) under production in India 1961-2011. Source: adapted from FAOSTAT (2013)**

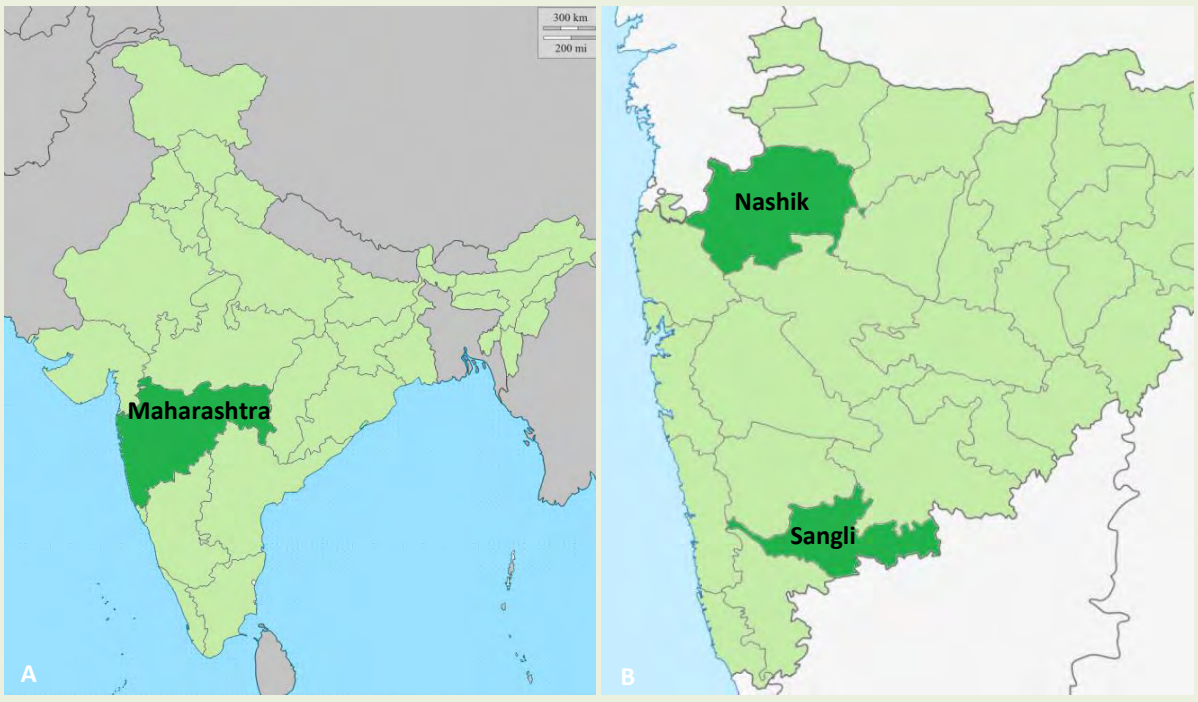


**Figure 2.2A Location of the State of Maharashtra in India. Source: adapted from Wikipedia (2014)**
**Figure 2.3B Location of Nashik and Sangli districts in Maharashtra. Source: adapted from Wikipedia (2014)**

By this point in my desk-based review I had answered my first questions; yes they grow grapes in India and yes they export these grapes to European countries. I had also positioned my understanding of Indian grape production within the wider context of agro-economic restructuring, in which States facilitate the conversion from low to high-value agricultural products, specifically horticulture. Within India, and particularly in Maharashtra, grapes, due to their high levels of remuneration, are one of the HVAE crops being supported by the State through the NHM and the MIDH.

# 3. WATER, LABOUR AND MUSINGS ON MARXISM

But although I had answered my questions regarding the production of grapes, I had not answered my questions pertaining to the impacts of producing grapes and particularly export grapes. I started to read around the topic but, as literature relating to Indian grape production is largely limited to best agronomic practices, I had to expand my parameters and look at export horticulture, and theory relating to export horticulture, in general. It soon became clear that although agro-economic restructuring and the conversion to HVAE, such as horticulture, is facilitated by a supportive policy environment, as seen by NHM and MIDH in India, it is predicated upon access to plentiful and secured supplies of fresh water and labour resources. It is these two resources that are essential for the production of the big, bright and blemish-free horticultural products that we, the European consumers, are accustomed to purchasing. My perception of the importance of these resources was cemented further by conversations with colleagues on their own thesis research and observations of horticultural production; see Groenemeijer (2014) for example. I am aware that in my identification of predicating factors I have omitted land resources and can identify three core reasons for this decision. Firstly time constraints limited scope. Secondly, as a student specialising in water resource management, I am inherently water-centric in focus. Finally, considering agricultural land choice is based upon water availability, water seems the more 'integral' resource to study.

This chapter provides a theoretical background regarding the relocation of horticultural production to the southern hemisphere and the consequences of these activities with regard to water and labour resources. Within this background I understand the predication of export horticulture upon water and labour resources using Marxist and Marxist Feminist theory. Although Marxism has been declared outdated from a multiplicity of perspectives it "remains far from dead" (Hartsock 2008, p. 167) and

> "Anyone who in these times fails to situate themselves inside of the capitalist relations of domination is...simply fooling themselves" Harvey (1992, p. 177).

Reflecting upon this statement I use this chapter to not only provide the theoretical background of my research but also to show the continued relevance of Marxist and Marxist feminist theory for understanding contemporary processes of global production. Please be aware that this is a skeletal outline and for a more in depth understanding the referenced texts are highly recommended as a starting point.

## FRESH WATER RESOURCES

Water is essential for the production of any crop; integral for photosynthesis and transpiration, contributive to the production of carbohydrates and responsible for stomatal regulation and the maintenance of turgor pressure, thus preventing wilting. Horticultural crops, compared to more traditional agricultural crops such as cereals, often have a higher crop water requirement (USAID, 2005), although this is obviously subject to crop type and localised climatic and soil conditions. Horticultural producers thus need access to larger quantities of freshwater resources for irrigation purposes than was often necessary for past land use. However in addition to being plentiful, water resources should also be secure and preferably on demand due to the short irrigation interval of horticultural crops. Failure to access sufficient and secure water will result in a reduction in crop quality and an increased likelihood that the product will not meeting exacting imports standards. As production costs of export horticulture tend to be high, economic losses as a result of insufficient and insecure water can be significant (Dixon & Aldous, 2014; Singh, 2006).

Increasing horticultural production and the associated rising water demand is occurring at a time of increasing water demand from other sectors including industrial and domestic use. By 2050 a 19 percent increase in global freshwater extractions is predicted (UNEP, 2007). Considering that 93 percent of this increase is anticipated to occur in developing countries (Cai & Rosengrant, 2002) it is an issue pertinent to export

horticulture, as it is to these countries that production is being relocated. In order to manage the increasing competition for water resources many developing countries, with the support of MFIs such as the World Bank and neo-liberal ideologies to 'free-up' water (NB not make it free), are embarking on a mission to reallocate water from low- to high-value uses in order to increase the economic efficiency of water. However reallocations can lead to a concentration of water resources by those with the agency to appropriate rights over the resource and within agriculture this is often by commercial farms and large-scale agro-export companies producing for export markets. Within a Marxist framing such water reallocations can therefore be understood as form of capitalist accumulation.

Capitalist accumulation was first theorised by Marx as Primitive Accumulation (PA) after studying the agro-economic restructuring in England and Wales between the 16$^{th}$ and 18$^{th}$ Centuries. At this time technological advances, as part of the industrial revolution, were enabling larger areas of land to be cultivated by a single owner. Productivity and production per unit area was increasing and excess produce could be sold on urban markets for profit. Perceived as a great opportunity for economic development, agro-economic restructuring through land consolidation ensued. Consolidation was achieved through the physical enclosure of land through the construction of fences and walls in order to transfer ownership rights from common to private property. The process of enclosure was legalised, facilitated and condoned through a number of Parliamentary Acts. In total around 3.58 million hectares of English and Welsh land was enclosed (Chapman, 1987). As the physical enclosure of land was expensive and facilitative Parliamentary Acts were often achieved through governmental affiliations and associations, land appropriation was primarily achieved by social and economic elites. Smallholders were dispossessed from their means of production and land resources became increasingly concentrated into the hands of the 'industrial capitalists' who were then able to command means of production for their own accumulation of economic gains. Those dispossessed from the land not only became the consumers of goods produced through new capitalist modes of production, but their dispossession also provided an available (and exploitable) agricultural labour force. (Marx, 1887)

Processes of dispossession, according to Marx, are 'primitive' in nature; occurring at a particular moment in history and providing the necessary prerequisites for the emergence of industrial capitalists and capitalist modes of production (Hartsock, 2008; Harvey, 2003). This primitive nature was first contested by Rosa Luxemburg (1951) and then by David Harvey in his "updated version of primitive accumulation" (Hall, 2013, p.1594) where Marxist theory on capitalist accumulation is contextualised within processes of globalisation. Both propose that rather than being primitive the processes of dispossession and accumulation are ever-present and contemporary, predicated upon the expansion into new territories (Harvey, 2003, 2004; Luxemburg, 1951). This is because in order for a capitalist system to continue there must be constant access to means of production, such as water and land resources, preferably at a declining cost, in order to enable continued economic accumulation. Agro-economic restructuring and the expansion of export horticulture to countries of the South can be perceived as a process of ABD. This is because production of commodities is expanded into new regions where means of production are cheaper than in the commodity destination. New and previously non-commoditised 'territories', such as water, are therefore being concentrated into the hands of commercial producers and incorporated into the capitalist market place whilst those reliant upon the resource are dispossessed (Harvey, 2003, 2004). Commercial producers then accumulate the economic gains.

Whilst recognising that processes of ABD are both historic and contemporary it can be observed that, compared with the past, continued there are "wholly new mechanisms of accumulation by dispossession" (Harvey, 2003, p. 147). These include i) intellectual property rights, ii) the commodification of nature, iii) the corporatisation and privatisation of public assets and iv) the rolling back of regulatory frameworks (Harvey, 2003, pp. 147–148). The following section will understand contemporary ABD and agro-economic restructuring and horticultural production in terms of mechanisms two and three; firstly because water is nature and secondly because water, within many agricultural systems, is a public asset.

In response to discourses on scarcity (seemingly developed in regard to the increasing demands on freshwater resources), neo-liberal principles and market environmentalism, supported by multilateral financial organisations such as The World Bank and the IMF, are increasingly being applied to water resources. According to Bakker (2005) both privatisation and commodification are involved in the marketisation of water resources. Although interrelated, these processes are concomitant. I understand privatisation as when

> "...activities, resources, and the like, which had not been formally privately owned, managed, or organized, are taken away from whoever or whatever owned them before and transferred to a new property configuration that is based on some form of 'private' ownership or control" (Swyngedouw, 2005, p. 82).

Commodification occurs when

> "...goods formally outside marketised spheres of existence enter the world of money...entailing changes in pricing, charging methods, and allocation and exchange mechanisms" (Bakker, 2005, p. 545).

Proponents of marketisation claim that clear and transferable water rights, achieved by privatisation and commodification, will increase water use efficiency by enabling the introduction of water pricing. Such pricing, according to neo-liberal theory, prevents overutilization of water resources by economically disincentivising the use of non-essential water (Ahlers, 2010; Bakker, 2005). The construction of water as a commodity has been an international process involving multilateral organisations such as The World Bank, IMF, UN and the WWC (Roberts, 2008) and commenced in the 1980s after the world economic crisis (Swyngedouw, 2005). In terms of water marketisation was first articulated clearly in the Dublin Principles (1992):

> "Fresh water is a finite and vulnerable resource… [and] managing as an economic good is an important way of achieving efficient and equitable use".

However processes of commodification and privatisation are key mechanisms for the concentration of water resources and the subsequent accumulation of profit as they "enable the capture of water for the market" (Ahlers, 2010, p. 225). Once within the capitalist system it is those that have the power, connections and economy that are able to appropriate the formal rights over the water resource. Their appropriation, in turns, results in the dispossession of those without the agency to formalise their rights (Swyngedouw 2005). Considering that these processes are often supported by respective States through new legal and institutional frameworks, "privatisation, therefore, is nothing else than a legally and institutionally condoned, if not encouraged, form of theft" (Swyngedouw, 2005, p. 72). It should be recognised, however, that water is inherently an "uncooperative commodity" (Bakker, 2005, p. 543), largely due to its geography; its natural, meandering and fluctuating state and its sociocultural importance. The former makes physical measuring and commodification difficult whilst the latter leads to strong opposition to attempts at measuring and metring. As a result water resources are generally privatised, rather than fully commoditised (Bakker, 2005).

Although the above Marxist theory accounts for class domination in terms of processes of accumulation; those that have the ability to capture the resource through state legitimised methods are often the social elites with money and connections, it fails to situate accumulation within a gendered framework. According to Hartsock (2008, p. 170)

> "the globalization of capital should be reunderstood as a moment of primitive accumulation which is very significantly marked by gender, that is, a moment which has very different consequences for men and women" .

Hartsock asserts that although she agrees with the primary mechanisms of accumulation as established by Harvey, these processes are inherently gendered. Although much of Hartsock's work looks more at gendered

accumulation in terms of labour and relations of production, which will be reviewed in the next section, gender is also a "pervasively important structure" for understanding ABD in terms of natural resources as processes of capitalist expansion generally build upon existing, often patriarchal, social hierarchies (Harriss-White 2005: p. 5). Gendered processes of accumulation are particularly critical when concerned with irrigation and water due to the pre-existing gendered hierarchies that dominate access to and distribution of water. However, particularly in India where society has traditionally been structured through a caste system, alternative social hierarchies for accumulation are also important to consider.

## FRESH LABOUR RESOURCES

However even if plentiful and secure fresh water resources are appropriated by horticultural producers, the big, bright and blemish-free fruits and vegetables we see in our supermarkets are not simply achieved. Rather they are the outcome of the application of large amounts of labour, not only during production and harvesting, but also in post-harvest processes that involve the sorting and packing of the product. Horticultural labour requirements are generally higher than traditional agricultural in order to ensure that the end product meets the high consumer (or at least importer) standards (Islam, 1990; World Bank, 2007). It is these high labour requirements that are used as one of the supportive discourses for agro-economic restructuring in the first place. Furthermore in order for commercial producers of horticulture to ensure maximum profit, labour should be cheap. The next section draws heavily upon Marxist and Marxist feminist theory to understand how plentiful and cheap labour is secured, particularly reflecting upon relations of production, social reproduction theory and the feminisation of the labour force.

Relations of production is how society is structured through the relations between groups and individuals and divisions of labour in order to ensure the existence of a labour force for the production of goods or the provision of services (Marx, 1887). In the case of this thesis, a labour force for globalised agricultural production. Relations of production are organized through the structuring of society in such a way, at certain levels of differentiation and expertise (Katz, 2001), that enables the construction of an elite class, the capitalists, and a larger proletariat body (Hartsock, 2008). The construction of social differentiation between classes results in the availability of a large, low-skilled labour force available for the production of commodities for capitalist markets. Put into ABD terminology, the proletariat can be understood as those who were dispossessed from their means of production by processes of privatisation and commodification. Their dispossession enables the utilisation of their labour for the accumulation of profits by capitalist producers (Marx, 1887).

Although Marx purports that capitalism does not produce relations of production, but rather supports the institutions that create them, he remains vague on the actual mechanisms used to achieve this (Chitty, 1998). His contribution is limited to the understanding that labour relations of production are reproduced through the provision of wages at such a level that they are low enough to ensure a profit, whilst high enough to entice the (male) children of commodity producers into the same industry (Federici, 2012). An attempt by contemporary Marxist Scholars to overcome this oversight is 'social reproduction theory', understood as

> "the social processes and human relations associated with the creation and maintenance of the communities upon which all production and exchange rest" (Bakker, 2001, p. 1).

According to Bakker (2001) there are three processes involved in the social reproduction of labour:

1. Regeneration of workers through the provision of a home, food and physical care
2. The regeneration of future workers through care for children
3. The reproduction of a future workforce through childbirth

The majority of this reproductive labour is undertaken by women who provide their services in the production and regeneration of future work forces for free. The ability to ensure the provision of this free labour thus involves the construction and division of these labour roles; men as producers and women as reproducers. This involves men being involved in the wage-based work, whilst women are 'housewives' involved in more household and subsistence roles. The 'housewifeization' of women results in a submerged economy of women's activities and the construction their labour as a free good (Mies, 1996). This submerged economy can be exemplified through agricultural production within which it is often (very wrongly) perceived that male household members are the 'farmer' whilst women have a supportive housewife role. This simplification enables the exploitation of women's 'free' labour.

The relocation of horticulture to the Global South is predicated upon availability of a large and low-cost workforce to carry out the required labour activities associated with production, harvesting and post-harvesting to ensure an export quality product. In order to meet this requirement, women have increasingly been incorporated in the wage-labour market (Acker, 2004). According to Mies (1996) although the low wages in the southern hemisphere in general attract global production activities, it is the availability and exploitation of female labour that really attracts export production.

> "…the exploitation and overexploitation of women's labour in this informal sector enable people in rich countries to buy inexpensive garments, handicrafts and year-round flowers, fruits, and vegetables from Asia, Africa and Latin America" (Mies, 1996, p. 358)

The exploitation of female labour is primarily achieved through the gendered organisation of production. This involves the placement of women in activities that require large amounts of labour, involve repetitive tasks and receive low remuneration. The requirement to do this is, according to Pepper (2012), is driven by the increasing competition on global markets meaning that international companies must continually strive to reduce production costs and provide a cheaper, more competitive product. Though these gendered divisions often do not fully reflect localised realities of constructed sexual divisions they are generally not so challenging to local social norms that they are deemed unacceptable (Pepper, 2012). It is anticipated that because women must also remain focused upon their reproductive roles, as providers and carers, they are less likely to unionize and make demands for higher wages and improved working conditions (Mies, 1998).

Gendered division of labour and exploitation and wage exploitation are, according to theory, achieved in two main ways. The first is through the 'nimble finger argument' (Elson & Pearson, 1981; Pepper, 2012) within which female labourers are constructed as having characteristics such as nimbleness, patience in disposition and softness in touch. These are perceived as beneficial within global production processes as they ensure that work is carried out efficiently and with care, thereby guaranteeing the product will meet export quality standards. These characteristics are constructed as natural abilities of women resulting in the deskilling of the work which legitimises lower wages for women undertaking production activities (Collins, 2002). In reality these skill sets are not 'natural' but learned through the socialisation of female children in particular ways; for example nimbleness through needlecraft (Elson & Pearson, 1981). Conversely, the role of males within global production are often defined more technically, thus legitimising higher wages (Collins, 2002). A second source of exploitation of women is through their "secondary status in the labour market" (Elson & Pearson, 1981, p. 96). Due to the 'housewife ideology' women's income is oft perceived as secondary to their male counterparts in the households. Therefore despite women's dual role in a globalised economy, both as reproducers and producers (Federici, 2012; Mies, 1996, 1998), employers can legitimise lower wages for women through constructions of it as supplementary to their husbands (Elson & Pearson, 1981).

As agricultural production globalises and more women are incorporated into wage-labour, there is also a feminisation of labour conditions, affecting the conditions under which both women and increasingly men work (Hartsock 2008). Feminisation of labour conditions is characterised by increasing flexibility; seasonal and part-time work, and informality; indicated by an absence of contracts and employment rights (Barrientos and

Barrientos 2002, Hartsock 2008). Although both men and women experience the feminisation of labour conditions, men tend to remain closer to the formalised end on an employment spectrum (Barrientos et al., 2004). The feminisation of labour conditions in high value agricultural production is a physical manifestation of attempts by producers to maintain their competitiveness in international markets. By keeping labour as informal and flexible as possible producers can load and offload labour according to external pressures such as market price and demand. This strategy enables producers to target maximum economic profit and is particularly important in agricultural markets where consumer demands, production regulations and environmental conditions are so variable (Barrientos and Barrientos 2002, Barrientos, Kabeer, and Hossain 2004). Although feminisation of labour conditions benefits producers, it enhances the economic insecurity of wage labourers. Furthermore it increases the vulnerability to exploitation as without employment contracts labourers are more susceptible forced overtime and poor working conditions. As employment is insecure, workers are often reluctant to make complaints as work can be easily lost (Barrientos, Kabeer, and Hossain 2004).

However despite these potential negative consequences of agro-economic restructuring, particularly in terms of the exploitation of female labour and the feminisation of working conditions, it is important to recognise that not all outcomes are detrimental. Rather "even where there are negative work attributes, there are also many positives" (Barrientos et al., 2004, p. 11). Wages derived from participation in global production can be used to improve household situations and invest in activities such as health and education. Furthermore for women incorporated into production, wages can increase individual autonomy as well as increase household power through increasing bargaining stake (Barrientos, Kabeer, and Hossain 2004). Furthermore, employment within the globalized agricultural labour force is often much more desirable than other 'opportunities' many women are faced with (Barrientos, Kabeer, and Hossain 2004).

# 4. CONCEPTUALISATION AND OPERATIONALISATION

These Marxist and Marxist feminist theories on accumulation by dispossession (along social hierarchies), relations of production, social reproduction and the feminisation of the labour force and conditions of labour influenced how I understood, and still understand, the predication of export horticulture, including grape production, upon fresh water and labour resources. However they were at too abstract a level to directly help me answer my moral quandary on whether I should eat grapes from India. They did indicate though, that in the conversion from traditional agricultural production to high value export commodities, such as horticulture, there are diverse experiences of winning and losing for different actors. A simplistic interpretation is of winning by commercial producers through their control over water and labour and subsequent accumulation of profit and losing by the dispossessed and the increasing number of women absorbed into, and exploited by, processes of production.

It is through gaining an understanding of these experiences of winning and losing by different actors within the context of export grape production that I planned to use in order to decide whether I should eat grapes from India. My logic was that if experiences of losing are too great within the production of the Indian grapes being sold in European supermarkets, then I will no longer purchase and consume these grapes. This chapter first provides an overview of the concepts I utilised within my research to enable movement beyond theory and undertake research at an empirical level in order to understand these experiences. It then includes an outline of the questions I used to operationalise this endeavour.

## VIRTUAL WATER

The first concept that I want to highlight in this chapter, not necessarily because it was conducive to operationalisation, but rather because it underlines how I perceive my own connection with the grapes is the idea of virtual water. Defined intensively, virtual water is the quantity of water utilised within the growth cycle of a crop (Allan, 2003). Extensively, however, it is a

> "...term [that] links water and food and in addition links the availability of these commodities across national economies" (Allan, 2003, p. 9).

It is through this definition that I conceptualise my own buying patterns. By going to the supermarket in the Netherlands/Denmark/the UK and purchasing grapes, I am not only purchasing a physical product. No, I am also purchasing a connection, albeit virtual, to the source of the grapes and the potential processes outlined in Chapter 3. Through this connection I perceive that I have a moral responsibility (joint with other consumers) for the impact of my (our) consumption patterns. It is this conceptualisation and moral dilemma that has been driving my interest in the Indian grapes from the beginning.

## THE FEMINIST COMMODITY CHAIN

The production of grapes in India and their exportation to Europe can be understood as a commodity chain, "a network of labour and production processes whose end result is a finished commodity" (Hopkins & Wallenstein, 1986, p. 159). A commodity chain consists of 'nodes'; points along the chain where the product (or product-to-be) and humans interact, causing not only a change in the state of the product but also changes in societal state through cultural and social productions and reproductions (Tsing, 2005). Using the idea of nodes I have diagrammatised the commodity chain of grapes from Nashik district in Figure 4.1. The nodes include those in terms of production, trade and consumption within India, as well as the transportation, purchasing and consumption in export markets, in this case Europe.

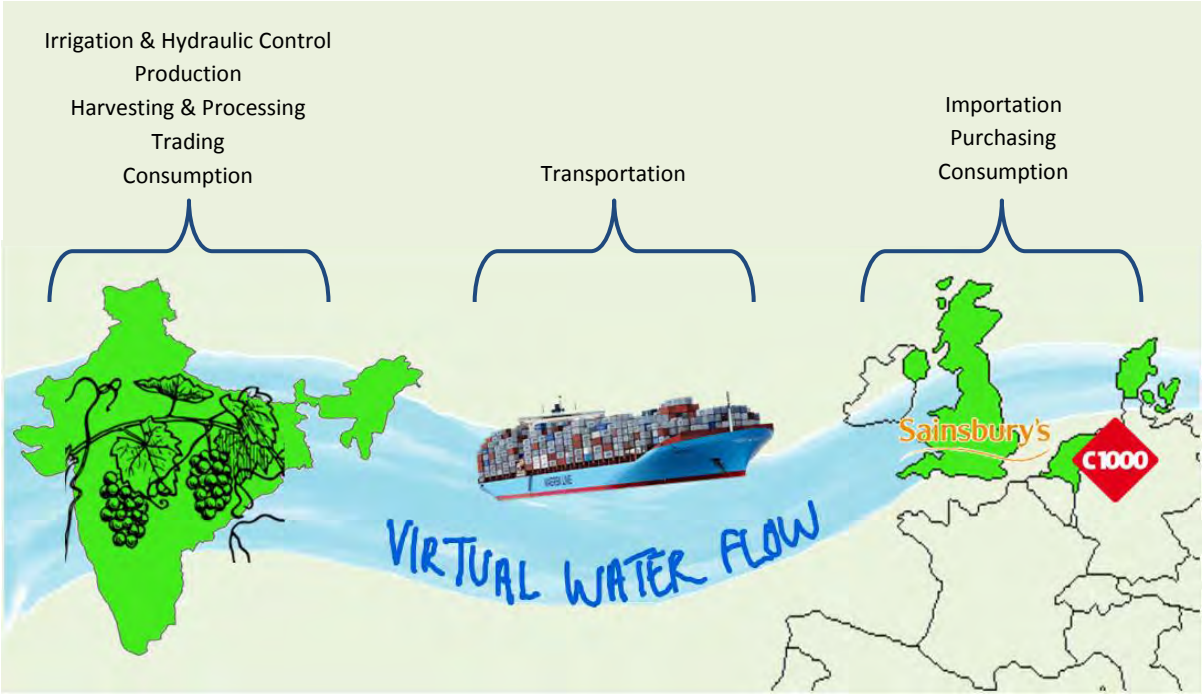


**Figure 4.1 Conceptualisation of the grape commodity chain integrating the notion of virtual water**

Traditional approaches for studying commodity chains are predominantly realist in nature, involving the tracking of added-value at each node of the chain from the beginning stages until the final product (Hopkins & Wallerstein, 1986). As I was interested in experiences of winning and losing, rather than added-value, this would have been an unsuitable for this study. Instead an alternative concept, the feminist commodity chain analysis, was employed. The feminist commodity chain involves 'tracking' globalisation within the lives of those assimilated by capitalism in order to offer "a commentary on globalization in terms of the uneven impacts upon everyday life" (Ramamurthy, 2004, p.766). This entails going beyond looking at added-value within the chain and recognising that "production produces more than just commodities; individual and collective identities are constituted in the process of production" (Ramamurthy, 2004, p. 741). The outcome of such an analysis is

> "a commentary on globalization that is more differentiated, layered, and complicated than realist commodity chains" (Ramamurthy, 2004, p. 743).

Due to time constraints restricting the fieldwork element of my research to three months I had to limit the number of nodes within which I conducted research. I chose the first three nodes: i. irrigation and hydraulic control, ii. production, and iii) harvesting and processing. The dominant reason for the selection of these nodes, over alternative nodes within the grape commodity chain, was that they were well aligned with my academic interests in water resources management and agricultural production.

## CONTRADICTIONS AND PERPLEXITIES

The third and final concept that I utilised within my research was contradictions and perplexities. According to Ramamurthy (2011) capitalism is inherently contradictory and the experiences of those incorporated within the practices and processes of global production will never be simplistic binaries of good and bad, positive and negative. Instead individuals and groups will experience a multiplicity of pressures, from an array of directions, which mean that an individual can simultaneously experience both winning and losing. This phenomenon was identified in the final section of the theoretical background in which it was asserted that women not only experience negative aspects of globalisation, the exploitation of their labour, but also positives aspects in terms of increased autonomy and power within the household through earning an independent wage.

The contradictions of capitalism can be understood using the notion of 'perplexity', defined within this research as "the meeting point where multiple ideologies that constitute the subject – cultural practices, temporalities, and place – conjoin and diverge" resulting in the "puzzlement of people as they experience both the joys and aches of every day" (Ramamurthy, 2003, p. 525). Although perplexities are a 'generalised' outcome of capitalist development, they are both subjective, due to differential histories, cultures and geographies (Ramamurthy, 2011, p. 1054) and transitory, neither temporally nor geographically fixed (Ramamurthy, 2003). When understanding experiences of winning and losing within each of the three nodes, it was therefore also important to contextualise individual's experiences within the concept of contradictions and perplexities.

## OPERATIONALISATION

The following box contains the questions that structured and operationalised my thinking when undertaking research. Within each of the three nodes I had selected for research I sought to answer the question who is winning and who is losing? By answering this overall question for each node I hoped I would then be able to answer my overarching research question; Should I eat grapes from India?

Although sub-questions are specific to each node, they do follow a pattern. This involves first looking at the technical processes involved with the node. An understanding of technical processes is essential to provide an understanding of the context within which experiences of the conversion to export grape production and global production occur. After understanding these technical processes I looked at the experiences of those involved in the node. Whilst contradictions and perplexities are not references directly within these questions I was attentive to their occurrence when seeking answers.

- **Who is winning and who is losing in the irrigation and hydraulic control node?**
  - How is irrigation practiced and hydraulic control achieved?
  - Can processes of water concentration be observed in the conversion to export grape production and is concentration State condoned and occurring along pre-existing social hierarchies?
  - How are changes in irrigation and hydraulic control experienced by different production groups in the research area?
- **Who is winning and who is losing in the production node?**
  - What labour activities are involved in grape production and how have they changed in the conversion to export grape production?
  - How has the conversion to export grape production influenced labour organisation in grape producing households and how is this experienced?
  - How has conversion to export grape production influenced the organisation of agricultural labourers and how is this experienced?
- **Who is winning and who is losing in the harvesting and processing node?**
  - How have labour activities relating to harvesting and processing changed in the conversion from non-export to export grape production?
  - How has the organisation of labour in harvesting and processing changed in the conversion from non-export to export grape production and how is this experienced by those involved?

In the next chapter I outline the research design I used to answer these questions. After this the following three chapters are devoted to each of the three nodes of the grape commodity chain and are structured in such a way to answer and discuss these questions. I end each of these nodal chapters with a discussion of who is winning and losing. I finish my thesis with a concluding chapter on whether I should eat grapes from India.

# 5. AN ATTEMPTED ETHNOGRAPHY

In March 2014 I took the return journey of my Indian grapes back to Nashik district, Maharashtra. Sitting on the bus from Pune (where SOPPECOM is based) I could easily identify I was nearing my destination when grape gardens, first sporadic then continuous, began to adorn the land adjacent to the highway. I was making my way to Ozar, a town 20 kilometres from Nashik city. It was around Ozar, in the irrigation command area of the Ozar Water Societies, that I planned to carry out my research. It was here that Seema Kulkarni and her colleagues from SOPPECOM had recently made observations of agro-economic restructuring from low-value food grains to high-value horticultural crops and particularly to grapes, increasingly grown for export markets (SOPPECOM, 2012). Within this chapter I first provide a background of my research area before discussing and reflecting upon undertaking ethnographic research.

## RESEARCH AREA

The Ozar Water Societies consists of the three tail-end water user associations (WUAs) of the Waghad Irrigation Scheme (Table 5.1). The irrigation scheme, which spans the Niphad and Dindori talukas of Nashik district (Figure 5.1), consists of the Waghad Dam and a 15 kilometre left bank canal and a 42 kilometre right bank canal. The Ozar Water Societies are located at the end of the right bank canal (Figure 5.2).

**Table 5.1 GCA and CCA of the WUAs that make up the Ozar Water Societies. Source: adapted from Paranjape, Joy, & Scott (1990)**

| Command Area | GCA (hectares) | CCA (hectares) |
|---|---|---|
| Mahatma Phule | 249 | 216 |
| Banganga | 432 | 340 |
| Jay Yogeshwar | 615 | 595 |
| **Cumulative** | 1,296 | 1,151 |


**Figure 5.1 Location of Niphad taluka and Dindori taluka in Nashik district. Source: adapted from Wikipedia (2014)**


**Figure 5.2 Map of the (right bank canal) of the Waghad irrigation scheme and the location of the Ozar Water Societies. Source: Paranjape & Joy (n.d.)**

The scheme's infrastructure was constructed by the Government of Maharashtra (GoM) between 1975 and 1984 to enable irrigated agriculture in a region where production had historically been limited to the monsoon season. In its initial years of operation the system was managed by the State Irrigation Department. However like many other centrally managed systems it succumbed to inequity, with water distribution in favour of the head end of the system. During this time it is estimated that 100 of the 1151 hectares of cultivatable command area (CCA) of the Ozar Water Societies were irrigated. (Paranjape & Joy, n.d.)

State failure in the equitable distribution of a public resource led to lobbying by Samaj Parivarthan Kendra (SPK)[1] and tail-end farmers, from the now Ozar Societies, who wanted a fairer system of water sharing. Additional support for these activities was provided by SOPPECOM, hence their connection to the area. The outcome of lobbying was the establishment of, and IMT to, three WUAs (Mahatma Phule, Banganga and Jay Yogeshwar) in 1991 that represent the tail-end of the system. Amongst the first WUAs in India, these three WUA (known collectively as the Ozar Water Societies), are unique in the fact that they are the outcome of bottom-up lobbying for IMT rather than top-down devolution within changing international water management paradigms (Paranjape & Joy, n.d.). My commitment to undertaking research in this locality was strengthened after learning the history of the Ozar Water Societies. As a student of water resource management I greatly admire bottom-up water movements and so was looking forward to the opportunity to meet those involved.

Management rights covering the entire Waghad irrigation scheme have now been devolved to 24 WUA and since 2003 are covered by a federation; the responsibility of which is to coordinate the management and use of water between all WUAs. This involves an annual meeting in October when, using assessments of dam storage, entitlements for each association are assigned. WUAs pay for the amount of water they receive and will provide this to their members for a charge. Water is delivered in rotations five times per year and, contrary to traditional irrigation provision, rotations start at the tail-end of the system to counteract historic inequity. (Paranjape & Joy, n.d.)

[1] SPK is a local civil society organisation with a socialist commitment to raising the fortune of all individuals, irrespective of background

## RESEARCH STRATEGY

The strategy I chose to undertake research in the Ozar Water Societies to understand processes of winning and losing and thus decide whether I should purchase grapes imported from India was an ethnography; a qualitative approach, the central aim of which is to develop a rich picture of people's lives by "getting inside the way each group of people sees the world" (Hammersley, 1992) through the study of their "social interactions, behaviours and perceptions" (Reeves, Kuper, & Hodges, 2008, p. 1020). It therefore seemed an apt strategy to understand experiences of winning and losing by those incorporated into the three nodes of the grape commodity chain that I planned to study. Recognising that my own situatedness affects by interpretations of the experiences of others, I was specifically aiming for a reflexive ethnography (Buroway, 2003; Noblit, Flores, & Murillo, 2003). The following section outlines and reflects upon participant selection and data collection within this strategy.

When designing and undertaking research I utilised the notion of triangulation, understood as the convergence of multiple evidence sources. According to Denzin (1978) these include multiple methods, multiple data sources, multiple researchers and multiple theoretical analyses. Within qualitative research triangulation is often used to increase the legitimacy of findings through the cross-checking of information, the idea being that if multiple evidence sources produce the same output then it is likely to be 'true'. However I do not fully agree; truth is subjective and multi-faceted and so why should a collective truth negate an individual's truth? When utilising triangulation I was therefore more interested in an alternative function. The utilisation of multiple evidence sources to establish a richer and deeper understanding of situations and experiences (Denscombe, 2010; Nightingale, 2003; Yin, 2003). To achieve this richer and deeper understanding I planned to implement methodological and data source triangulation. The types of method and the sources of data for each node are provided in . For methodological triangulation I intended to employ the two most popular ethnographic research methods; conversational interviews and participant observations (Reeves et al., 2008), whilst for data triangulation I aimed to speak with different groups involved in grape cultivation in the three nodes. Though I achieved data source triangulation in all three nodes, methodological triangulation was only achieved in the harvesting and processing node (Table 5.2). This is because the timing of my research meant I was only able to carry out observations within the production node.

**Table 5.2 Data source and method triangulation for the three nodes of the grape commodity chain**

| Node | Data Source | Method(s) |
|---|---|---|
| **Irrigation and Water Control** | • WUA Key Informants<br>• Export grape farmers<br>• Non-export grape farmers<br>• Non-grape farmers | • Interviews |
| **Production** | • Export grape farmers<br>• Non-export grape farmers<br>• Labourers | • Interviews |
| **Harvesting and Processing** | • Export labourers<br>• Non-export labourers<br>• Export unit owners/managers | • Interviews<br>• Observations |

### METHODS OF PARTICIPANT SELECTION

On my first day in Nashik district, after stepping off the bus from Pune, colleagues from SOPPECOM introduced me to the current President of SPK, Bharat Kawale (Figure 5.3). Sitting in SPK's office Mr Kawale was forthcoming and passionate about the Waghad irrigation scheme, the Ozar Water Societies and his continued connections with the farmers. He was, I realised, the quintessential 'Key Informant'; an individual with a "specialist knowledge...more extensive, detailed or privileged than ordinary people" (Payne & Payne, 2004, p.

153). Through Mr Kawale I was introduced to two additional Key informants; Ramnath Wable and Ravi Joshi, the Chairperson and the Secretary for the Ozar Water Societies (Figure 5.3). As the primary role of the three WUAs that make up the Societies is irrigation management, both individuals have specialist knowledge of irrigation practices, producers and agricultural production in the command area.


**Figure 5.3 Key Informants Bharat Kawale (left), Ravi Joshi (centre) and Ramnath Wable (far right)**

It was during preliminary conversations with my Key Informants I received my first introductions to the grape commodity chain of the Ozar Water Societies and the different individuals and groups incorporated into each of the nodes that I planned to study. Below I provide a brief summary of these introductions for each node and introduce the methods I used to select participants within each node.

**The irrigation and hydraulic control node**

Although there were instances of grape cultivation in the command area of the Ozar Water Societies prior to 1991 grape production has been growing in popularity since the establishment of the WUAs, IMT and the provision of assured water. Production of grapes for export markets commenced ten years previously, catalysed by the establishment of export companies in the region. In addition to non-export and export grape production, non-grape production is also occurring.

My initial idea for the selection of these three types of producer households (export grape, non-export grape and non-grape) was to use data from each WUA to identify households and stratify selection based upon factors such as land size and location. However after realising the limited records and contact details of producers held by the WUAs I adapted my approach. This involved Key Informants indentifying export, non-export or non-grape producing households within the command area that they had contact details for. Taking on a role as 'gate keepers' Key Informants initiated contact with these households; a beneficial decision as people were more willing to participate when they knew I was associated with their WUA. During meetings with households I met through this process I began implementing a process of snowball selection within which I would ask participants with whom I spoke to help me contact another household (Berg & Lune, 2012). The

process was effective as those with whom I had already spoken with could "vouch for my legitimacy" (Berg, 2001, p. 146) and, as one participant put it, explain I was interesting and would take up limited time. Using this approach I found ten households within each producer group to participate. Details of households are displayed in Table 5.3. Ten may seem arbitrary but a target was useful as participants struggled to understand why I wanted to speak to multiple households growing the same crops.

**Table 5.3 WUA, Caste and Size-Class of land holdings of participants households (Size-class has been determined using Table 5.4)**

| Export | WUA | Caste | Land size | | Land size-class |
|---|---|---|---|---|---|
| | | | ac | ha | |
| **1** | Mahatma Phule | Hindu Phulmali | 11.5 | 4.6 | Large |
| **2** | Mahatma Phule | Hindu Maratha | 7 | 2.8 | Medium |
| **3** | Banganga | Hindu Maratha | 10 | 4 | Medium |
| **4** | Jay Yogeshwar | Hindu Maratha | 9 | 3.6 | Medium |
| **5** | Jay Yogeshwar | Hindu Maratha | 20 | 8 | Large |
| **6** | Jay Yogeshwar | Hindu Maratha | 20 | 8 | Large |
| **7** | Jay Yogeshwar | Hindu Maratha | 40 | 16 | Large |
| **8** | Jay Yogeshwar | Hindu Maratha | 5 | 2 | Medium |
| **9** | Jay Yogeshwar | Hindu Maratha | 15 | 6 | Large |
| **10** | Jay Yogeshwar | Hindu Maratha | 10 | 4 | Large |
| **Non-Export** | **WUA** | **Caste** | **Land size** | | **Land size-class** |
| | | | **ac** | **ha** | |
| **1** | Jay Yogeshwar | Hindu Maratha | 15 | 6 | Large |
| **2** | Jay Yogeshwar | Hindu Maratha | 5 | 2 | Medium |
| **3** | Jay Yogeshwar | Hindu Maratha | 10 | 4 | Medium |
| **4** | Jay Yogeshwar | Hindu Phulmali | 3.5 | 1.4 | Semi-Medium |
| **5** | Mahatma Phule | Hindu Phulmali | 2.5 | 1 | Semi-Medium |
| **6** | Mahatma Phule | Hindu Phulmali | 2.5 | 1 | Medium |
| **7** | Mahatma Phule | Hindu Maratha | 2.5 | 1 | Semi-Medium |
| **8** | Banganga | Hindu Phulmali | 5 | 2 | Medium |
| **9** | Banganga | Hindu Maratha | 5 | 2 | Medium |
| **10** | Banganga | Hindu Maratha | 4 | 1.6 | Medium |
| **Non-Grape** | **WUA** | **Caste** | **Land size** | | **Land size-class** |
| | | | **ac** | **ha** | |
| **1** | Jay Yogeshwar | Hindu Maratha | 1.5 | 0.6 | Small |
| **2** | Banganga | Hindu Maratha | 2 | 0.8 | Small |
| **3** | Mahatma Phule | Hindu Phulmali | 2.5 | 1 | Small |
| **4** | Mahatma Phule | Hindu Phulmali | 1.5 | 0.6 | Small |
| **5** | Mahatma Phule | Hindu Phulmali | 1.5 | 0.6 | Small |
| **6** | Mahatma Phule | / | 3 | 1.2 | Semi-Medium |
| **7** | Mahatma Phule | / | 1.5 | 0.6 | Small |
| **8** | Banganga | / | 1 | 0.4 | Small |
| **9** | Jay Yogeshwar/ Mahatma Phule | Hindu Maratha | 6 | 2.4 | Medium |
| **10** | Jay Yogeshwar | Hindu Maratha | 6 | 2.4 | Medium |

**Table 5.4 Reference for size-class categorisation of land. Source: Basole & Basu (2009)**

| Area Owned (ac) | Size-Class |
|---|---|
| <1 | Marginal |
| 1—2 | Small |
| 2—4 | Semi-Medium |
| 4—10 | Medium |
| >10 | Large |

It should be noted that within households it was predominantly male members who participated in this node. The main reason for this was that women were busy and often unavailable to participate in long interviews that included the irrigation and hydraulic control as well as production (to be explained). As I was concerned with the reallocation of water between households, rather than within households, I prioritised the inclusion of female household members in the production node.

Upon reflection there are two biases that could have occurred during participant selection of these households. The first is that because the Ozar Societies are hailed as examples of successful participative water management it is in the interests of Key Informants to maintain this image. It is perhaps likely that the participants they helped me contact are those that have benefitted most from IMT and who were able to perform their successes best. Hopefully, however, I moved beyond this potential bias through the subsequent snowball selection. Secondly snowballing could have led to participant referrals along social hierarchies, such as caste. This bias will be discussed further within the chapter of the irrigation and hydraulic control node.

**The production node**

The grape cultivation calendar of the Ozar Water Societies is April – March. Although, due to the ever-growing nature of grapes in the area, production activities occur year-round, the highest intensity of production activities occurs from October until just before harvesting in March. To meet labour demand during this period grape producing households hire agricultural labour. Hired labourers will work in both export and non-export grape gardens and for many different producers.

Grape producing households within this node are those selected in the irrigation and hydraulic control node. For this node, due to my Marxist Feminist influences and the hidden economy of the labour of women within the production of export horticulture, I was resolute on ensuring that I was able to undertake interviews with female household members.

Agricultural labourers involved in production activities are also involved in the harvesting and processing of grapes in the following node. Although within this thesis the nodes are written in terms of the chronology of the grape commodity chain, research was not undertaken so linearly. My research commenced at the point of harvesting and so agricultural labourers who participated within this node were selected within the context of the harvesting and processing node. Methods of selection are therefore included in the following section.

**The harvesting and processing node**

Like the production node, harvesting and processing is reliant upon hiring labourers. However unlike the production node labourers are generally involved in export *or* non-export harvesting and processing. Not both. Furthermore whilst non-export harvesting and processing all occur 'on-field', processing activities for export grapes occur at the export unit of the export company purchasing the grapes from the producer. Labourers involved in export harvesting and processing are employed by the export companies, whilst those involved in non-export activities are employed by the producers themselves. From this introduction to the node by Key Informants I identified four participant groups with whom I wanted to speak regarding experiences of harvesting and processing. These were non-export labourers undertaking both harvesting and processing

activities, export labourers undertaking harvesting, export labourers undertaking processing and finally the owners or managers or export companies. There were differences in the selection processes of each group and these are outlined below.

*Non-export harvesting and processing labourers*

Contact with non-export harvesting and processing labourers was facilitated by Key Informants who would ring their contacts in order to find non-export grape gardens in which harvests were imminent and producers were willing for me to attend and speak with labourers. As research started at the end of March, the end of the harvesting period, the number of harvests occurring was declining. I therefore did not limit myself to those occurring within the Ozar Water societies but attended any in the Waghad command area. In total I attended nine non-export harvests, speaking with the different groups of labourers.

*Export harvesters and export processors*

My initial selection of export harvesters and export processors was also facilitated by Key Informants who, similarly to non-export, would ring contacts to find where harvests would be occurring. Occurrence so late in the season was equally limited and in total I attended three export harvests. Through Key Informants I also had the opportunity to visit one export unit where processing activities were being undertaken by labourers. However although these occasions enabled an overview of activities there was also a formal atmosphere that was restrictive to research.

In order to rectify this I wanted to arrange to meet export labours away from the formalities of the field or the export unit. Once again I spoke with my Key Informants who said that many labourers that work for the local export unit, Thompson exports, live within close proximity of their office. They arranged for a meeting with two labourers; one export harvester and one export processor who then acted as gatekeepers to other individuals working for the same company. But I also knew from discussions with these participants that much grape labour is non-local. However by this point in research, harvesting was over and most non-local labourers had returned to their native places. Fortunately one evening I met Madhukar; a Psychology graduate, an ex-soldier and now a security guard at a local government facility. After spending time with Madhukar he offered to take me to his maternal and paternal villages, about 70 kilometres from Ozar, where high numbers of inhabitants migrate for grape labour in Nashik district every year. This was a huge opportunity as without Madhukar communities it would have been much harder to find people willing to speak with me.

The number of export labourers from each village with whom I spoke, differentiated between harvesting and processing activities, are displayed in Table 5.5. Village 1 is in the command area of the Ozar Societies whilst Villages 2 and 3 are the paternal and maternal villages of Madhukar. It is participants from villages 2 and 3, as well as those in the non-export harvesting and processing, that also participated in the production node. Export labourers in Village 1 did not tend to work in grape production. During research it seemed that each village has an associated export company which provides employment to the village and to which the village provides labour. This is elaborated upon in the harvesting and processing chapter.

**Table 5.5 Taluka, number of participants and export company name of each of the three 'export' villages**

| Village | | Export harvesters | Unit labourers | Export company |
|---|---|---|---|---|
| **1** | Ozar | 4 | 7 | Thompson |
| **2** | Paternal | 7 | 7 | Tas-A-Ganesh |
| **3** | Maternal | 5 | 5 | Sonaka |

*Owners/Managers of export companies*

Unlike other participants I was unable to gain access to export company owners or managers through Key Informants, most likely because these individuals are based in offices in Nashik rather than the research area. Consequently I undertook the process of making contact myself. My ability to do so was aided by the fact that, as these individuals are involved in exports, they are highly proficient in English. When I started selecting export companies I was systematic as I was particularly interested in interviewing the owners/managers of those employing labourers with whom I had spoken. However I found that it was often difficult convince people to speak with me and many seemed sceptical of my interest in the export grapes. Although it is difficult to know the exact cause, many producers with whom I spoke indicated it could have been because of mistrust resultant from the negative effects of India's recent trade embargos with the EU[2] upon export companies.

In total I organised meetings with three export companies. Only one of the export companies, Sonaka, is associated with any of the participant villages; Village 3 (Table 5.6). Please note pseudonyms (in the form of export grape varieties) have been used for the export companies so their associated village is not identified.

**Table 5.1 Participant role and associated village for the three export companies**

| Export company | Participant role | Associated village |
|---|---|---|
| Sonaka | Owner | 3 |
| Manik Chaman | Manager | - |
| Sharad | Owner | - |

**METHODS OF DATA COLLECTION**

As previously mentioned, the two data collection methods I intended to use within this research were guided conversations and participant observations. Although I planned to triangulate both methods in all three nodes the timing of research meant I only achieved this in the harvesting and processing node. The following section reflects upon the implementation of these methods.

**Guided conversations**

An important distinction to make before I begin discussing the use of guided conversations is between guided conversations and semi-structured interviews. Both involve the pursuance of a line of enquiry through light questioning and, unlike structured interviews, give participants the space and opportunity to give their own opinions and insights (Mason, 2004). Not only can this enhance the understanding of the researcher, it is also conducive to the creation of a relaxed environment within which participants can feel more open and willing to answer questions (Yin, 2003). My own delineation between the two is that guided conversations are reciprocal with participants both asking and answering questions, thereby creating a more conversation-like experience. In my opinion this helps reduce power imbalances caused by a researcher extorting personal information participants without divulging anything in return. It is because of these reasons that I was aiming for guided conversations in most interviews. The following section reflects upon the success of this approach.

When conducting interviews with participants in all nodes I would start by saying that they should ask me any questions, at any point. In interviews in the irrigation and hydraulic control node participants were generally intrigued about my presence in the area and why *'a girl from a cold country where grape production is rare'* (my Ozar identity) was interested in Maharashtrian grape production. As a result most took the opportunity to

[2] In 2010 all Indian grapes were banned from import to the EU due to chlorocholine chloride residue exceeding MRL (Business Standard., 2010) and in March 2014 (whilst I was undertaking research) the EU banned Alphonso mango imports from India due to fruit fly infestations (Independent, 2014).

ask me questions and consequently most interviews within this node can be described as guided conversations. The conversation-like flow was certainly aided by my own agricultural background and when producers realised I had a practical understanding of agriculture (and could drive a tractor) they were more willing to divulge details as they realised their information would be appreciated and understood. Interviews with female members of non-export and export producing households for the production node were also predominantly guided conservations, although women often preferred to ask questions about my family and my future plans. There were of course instances when I did not achieve such a conversational approach, often when women were reluctant to ask questions. In role reversal, if I did not have to take an assertive position, I believe I too would have been equally reserved.

It was generally during interviews with agricultural labourers in the production and harvesting and processing nodes that I did not achieve guided conversations and interviews would best be described as semi-structured. Though, as with producer, I tried to stimulate a more conversational flow, the response was often "*What would we ask you?"*. Though I cannot be sure, I would speculate that the reason for this would be the outcome of perceived power differences. It is important to mention, however, that there were two notable exceptions to this 'rule': Manisha in Village 1 and Taie in Village 2. Both were female, married and of a similar age to myself. Unlike many unmarried female researchers I have met who have conducted research in India I did not pretend I was married. Although I recognise it is often useful for acceptance and, in some cases, safety I do not like the deception involved. During interviews with these two women I found that it was my unmarried status that stimulated questions, moving interviews from being semi-structured to being guided conversations.

During research I attempted to undertake all interviews with women, irrespective of node, away from men. This is because in past research I encountered difficulties when interviewing women in the presence of men, finding that men often answered questions or women were reluctant to answer. Though sometimes difficult to facilitate, in many situations I was able to sit with women whilst they prepared breakfast, chi or undertook labour activities. On occasions when I could not facilitate this I used two techniques to avoid the issues that I had in the past. Firstly, during interviews, my translator Sukanya and I would direct our body language and eye contact towards the woman. The success of this approach took time to develop as Sukanya would often automatically direct questions towards men. Secondly, if a man was interrupting continuously, I would politely explain that for my research I also needed the answers of women. I found that if I phrased it as a bureaucratic technicality it was readily accepted.

Interviews with the owners and managers of Export companies were the only interviews within which I did not aim for guided conversations. As participants were not located in my research area and it was a busy time of year for them, interviews were conducted over the telephone. A semi-structured format was incredibly beneficial for telephone interviews as it enabled flexibility whilst the pre-established question-answer routine prevented speaking over each other and the subsequent associated confusion.

**Participant observations**

The second research method that I strove to achieve within my research was participant observations. Before commencing this section, as with guided conversations and semi-structured interviews, it is important to distinguish between participant and non-participant observations. The former are when the observer participates in the activities being undertaken by the group or individuals whilst non-participant are when the researcher takes a more reserved role; observing but not actively undertaking the same activities. Participant observations were the desired type of observation as they enable a more tacit understanding of practices and experiences (Dewalt & Dewalt, 1998). However it was only during observations of non-export harvesting and processing that I succeeded in achieving participant observation, whilst observations of export harvesting and export processing were limited to non-participant (Table 5.7).

The reason for the difference was due to the control over the harvesting and processing activities. For non-export it was the producers that had control over their grapes and so were able to give me permission to join labourers, enabling me to undertake the same role; first harvesting the grapes and then processing them. During harvesting I would ask clarification questions to ensure my understanding of the processes but during the processing, when labourers had become more used to my presence, I would ask more questions regarding experiences of non-export harvesting and processing (as well as production). As we were sitting together, at the same level it was easier to talk (Figure 5.4). Conversely the strict quality requirements involved in export harvesting and processing and the control over processes by export companies meant that I was unable to be involved in labour activities. As such my observations were non-participant. Although I felt at the time that this restricted my understanding of the processes and understanding of experiences of winning and losing, on reflections its effects were mitigated through triangulation with semi-structured interviews.

**Table 5.7 Observation type for harvesting and processing activities**

| Participant group | Observation type | |
|---|---|---|
| | Participant Observation | Non-participant observation |
| Non-export harvesting and processing | x | |
| Export harvesting | | x |
| Export processing | | x |

**Figure 5.4 Participating in non-export grape processing**

The use of participant observations would have been a particularly desirable research method in the production node. When talking about practical activities, such as those involved in grape production, it is often difficult to fully articulate processes without enacting them. For example it is difficult to recall which foot is used to press the clutch pedal when driving without moving your feet. The conjunctive use of interviews and

observations would have enabled a more in-depth understanding of processes of production and the differences, in terms of labour organisation, between them. This ability to achieve this was impeded by research not being undertaken at a point in time where grape production activities were being undertaken.

## TRANSLATION

All, with the exception of three, interviews that I undertook were in Marathi; the dominant language of the research area. I employed one translator, Sukanya, for the duration of my research. The technical, social and ethnographic implications of my use of a translator are discussed below as they impact upon the legitimacy of findings. Although I start the discussion here, reflections continue throughout the results sections due to the centrality of translation to data collection.

### TECHNICAL IMPLICATIONS

Sukanya undertook her Bachelor's degree in English-medium and subsequently taught for a number of years at an English-medium school. As a result I perceived her English-Marathi and Marathi-English translations as good. However with no agricultural or water management background technical difficulties occurred.

The best example is from a conversation with Key Informants within which I asked *"How many kilometres of the right bank canal is lined?".* The translated answer I received was that *"The canal is not in a straight line".* Canal lining is the surfacing of the bottom and sides of a canal with a material more impermeable than earth, to reduce infiltration losses, but was taken by Sukanya at its literal meaning. After realising my mistake the issue was promptly resolved and such learning continued throughout the research for both myself and Sukanya. However although the technical translation issue was rectified in this and other situations it is difficult to know how many other non-rectified situations exist.

### ETHNOGRAPHIC AND SOCIAL IMPLICATIONS

Without being able to speak Marathi I was constantly reliant upon Sukanya for the duration of my time in the field and I was very aware of the implications this had in terms of being able to achieve a 'real' ethnography. When alone I was unable to undertake spontaneous conversations or 'hang out' (Dewalt & Dewalt, 1998) in order to meet people and build the rapport often required in for information sharing. Furthermore, as I was reliant upon Sukanya, I often had to ensure that she was comfortable in the approach to the research. One of the major implications of this was that I was unable to spend as much time away from the Ozar area, in Villages 2 and 3, as I would have done if I could have been more independent. By spending more time in these areas I believe I would have been more successful in building the rapport needed to move towards more conversational discussions and achieving a better understanding of experiences.

The social difficulties involved in translation were particularly related to caste and gender. During research many of my participants were from scheduled tribes (to be elaborated upon more in chapters 7 and 8) and during visits to their villages people tended to go out of their way to make both myself and Sukanya feel very welcome, particularly through food (Quote 5.1). On all occasions Sukanya declined food offered, the reason for which later transpired to be due to her belief that tribal people practice black magic. The actual impact of this upon interviews is unknown however, in role reversal, if a visitor to my home turned down my hospitality I would be less committed to helping them by answering their questions fully. Furthermore if there were external indicators to Sukanya's ill-ease at the situation, it is very likely there were other indicators; such as tone of voice or language used, that I struggled to pick up on but which could have affected the situation and the commitment of people to participate fully.

The majority of interviews that I undertook with women were, as previously mentioned, conducted away from men. In cases where I could not achieve this I found that Sukanya would ask the question to the man or men present, instead of the woman or women. I noticed this occurrence at an early stage of research and

attempted to mitigate it in a number of ways. These included explaining to Sukanya that it was the women's answers I wanted (within this context) and ensuring the use of positive body language in the direction of women. Sukanya had no experience of social research and her role as a translator and my role of being translated meant we both had a steep learning curve. Throughout the research we discussed how the translation was going and attempted to rectify some of the problems that we experienced. In some cases this was difficult to achieve as behaviour is often so engrained.

**Quote 5.1**

"We do not know you but it is part of our culture that if you come to our native place then we should look after you."

Chendra, 21st April 2014.

## DATA ANALYSIS

Data collected for the three nodes of the grape commodity chains was mainly qualitative in nature; focused upon the experiences of those involved with the grapes. During and after data collection I read and reflected upon interviews and participant observations, noting patterns that emerged within and between different groups of participants regarding experiences of winning and losing. I was also observant of contradictions and perplexities.

In the three following chapters I provide and discuss the findings and patterns for each of the three nodes. Within each node I use quotes from participants and photographs to support findings, improve clarity and emphasise the realness of experience. Please note that all photographs and quotes have been reproduced with the permission of their subjects. Names of participants have been changed if desired.

## A SEMI-ETHNOGRAPHIC OUTCOME

Although within research I was aiming for to achieve a reflexive ethnography I believe the outcome is better described as semi-ethnographic, although still reflexive. This is because of my limited ability to achieve guided conversations with many of the agricultural labourers, the non-participant observations for export harvesting and processing, though this was somewhat mitigated through triangulation, and the lack of observations within the production node. Furthermore language barriers and social implications of using a translator inhibited the rapport building and 'hanging out' that are vital in ethnographies to gain trust, mutual understanding and thus the commitment of others to participate in research. However despite these shortcomings there were also successes in the approach including the undertaking of research with many different groups of participants to gain a rich understanding of experiences. It is these experiences that I use within the next three chapters to answer the question of who is winning and who is losing in the irrigation and hydraulic control node, the production node and the harvesting and processing node of the export grape commodity chain?

# 6. THE IRRIGATION AND HYDRAULIC CONTROL NODE

Irrigation and hydraulic control is the first node of the grape commodity chain as it is the ability to demonstrate command over secure and plentiful freshwater resources that grape production, and particularly export grape production, is predicated. When conducting research for this node I sought to answer the question Who wins and who loses in the irrigation and hydraulic control node?'. Although I was influenced by Marxist theory outlined in Chapter 3 I wanted to understand experiences of winning and losing at the empirical level, recognising contradictions and perplexities. The questions I used to guide my research within this node, in order to be able to answer this question, are provided in the box below. Using these sub-nodal questions I first sought to establish the context of irrigation and hydraulic control in the Ozar Societies and whether and concentration of water resources was occurring, before looking at the experiences of different producer groups (export grape, non-export grape and non-grape).

- How is irrigation practiced?
- How is hydraulic control achieved?
- Can water concentration be observed in the conversion to export grape production and is it State condoned and along pre-existing social hierarchies?
- How are changes in irrigation and hydraulic control practices experienced by different production groups in the research area?

## HOW IS IRRIGATION PRACTICED?

The first question that I sought to answer in this node was how irrigation is practiced in the command area of the Ozar Water Societies and how these irrigation practices vary between export grape, non-export grape and non-grape production. For me it was important to have a sound understanding of the technical aspects of irrigation and, later on, hydraulic control as these provide the context within which water reallocations, water concentration and experiences of winning and losing occur. Within this section I look first at grape irrigation practices and then at non-grape irrigation practices.

### GRAPE IRRIGATION

Grape irrigation in the Ozar Societies is dominated by drip technology. This was an observation I made during my first days of research and which was confirmed by both Key Informants and producers. My understanding of grape irrigation practices, though developed throughout research, was primarily learnt during a morning with Nitin Kadam (Figure 6.1), a grape producer since the early nineties. After a brief first meeting Mr. Kadam invited me to return to his home the following day. I asked him questions regarding irrigation and he asked me questions regarding my Grandfather's farm and my education. Below I provide an account of irrigation processes, as well as a summary in Table 6.1. Both follow the grape cropping year April-March. It is important to recognise that irrigation practices for export and non-export grape production are identical.

Directly after harvesting in March grape gardens are surface irrigated, once in April and once in May. The aim is to wet the root zone of the vines and counteract potential water stress due to temperatures often exceeding 40˚C during the summer season. Surface irrigation coincides with the canal rotations which are delivered to producers on a time-basis, according to the number of hours they perceive necessary to irrigate their land. Surface irrigation is channelled through the fields using temporary bunds and the natural gradient to manipulate water direction (Figure 6.2). During these months grape gardens are also under drip irrigation. Drip irrigation is generally applied every other day for two hours, with each grape vine receiving 16 litres of water per hour from two drip nozzles (8 litres per hour from each nozzle). It should be noted that these timings and discharges are a standard and in reality, due to localised conditions and personal management

preferences, diversity exists. For example drip irrigation intervals ranged between one and three days and the duration of discharge from thirty minutes to two hours. During Kharif (monsoon season) drip irrigation is not needed as regularly and grape gardens are predominantly rain-fed. However if rain is limited and producers feel the soil is beginning to dry, drip may commence. After Kharif, for the remainder of the year, irrigation practices revert back to drip. In years when Rabi is dry an additional surface irrigation application in December is necessary.

**Table 6.1 Grape irrigation activities throughout the cropping year (a black x indicates a practice that always occurs whilst a grey x indicates a practice that is dependent upon climatic conditions)**

| Month | Season | Irrigation Activity | | |
|---|---|---|---|---|
| | | Drip | Surface | Rain-fed |
| April | Summer | x | x | |
| May | Summer | x | x | |
| June | Summer/Kharif | x | | x |
| July | Kharif | x | | x |
| August | Kharif | x | | x |
| September | Kharif | x | | x |
| October | Kharif/Rabi | x | | |
| November | Rabi | x | | |
| December | Rabi | x | x | |
| January | Rabi | x | | |
| February | Rabi/Summer | x | | |
| March | Summer | x | | |

#### NON-GRAPE IRRIGATION

Non-grape production within the command area of the Ozar Water Societies did not appear to be dominated by one particular crop and included wheat, tomatoes, okra, sugar cane and coriander. Irrigation practices for these crops included no irrigation (rain-fed), surface irrigation and drip irrigation. Surface irrigation, utilising the timings of the canal rotations, was the dominant irrigation practice and the use of drip irrigation was restricted to non-grape producers 4, 5, and 10 who were producing small amounts of cash crops such as tomatoes, okra and coriander.

## HOW IS HYDRAULIC CONTROL ACHIEVED?

To be successful in the production of any crop, crop water requirements must be met. This means that water which the crop cannot accrue naturally, through rain and soil water, must be provided by producers through irrigation. To achieve this, producers must demonstrate some level of control over hydraulic resources. In this section I highlight and explain the different processes utilised within the Ozar Societies to achieve hydraulic control. I do not, at this point, differentiate hydraulic control processes between types of producers.

#### CANAL ROTATIONS

As mentioned in the introduction, there are five annual irrigation rotations provided by the Waghad Irrigation Scheme that all producers within the Ozar Societies can access. Demand for rotation water is submitted by producers using demand slips to their respective WUA. As water provision is based upon time, rather than volume, farmers apply for a number of irrigation hours.

**Figure 6.1 Nitin Kadam with his Grandson and a grape branch**

**Figure 6.2 Surface irrigation in a grape garden**

**BOREWELLS**

Borewells are narrow wells used to access deep groundwater and aquifers in the region. Borewells within the area are generally 250-300 feet deep. Water is pumped mechanically and often stored in dug wells, and sometimes store tanks, from where it can be used on demand.

**DUGWELLS**

Dug wells in the area are generally a maximum of 50 feet, with a diameter of anything between 12 and 20 feet. In my research area dug wells are recharged in three ways:

1. The aforementioned pumping of groundwater from borewells.
2. Producers lifting water from their irrigation rotations and storing in the dug wells, thereby enabling the use of their irrigation turn as drip irrigation over a longer period of time, rather than as surface irrigation in one short period.
3. Recharge by percolation of canal water during rotations due to the canals being unlined.

**PIPELINES**

A further method of hydraulic control I observed within the command area of the Ozar Water Societies is at a larger scale than the previous methods and involves producers purchasing land close to an alternative, unlined water source; such as a river or the main canal of a neighbouring irrigation system. On these plots of land, which are no larger than the footprint of a house, dug wells are constructed to capture the percolating water from the unlined water source. A pipeline is constructed to pump captured water back to land within the command area. Pipelines varied in length between one and five kilometres.

**FARM PONDS**

A final method of hydraulic control I observed in the research area is the construction and utilisation of farm ponds. These are generally, as demonstrated in Figure 6.3A, elevated storage infrastructure that can hold large amounts of freshwater. There were also examples of more improvised farm ponds, such as an excavated pond (Figure 6.3B) or a dry stream bed. Farms ponds store water which can then be used on demand for irrigation. The water has three sources:

1. Pumped from dug wells or borewells on farm
2. Pumped, by the pipelines, from dug wells off farm
3. Lifting the water from irrigation rotations


**Figure 6.3A A 'standard' farm pond**
**Figure 6.3B An improvised, but still very large, farm pond**

**CONJUNCTIVE USE**

What can be observed within the Ozar Societies is that hydraulic control is often achieved by a sophisticated system of conjunctive use in which producers utilise a number of the hydraulic control practices outlined above. The importance of hydraulic control is particularly pertinent to grape production where, due to the short irrigation interval of the crop, irrigation must not rely solely on the canal rotations but also have access to alternative water sources for the majority of the cropping year. A simplified diagram of conjunctive use for grape garden irrigation is provided in Figure 6.4.

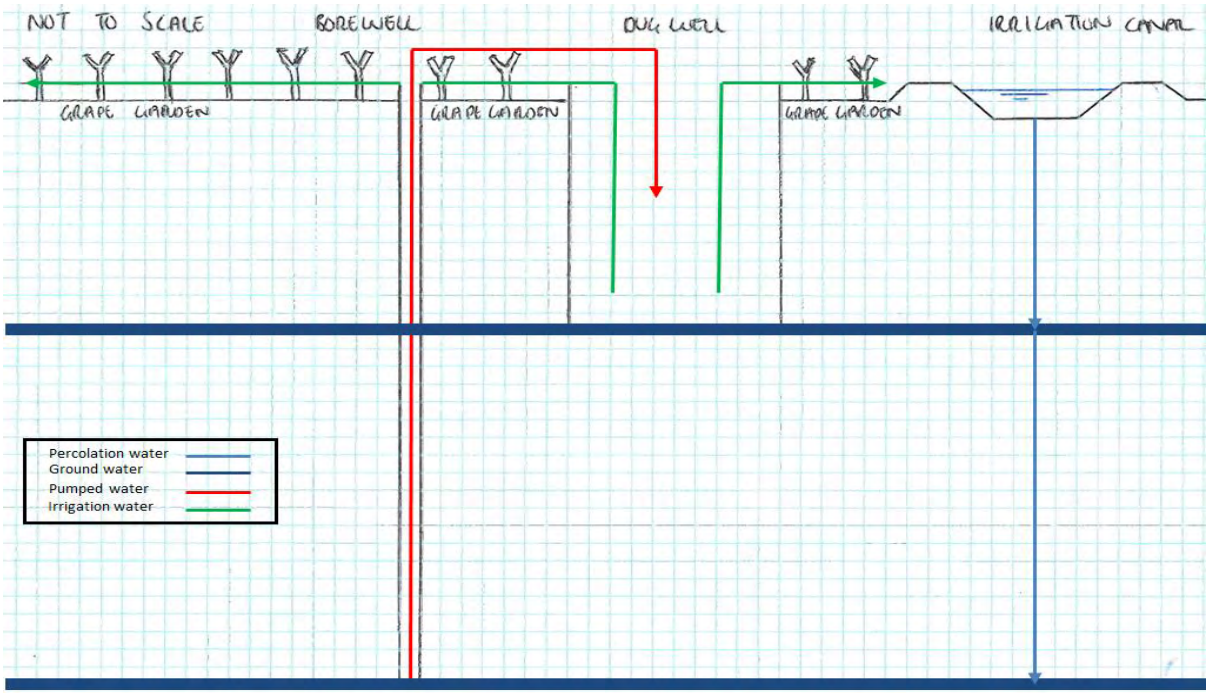


**Figure 6.4 Conjunctive hydraulic control for drip irrigation in the Ozar Water Societies**

## CAN PROCESSES OF WATER CONCENTRATION BE OBSERVED?

After gaining an understanding of the technical context of irrigation and hydraulic control through an overview of irrigation practices and hydraulic control infrastructure I was interested in whether, as purported by theory, water was being reallocated to high-value production and thus becoming concentrated under the control of grape producers, and particularly export grape producers. In order to make observations about concentration it was important to be able to make inferences regarding amounts of water controlled by different producers. As surface water within the command area is distributed on a time basis, rather than volumetrically, it was difficult to ascertain how much water producers were using. Although estimates could have been made through the measurement and extrapolation of field level discharge, this would have been inaccurate due the omission of water accessed using hydraulic infrastructure. As a proxy for volumetric water measurement I have used counts of irrigation rotations and hydraulic infrastructure. The assumption is that the higher the level of hydraulic control, indicated by high counts, the larger the quantity of water accessed. Higher levels of hydraulic control by one group compared to another would indicate a concentration of water resources in their favour. Table 6.2 displays the counts of irrigation rotations accessed per year by each participant household and Tables 6.3 and 6.4 display the hydraulic infrastructure counts. In order to enable of comparison I have only included 'functioning' dug and borewells in counts, with functioning defined as providing producers with a utilisable (as determined by participant) amount of water.

**Table 6.2 Number of canal water rotations (maximum 5) accessed by export, non-export and non-grape producers**

| Export | No. of Rotations | Non-Export | No. of Rotations | Non-Grape | No. of Rotations |
|---|---|---|---|---|---|
| **1** | / | **1** | 5 | **1** | 0 |
| **2** | 2 | **2** | 5 | **2** | 5 |
| **3** | 2 | **3** | 5 | **3** | 5 |
| **4** | 5 | **4** | 5 | **4** | 5 |
| **5** | 5 | **5** | 5 | **5** | 5 |
| **6** | 5 | **6** | 2 | **6** | 5 |
| **7** | 5 | **7** | 5 | **7** | 5 |
| **8** | 5 | **8** | 5 | **8** | 5 |
| **9** | 5 | **9** | 5 | **9** | 5 |
| **10** | 5 | **10** | 5 | **10** | 5 |

**Table 6.3 Hydraulic control using dug wells and borewells by export grape, non-export grape and non-grape producers**

| Export | Dug | Bore | Non-export | Dug | Bore | Non-grape | Dug | Bore |
|---|---|---|---|---|---|---|---|---|
| **1** | 2 | 1 | **1** | 3 | 1 | **1** | 0 | 0 |
| **2** | 2 | 1 | **2** | 1 | 1 | **2** | 0 | 1 |
| **3** | 2 | 1 | **3** | 2 | 1 | **3** | 1 | 0 |
| **4** | 3 | 2 | **4** | 1 | 1 | **4** | 1 | 1 |
| **5** | 2 | 3 | **5** | 1 | 1 | **5** | 1 | 1 |
| **6** | 3 | 4 | **6** | 1 | 2 | **6** | 1 | 0 |
| **7** | 4 | 2 | **7** | 1 | 1 | **7** | 1 | 1 |
| **8** | 3 | 1 | **8** | 1 | 1 | **8** | 1 | 0 |
| **9** | 2 | 2 | **9** | 2 | 1 | **9** | 1 | 1 |
| **10** | / | / | **10** | 2 | 2 | **10** | 2 | 1 |
| **Mean** | **2.56** | **1.89** | **Mean** | **1.50** | **1.20** | **Mean** | **0.90** | **0.60** |

**Table 6.4 Hydraulic control using pipelines and farm ponds by export grape, non-export grape and non-grape producers**

| Export | Pipe | Pond | Non-export | Pipe | Pond | Non-grape | Pipe | Pond |
|---|---|---|---|---|---|---|---|---|
| **1** | 0 | 0 | **1** | 0 | 1 | **1** | 0 | 0 |
| **2** | 0 | 0 | **2** | 0 | 1 | **2** | 0 | 0 |
| **3** | 0 | 0 | **3** | 0 | 0 | **3** | 0 | 0 |
| **4** | 0 | 0 | **4** | 0 | 0 | **4** | 0 | 0 |
| **5** | 1 | 1 | **5** | 0 | 0 | **5** | 0 | 0 |
| **6** | 1 | 1 | **6** | 0 | 1 | **6** | 0 | 0 |
| **7** | 1 | 1 | **7** | 0 | 0 | **7** | 0 | 0 |
| **8** | 0 | 0 | **8** | 0 | 0 | **8** | 0 | 0 |
| **9** | 0 | 1 | **9** | 0 | 0 | **9** | 0 | 0 |
| **10** | 2 | 1 | **10** | 0 | 0 | **10** | 0 | 0 |

Using the rotation counts in Table 6.2 I have made two observations. The first is that there are similar levels of control over canal rotations with the majority of households, irrespective of production type, utilising all five rotations. 'Non-grape household 1' is the only household that does not access rotation water and I reflect upon this lack of hydraulic control in the next section. The second observation is that there are a small minority of households (two export grape and one non-export grape producers) that only access two of the five canal rotations. This is not due to an inability to access the rotations but rather a conscious decision by producers as they can access sufficient water through their hydraulic infrastructure. According to Key Informants the occurrence of this in the Ozar Water Societies is uncommon as, due to their tail end position in the system, there is less water percolating from the main canal that can be captured using hydraulic infrastructure.

From the hydraulic infrastructure counts displayed in Tables 6.3 and 6.4 I have also made two observations. The first is that grape producers (both export and non-export) have a higher level of water control through infrastructure than non-export producers. The mean average number of dug and borewells for export and non-export grape producers exceeds one whilst the mean averages for non-grape producers are both less than one. The second observation is that export grape producers have a much higher level of water control than non-export grape producers, indicated by higher mean average number of dug wells and borewells per household. Additionally only export producers have pipelines. The information regarding farm ponds is more difficult to interpret from Table 6.4 as although it looks like there is similar use of farm ponds between export and non-export producers, the farm ponds of export producers were those in Figures 6.3A and B, whilst non-export producers has lower cost ponds with a lower water storage capacity.

From these analyses I made the interpretation that a process of water concentration is occurring, with the highest level of concentration being in the hands of the export grape producers and followed by the non-export grape producers, due to their higher levels of command over water resources through a combination of canal rotations and hydraulic infrastructure. As this finding is consistent Marxist theory on the concentration and reallocation of water for high value production, I started to think about the situation further. I could see as I was undertaking my research that the ability to control water resources was related to the economic capacity of producers to invest in hydraulic infrastructure. For example storage tanks constructed by producers with whom I spoke cost upwards of three lakh rupees (€3670) whilst investment in pipelines (including in investment in land and additional dug wells) ranged from four to twenty-two lakh rupees (€4894-€26917). But I also began to think of the concentration in terms of the theory that I had outlined in Chapter 3; Swyngedouw's (2005) assertion on the (non-overt) support of the State for reallocation through marketisation and Harriss-White's (2005) observation that accumulation occurs along pre-existing social hierarchies. In the following two sub-sections I reflect upon the relevance of these ideas in terms of the concentration of water resources by grape producers in the Ozar Water Societies.

**CONDONED BY THE STATE?**

**Marketisation**

At the State level in Maharashtra the marketisation of water has commenced through the 2002 Maharashtra State Water Policy. Citing the increasing competition for water resources from agriculture, industry and urban sectors, combined with the increasing need for conservation, the policy introduces the volumetric charging of water. In terms of agriculture this involves volumetric charging of water for the amount delivered to WUAs. After delivery, however, it is at the discretion of the WUA management board to decide upon how to charge users (IELRC, 2003).

The WUAs of the Ozar Water Societies have, up until now, made the decision not to charge water users volumetrically and have maintained hourly charging methods. This does not fully align with the Marxist theory as per unit of time provision does not have the same transferable and exchangeable rights as volumetric

charging that enable the 'freeing up' of water and concentration of rights by commercial producers. However, this is only up until now. During a meeting with Consultants from the World Bank[3] it was mentioned by Key Members of the Ozar Societies that they wanted to move towards the measurement of water by upgrading infrastructure to include measurement structures. This was positively embraced by the consultants specifically because it would enable the charging of water per unit used and to me this would be a step towards enabling the neo-liberalisation of water and the negative implications, as discussed in chapter three.

**Government resolution of non-payment for well recharge**

However in addition to the movement towards the marketisation of water through measuring I also observed alternative ways that the State is (non-overtly) supporting processes of water concentration. The first was through the 2009 Government resolution to stop charging producers for well recharge by seepage from public irrigation canals. Prior to 2008 all producers with wells within 35 metres of the centre point of a public irrigation canal had to pay for recharge. According to Key Informants, wells were regularly monitored in order to charge accurately. However in 2008 it was decided that charging would no longer be obligatory and it would be at the discretion of the irrigation management committees of WUAs (GOM, 2009). Although in the Banganga command area payment for well recharge continued for a short while, all three WUAs of the Ozar Water Societies no longer charge. The decision can perhaps be understood by the composition of management committees. Due to high levels of grape production within the command areas, grape producers are strongly represented on the committees and it is in their interests to not pay for well recharge. By removing the charge those with the economic capacity are able to capture water resources and reallocate them for their own, high value purposes.

The percolation and well recharge was also a topic that emerged during the World Bank event when talking about the conveyance efficiency within the Waghad irrigation scheme. Main canal loses are around 50 percent and were described by one of the Consultants as a 'catch 22'; although the water is being lost from the canals it is being utilised efficiently within the system through well recharge and so should efforts be made to increase efficiency through lining? Although I agree with this interpretation of efficiency as water losses within the system are much lower than canal water losses, the above hydraulic control count indicates the concentration of water by those who can afford to construct infrastructure. The question is therefore not about efficiency, but rather equitability.

**Support for grape production and drip irrigation**

A further, although perhaps more abstract way, that the State can be seen to be condoning processes of water concentration by grape producers is their support for drip irrigation through the provision of subsidies. Subsidies cover up to 50 percent of the drip irrigation infrastructure and are only available for economically productive crops, such as grapes (DAC GOI., n.d.). As drip irrigation is a precondition for grape production this drives the requirement for producers to increase hydraulic control and ensure the concentration of water resources, through increasing hydraulic infrastructure, in order to enable on demand water for the system.

[3] Whilst I was conducting research two consultants from the World Bank were writing an irrigation completion report on various irrigation investments throughout India. The Waghad Scheme was included in this report and a day was organised by the Waghad Federation in which the Consultants were shown around the system and introduced to producers. I had the opportunity to attend this event, observe the process and speak with various persons involved.

**ACCUMULATION ALONG SOCIAL HIERACHIES?**

When looking at whether the concentration of water occurred along social hierarchies I looked at two social hierarchies that are pervasively important for social organisation in India; caste and gender.

**Caste**

The castes of all households participating in this node are displayed in Table 5.3. From the table it is easy to recognise that Hindu Maratha dominate export grape production (nine Maratha and one Phulmali household), whilst non-export grape and non-grape households seem to be characterised by a more even mix of Maratha and Phulmali. Within the caste system Hindu Maratha are the 'higher' of the two, traditionally more socially and economically dominant. This more privileged position could have been conducive to achieving higher levels of hydraulic control and the concentration of water resources in their favour, particularly when considering the high financial costs.

However although Table 5.3 indicates the potential of concentration and reallocation along a caste-based hierarchy it is important to reflect that this result could be the outcome of a bias in household selection. Snowball selection is based upon the utilisation of social networks to establish a chain of participants. Considering the inherent importance of caste as a social network, the higher number of Maratha households in the export chain could be the outcome of the selection technique.

**Gender**

Considering Harris-White's (2004, p.5) assertion that "gender relations persist in being a pervasively important structure of accumulation in India" it seems important to analyse processes of concentration and reallocation within this context. Within this study, however, it is a difficult to assess. I came across two 'female-headed' households; 'Non-grape producer 1', Vimal Bhikule, and 'Non-grape producer 9', Shindubai.

Whilst Vimal Bhikule had no hydraulic control, Shindubai accessed both canal rotations and had some hydraulic infrastructure. It is therefore not possible to make any interpretations regarding gender and water concentration but would be an interesting topic for further investigation. It would be particularly interesting considering the explanation by Vimal Bhikule in Quote 6.1 that she cannot access canal rotations because of both distance and finances. When I asked my Key Informants whether she was too far from the irrigation canals they replied that *"she is wrong"* and *"she just doesn't understand how it works"*. When I asked why they did not inform her I was not provided with an answer. The situation could perhaps be interpreted as an outcome of patriarchal structures of irrigation bureaucracies, but if so why does it not affect Shindubai?

**Quote 6.1**

"I cannot access irrigation. My farm is too far away from the canals and I don't have the money to pay for the water."

Vimal Bhikule, 13th May 2014.

## HOW IS IRRIGATION AND HYDRAULIC CONTROL EXPERIENCED?

Within the following section I focus upon how the reallocation of water to high value production and the concentration of water resources by grape producers, and particularly by export grape producers, is experienced within the Ozar Water Societies. When attempting to understand the experiences of all three producer groups (export grape, non-export grape and non-grape), and thus the occurrence of winning and losing, I was open to contradictions and perplexities and that participants can simultaneously experience "the joys and aches of every day" (Ramamurthy, 2003, p. 525).

### EXPORT GRAPE PRODUCERS

Though there are exceptions, the production of grapes for the export market has been occurring in the command area of the Ozar Societies for around ten years. This has been enabled by the establishment of export companies in the area and the construction of infrastructure, the export units, where post-harvest activities can be carried out locally. These have simplified the exportation process for grape producers through the provision of a 'middle-man' between producers and purchasers.

According to export producers high levels of hydraulic control are essential in the production of export grapes in order to ensure a high quality product. Failure of the grape crop to meet export standards as a result of lack of water would affect the household very negatively due to the high costs invested in export production (to be explained in the next chapter). Producers have tended to increase their hydraulic control over time; starting with increasing borewells and dugwells and more recently moving towards pipelines and farm ponds. According to Ramnath Wable the construction of pipelines by export producers is the result of increasing water scarcity because of a declining monsoon and the subsequent reduced storage in the Waghad Dam. Whilst not denying this reason I speculate whether scarcity is also due to increasing hydraulic infrastructure capturing percolating canal water and forcing export producers to secure their irrigation water by alternative methods.

During conversations, men with whom I spoke tended to reify their experiences of water reallocations and their achievements in export grape production through material possessions; particularly motor vehicles (two-wheelers and four-wheelers as they were referred to by participants) and houses. As such I will explain the experiences of export producers using these items, supported by quotes from participants.

Prior to IMT and the establishment of assured canal water for irrigation within the Ozar Water Societies the economic condition of the (now) export grape producing households was far below its current level. As irrigation was restricted to the hydrologically fortuitous, i.e. those living within close proximity to a river, agricultural production was limited to low-value crops such as pearl millet, wheat and green gram for self-consumption and local markets. Both male and female household members would often have to undertake paid labour on the farms of others in order to make ends meet. During this time households generally did not possess motor vehicles and had to walk or bike everywhere. It is this pre-irrigation and hydraulic control situation that Ramnath Wable and Anand Schezwar are referring to in Quotes 6.2 and 6.3.

**Quote 6.2**

"In the past our economic condition was much worse. We had to bike everywhere. We would labour on our own land but in a bad year we would go to the farms of others and works as paid labour for them."

Ramnath Wable, 2nd April 2014.

**Quote 6.3**

"When I was a child we did not have what we have now *(Figure 6.5*C*).* I finished school early and helped with the farm work. For my brothers and cousins it is very different."

Anand Schezwar, 22nd May 2014.

Since the conversion to grapes and then the conversion to export grapes, the economic condition of export households has greatly improved. All households with whom I spoke owned at least one four-wheeled vehicle and generally multiple two-wheelers. Participants were often very proud of these vehicles, explaining in the past that ownership of two-wheelers, let alone a four-wheeler, was rare. This pride was highly beneficial as participants often offered to give myself and Sukanya a ride to our next destination. An incredibly visible change in the economic condition of export producers was the type of house that the household was residing in. Most export producers had recently commissioned the construction of large, colourful villas on the edge of their grape gardens. These villas were much larger than any other houses I visited in the research area and have been built in the period since producers commenced export grape production. The evolution of houses, as producers have converted from non-grape to non-export grape and then to non export grape production, can be seen in Figures 6.5 A, B and C.




**Figure 6.5A The family home of the Grandfather whilst producing non-grape crops**
**Figure 6.5B The family home of the Father whilst producing non-export grapes**
**Figure 6.5C The family home of the Sons whilst producing export grapes**

Whilst I was conducting research and speaking with export producers I felt that to only maintain a focus upon these positive reifications was perhaps a simplification of experiences of water reallocations to export grape production. I know firsthand that agriculture is hard work; vulnerable to both environmental and market conditions and these initial performances of successes seemed to gloss over potential contradictions and perplexities. So towards the end of interviews I would ask the simple question *"Are there negatives involved in export grape production?"*. The answer was always yes. These men were not reluctant to answer this question, only reluctant to initiate the topic. Export grape production, I was told, is a highly stressful activity due to its vulnerability to poor weather conditions. As annual production costs are high and investment in production is often reliant upon bank loans, grape failure can not only causes economic losses but also results in significant debt. Vulnerability is further exacerbated by the high proportion of land export producers have often dedicated to grape gardens (Table 6.5). As grapes are harvested annually a ruined crop means the household has little else to rely upon for the remainder of the year.

**Table 6.5 Proportion of total land holding utilised for grape production by export grape producing households**

| **Export Household** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** |
|---|---|---|---|---|---|---|---|---|---|---|
| **Grape area (%)** | 58 | 86 | 100 | 89 | 50 | 56 | 58 | 100 | 100 | 100 |

Experiences of stress are demonstrated in by Laxman Kadam in Quote 6.4. I was never sure whether the story was true, in the sense that it actually happened, or whether it was a narrative expression of vulnerability. Health implications, such as high stress, high blood pressure and heart problems, were commonly cited by other producers as negative experiences of export production. These perplexities; the joy of economic improvement and the ache of vulnerability are further exemplified by recent suicides of (male) grape producers. After a hailstorm in March 2014 destroyed 500 acres of grapes in Nashik (Times of India., 2014a) two grape producers committed suicide (Times of India., 2014b). In 2006, after a heavy November rainfall ruined grape crops, six grape producers in Nashik district committed suicide (IBN, 2010). To me, these suicides are reminiscent of the 'cotton suicides' of Maharashtra (2006 & 2008) and Andhra Pradesh (1998); although in lesser numbers. The high costs and riskiness of production associated with cotton, similar to grapes, resulted in increasing indebtedness (Ramamurthy, 2010) and a crisis of masculinity as men failed to meet social constructions of what is means to be male; in this context a successful producer that is able to provide for and support his family (Ramamurthy, 2003). The only perceived option was suicide.

**Quote 6.4**

"Grape production is highly stressful and very bad for your heart. Recently there have been hailstorms in Nashik which ruined many grape gardens. One farmer walked out of this house and looked at his grapes. They were all destroyed and he just dropped dead."

Laxman Kadam , 4th April 2014.

**NON-EXPORT GRAPE PRODUCERS**

The conversion to grapes by non-export producers followed a similar trajectory as export grape producers with conversion starting after 1991, catalysed by IMT to the three WUAs of the Ozar Water Societies and the subsequent provision of assured water. Initial grape area normally consisted of one acre before being expanded over time.

Like export producers, non-export grape producers reified their experiences of grape production through material possessions. Before the conversion to grape production the economic condition of the households, like export producers, was much lower, with very few people able to afford personal transportation beyond bicycles. Now the majority of households had multiple two-wheelers and a few, though certainly not the majority, had four-wheelers. A further identifiable difference in these reifications of economic experience was that non-export producers were not living in the large and colourful villas that have been springing up in the area. It should be recognised, however, that although they were generally living in more 'traditional' one storey homes, such as in Figure 6.5B, these had often been renovated and extended since undertaking grape production. An expression of the changes in the economic conditions of non-export households is given in Quote 6.5.

I found it very interesting that non-export grape producers had followed a similar grape growing trajectory as export producers but had stopped 'prematurely'; not moving on to the production of export quality grapes. I wanted to know whether this hiatus was the result of a lower ability to demonstrate hydraulic control, and thereby reallocate water for their own purposes, or whether there were additional factors involved. I began asking non-export producers why they hadn't started producing grapes for the export market. During conversations two reasons were commonly cited pertaining to non-conversion.

The first reason, identified by four of the ten non-export producers, was that they did not have access to large amounts of water on a secure enough basis that they felt confident in investing in export production. They attributed this lack of security to low levels of hydraulic control, in the form of dugwells and borewells, and the lack of finances to invest in higher levels of control. This reasoning is thus supportive on the notion that concentration of water, and thus the accumulation of subsequent profit through export production, is achieved by those that can afford to invest in hydraulic infrastructure in order to capture water resources.

The second and most common reason for non-conversion to export production, cited by the majority of non-export producers, was that the risk and vulnerability associated with export production was not worth the economic gains. Production costs for export grapes, according to participants, are around double that of non-export grapes due to higher labour requirements and the high cost of chemicals that meet the standards of the export markets (to be discussed further in the next chapter). Export production costs are often met using a loan, which increases the vulnerability of households to debt if the crop fails to meet export standards; a potential outcome due to both high export standards and the vulnerability of grapes to poor weather conditions. Therefore despite the economic opportunities offered by export production many non-export producers have made a conscious decision to avoid the negative experiences of export production (Quote 6.5).

**Quote 6.5**

"Life has already improved. Previously there was one motorcycle for the household and now there are three. I have one tractor. The house has been renovated. I could use a loan but why should I risk it?"

Sanjay Schezwar, 2nd May 2014.

During research I also identified a reversion away from grape production by (former) non-export producers. This observation was not a planned aspect of research but rather the result of ad-hoc meetings with producers in various locations including the sugarcane juice stand, the office of the Ozar Water Societies and the sitting room of my Ozar landlady. In total I spoke with four reverted producers. Due to the ad-hoc nature I did not include them in participant selection and as contact was always producer-initiated, talks were always

conversational. The conversion to grape cultivation by these producers followed the same, previously mentioned, pattern as other grape producers. However these four producers have now removed all grape gardens from their land and choose to grow alternative cash crops that have a lower water requirement. Although classified as cash crops they are, according to producers, less remunerative than grapes.

Whilst producers cited high labour requirements and being cheated by grape traders as minor contributors to their reversion from grape production, the major cause cited by all four was water scarcity. According to participants, when they first established grape gardens they had sufficient water through a conjunctive use of canal water rotations and dugwells and borewells. However as more people converted to grape production and those already producing grapes expanded the area under production, thereby increasing their water requirement, they began to experience a reduction in the water achieved through their hydraulic control methods. This was because competition for groundwater was growing with the increasing number of borewells and competition for percolating canal water was increasing with the growing number of dugwells. According to the reverted grape producers, they were (unlike many of the larger export producers who constructed more dugwells, borewells and new pipelines) unable to invest in more hydraulic control due to economic limitations.

These discussions with reverted producers further indicate that water is being reallocated to uses where producers can achieve high levels of water control. Within grape production, it is increasingly the export producers that can achieve this water control and so water is being reallocated to the highest value use; export production. These reverted producers can be understood in ABD language as 'the dispossessed', although perhaps a less dramatic dispossessed than imagined from the Marxist theory. The increasing reallocation of water to export, as well as non-export grape, production dispossessed these producers from their means of production (water for grapes) causing them to revert to a less remunerative crop. Although I met only four producers that had reverted from grape production, they told me that they were part of an increasing trend within the area. Although this is a negative situation, a couple of the reverted producers did say that the lower stress that they experienced as a result of not having to worry about water and the grapes was an upside (Quote 6.6).

**Quote 6.6**

"The grapes provided more money than I am currently getting with wheat and sugar cane, but it was also highly stressful as there was not enough water."

Darshar Shinde, 4th May 2014

**NON-GRAPE PRODUCERS**

Non-grape producers within my research area have the lowest level of hydraulic control and, as previously mentioned, in some cases no hydraulic control. The economic reifications of experiences of non-grape producers are very different from grape producers. Non-grape producers lived in the more 'traditional' houses which were less likely to have recently been renovated. I found no instances of car ownership amongst non-grape producers and although many households owned a two-wheeler, it was generally limited to one. When speaking with non-grape producers one question we discussed was why, unlike many others within the area, they had not converted to grape production. Although there were diverse reasons, two dominated; the high capital investment of grape production (including investment in hydraulic infrastructure) and their small land area inhibiting conversion. These are elaborated below.

Then first was that the high capital investment required for grape production was so high that it was inhibitive to conversion. It is to this inhibitor that Quotes 6.7 and 6.8 are pertaining. Investment would firstly involve the construction of hydraulic infrastructure, such as dugwells and borewells, in order to secure year-round water

provision through access to, and storage of, larger quantities of water. According to producers because they have a small amount of land their savings to make such investments are limited and potential loans are small due to having limited capital to borrow against. It is also important to recognise that an inability to invest in hydraulic control was not the only inhibitor, but also the inability to cover the costs of conversion itself. Conversion to grape production involves significant investments in land levelling, angles, wire, vines, bamboo supports and the labour to undertake the work. Per acre estimates of conversion ranged from three to five lakh rupees (€3868-€6400).

**Quote 6.7**

"Grapes need water all year round and I can't store the water that they need. I am a poor farmer and do not have enough money for storage. There is not much water from my borewell and I can't make sure the grapes will have enough water."

Narain Schezwar, 13th April 2014.

**Quote 6.8**

"We are unable to grow grapes because of water scarcity. There is not enough canal water during the year. If we wanted to grow grapes we would need a bigger well. Many other farmers can invest in these but we are financially weak and cannot."

Jija Palhal, 18th April 2014.

The second reason cited by many of the non-grape producers for not converting to grape production was that they were inhibited by the small land area that they possessed (Table 5.3). Most grape producers with whom I spoke converted one acre of land to grape gardens at a time; any less is not worthwhile as the efficiency of production and productive output is very low. By starting with a small amount of land producers gain experience in production and ensure the enterprise is profitable before upscaling. Furthermore, by not converting all the land to grape, at least not initially, producers have alternative crops to fall back on if they experience production problems. This is particularly important considering the vulnerability of grapes to weather conditions and that, in Maharashtra, grapes are only harvested once-annually. For many of the non-grape producers, who have smaller areas of land, converting the minimum one to two acres of land to grape would use the majority of land. This increases risk beyond an unacceptable level as there would be no alternative production which could act as a buffer.

From the understanding of experiences of non-grape producers so far it would be easy to conclude an outcome of losing in comparison to grape producers. However such a perspective would negate the experiences of non-grape producers now, compared with their past, rather than compared to other producers. For example although Granpat Shinde ('non-grape household 3') is unable to convert to grape production, the irrigation rotations provided by his WUA have enabled the production of higher value crops, including maize

and sometimes vegetables, thus contributing to an improved standard of living (Quote 6.9). A second example is Shindubai ('non-grape household 9') who made the decision not to convert to grape production due to inhibitive costs. Instead she converted to sugarcane production and diversified activities to include running a sugarcane juice stand and renting out a horse for weddings. Similarly to Granpat Shine, Shindubai has experienced an improved condition of living compared to her own past, even if her economic reifications are not as great as those of grape producers.

**Quote 6.9**

"Before I had irrigation my condition was so poor I was unable to purchase a bicycle."

Granpat Shinde, 13th April 2014.

## WHO IS WINNING AND WHO IS LOSING?

Within the irrigation and hydraulic control node I have observed the reallocation of water resources to grape production, and increasingly export grape production, through the concentration of water resources in the hands of grape producers using, ever more sophisticated and expensive, conjunctive water use. The concentration of resources, though not supported by marketisation, has been State condoned firstly through the resolution to remove payments for well recharge by seepage from public irrigation canals and secondly through support, in the form of subsidies, for drip irrigation.

In order to understand processes of winning and losing within the context of the concentration and reallocation of water towards export grape production, I looked at the experiences of the three producer groups of the Ozar Water Societies; export grape, non-export grape and non-grape. If I reflect upon my findings in a very black and white way, using the economic reifications of experience given by the producers themselves, then I could easily draw the conclusion that export grape producers win and non-grape producers, including both never converted and the reverted, lose. Non-export grape producers come in the middle somewhere. These inferences would be based upon the economic transitions of export grape producers with new houses and four-wheelers, non-export grape producers with renovated houses and multiple two-wheelers and non-grape households with two-wheelers and bicycles.

However such a simplistic assessment, based upon the economic accumulation of water concentration, fails to take into account the contradictions and perplexities experienced by producers. For example although export producers achieve the highest levels of water concentration and therefore the high levels of economic accumulation through the production of export-quality grapes, they also experience extreme vulnerability to environmental conditions, susceptibility to debt and subsequent stress and poor health. Though non-export grape producers may be considered to be losing in comparison to export-producers, their lower levels of risk and stress can also be considered as a form of winning. Furthermore though non-grape producers could be considered the losers, no non-grape producers with whom I spoke, I believe, would consider themselves to be losing. Most are doing the best they can with the resources they have. I am therefore reluctant to negate their agency by giving them this label.

So to answer my question: Who is winning and who is losing in the irrigation and hydraulic control node? There is no simple answer; export, non-export and non-grape producers are simultaneously winning and losing as export grape production grows and water is increasingly controlled by its producers.

# 7. THE PRODUCTION NODE

After water has been allocated to grapes through the demonstration of hydraulic control and drip irrigation practices, production activities ensure the growth and development of a grape crop suitable for its respective market. For export, this involves production activities that ensure the growth of the big, bright and blemish-free bunches that I expect to be, or at the least assume will be, available for purchase in my local supermarket. According to Marxist and Marxist feminist theory the transition to the higher labour requirements of export production is predicated upon the dispossessed and involves the increased incorporation of women, the gendered organisation of labour and the feminisation of working conditions. According to theory this results in experiences of winning by the capitalist producers, who exploit cheap labour and offload their production risk onto the labours, and experiences of losing by those who are vulnerable to exploitation.

Within this chapter I sought to understand '*Who is winning and who is losing in the production node?*' and whilst I was influenced by the theory I wanted to understand processes of winning and losing at the empirical level in the Ozar Societies, once again taking into account contradictions and perplexities. I aimed to achieve this by looking at how production activities have changed in the conversion from non-export to export grape production and how these changes are experienced by those incorporated. The following questions structured my thinking and, as with the previous node, I wanted to first establish a technical understanding of production activities, and how they have changed in the conversion to export production, in order to provide a context within which to then understand experiences. Considering that Key Informants identified the involvement of two different groups in production activities; the grape producers themselves and the hired labourers, I structured research to look at organisation and experiences of these groups separately.

- What labour activities are involved in grape production and how have labour activities changed in the conversion from non-export to export production?
- How has the conversion to export grape production influenced labour organisation in grape producing households and how is this experienced?
- How has conversion to export grape production influenced the organisation of agricultural labourers and how is this experienced?

## HOW HAVE LABOUR ACTIVITIES CHANGED IN THE CONVERSION TO EXPORT GRAPES?

This section involves a brief explanation of grape cultivation activities that occur throughout the production year (April-March), followed by the differences in production activities between the non-export and export grapes. Information regarding production was first garnered during my conversation with Nitin Kadam and later during discussions with other grape producers and labourers, as well as reading of literature.

### GRAPE PRODUCTION ACTIVITIES

In April, after harvesting, vines are 'pruned back' (Figure 7.1). This strengthens the vines, supports a beneficial vegetation-vine ratio and creates optimal conditions for the growth of good quality grapes. As the vegetative canopy re-emerges it must be managed and trained using supporting wires. Management should ensure that crop weight can be maintained, small tractors can pass between the rows and canopy cover allows sufficient light and ventilation whilst simultaneously providing protection from the elements (Figure 7.2). As second pruning, 'pruning forward', is undertaken in October to prepare for fruiting. This involves the removal of basal buds to ensure space for the growth and development of good quality grape bunches. Throughout the year management practices such as weeding, to prevent competition for water and nutrients, and the application of fertilisers, pesticides and fungicides occur. (NRCG, 2013; Shanmugavelu, 1989)

**Figure 7.1 Vines that have undergone back pruning**

**Figure 7.2 A well-managed canopy; sheltered but wide enough for a small tractor and still allows light**

It is from October until just before harvest, around February/March, that the intense period of grape cultivation commences. As grape bunches grow they undergo a process of thinning and dipping. Thinning involves the removal of berries from bunches to ensure remaining berries have space to grow and develop (Figures 7.3A and 7.3B). After thinning bunches are dipped in bio-regulators to increase berry size.


**Figure 7.3A A grape bunch before thinning. Source: Grapes Farming (2014)**
**Figure 7.3B A grape bunch after thinning. Source: Grapes Farming (2014)**

**DIFFERENCES IN ACTIVITIES BETWEEN NON-EXPORT AND EXPORT GRAPE PRODUCTION**

During research it soon became clear that the final production requirements of grapes are very different depending upon whether their destination is the export or the non-export market. Export market requirements are synthesised by Bahlasaheb Kadam in Quote 7.1. The sugar content number is a Brix measurement, size is millimetres and maximum chemical residue levels (MRL) are ascribed by importing governments. Conversely limited quality requirements are imposed upon non-export grapes; size, sugar content and blemishes are of little importance and there are no restrictions on the types and levels of chemicals used.

**Quote 7.1**

"Grapes bunches should look good and the berries should be uniform in size. They should be milky-green and there should be no blemishes, no bugs, no fungus. The bunches should not be too lose or too tight. The sugar content of the grapes should be 16 to 17 and the size of the grapes should be 17 to 22. Chemical residue levels on the bunches should not exceed the maximum standards of importing countries."

Bahlasaheb Kadam, 28th April 2014.

The higher quality requirements of grapes produced for export markets has also been found by Rath (2003) in her study on grape production in the Junnar taluka, 130 kilometres south of Nashik. From her own observations of the production practices utilised to achieve higher quality export grapes Rath (p. 481) asserts that

> "…the whole business of having to produce beautiful large bunches with big, clean grapes in them meant using new cultivation techniques".

This is a finding that I also came across during research in the Ozar Societies and the following section outlines the different production practices found in export grape production, compared to non-export grape production.

**Weeding and canopy management**

The first difference is that in export production much greater time and labour is dedicated to canopy management and weeding. This is to ensure good physiological conditions for quality production by ensuring sunlight provision whilst simultaneously ensuring shelter from the elements and preventing water and nutrient competition from weeds.

**Chemical usage**

The second difference is that in export production the type and amount of chemicals used are restricted by the import regulations of export markets. Conversely grapes to be sold on the domestic market, experience no such restrictions. Export grape producers must purchase labelled chemicals from a reputable source and these have a higher per-unit price. More care and attention must also be paid to the amount of chemical being sprayed, as well as timings and weather conditions, to ensure MRL are not exceeded.

**Thinning and dipping**

A third difference between export and non-export production is the number of times that thinning and dipping is carried out on each *individual* grape bunch. For export production bunches undergo the process around three times between October and January, although the exact number depends upon speed of development. As the non-export market makes limited demands on size, bunches only undergo thinning and dipping once as additional times would be an unnecessary expense.

**Wrapping**

A final difference in the production of export gapes is that around one month prior to harvesting *each* bunch of grapes in an export grape garden is individually wrapped in newspaper (Figure 7.4). This blocks UV rays meaning ripening is no longer influenced by sunlight and thus ensures that, both within and between grape bunches, there is uniform development of the berries. Moreover, wrapping protects grapes against chemical contaminations and pest infestations. The day before harvesting the wrapping is removed from each bunch (see cover photo).

**Figure 7.4 An unwrapped bunch of grapes produced under export conditions. Wrapped bunches can be seen in the background**

As production activities change in the conversion to export grape production, required labour hours for production increase due to the increasing number of activities as well as the increasing precision with which activities should be carried out. Consequently the costs involved in export grape production are much higher than non-export production, with some export producers estimating doubled costs. It is these costs to which producers were pertaining when explaining their increased stress and vulnerability under export conditions in the previous chapter.

## HOW IS LABOUR IN GRAPE PRODUCING HOUSEHOLDS ORGANISED AND EXPERIENCED?

Within this section I look at the organisation of labour within grape producing households and how organisation changes and how these changes are experienced in the conversion from non-export to export grape production. I have made the conscious decision to differentiate the organisation and experiences of labour between male and female household members due to my influences from the Marxist feminist theory in Chapter 3 on the gendered organisation of labour and thus gendered experiences.

### EXPERIENCES OF MEN

Conversely to production activities prior to grape cultivation, export and non-export households now employ large amounts of labour to undertake grape production activities, particularly in the period October until just before harvest (as mentioned Chapter 4). In the conversion to grape production male household members have become less involved in field-level agricultural activities and instead are now more involved in production activities at a more organisational; ensuring there is sufficient water and labour for cultivation for example. A list of activities undertaken by men from both export and non-export grape producing households is provided in Table 7.1.

When comparing the activities undertaken by men between export and non-export production there is no difference in the actual activities undertaken. Within export production, however, there was sometimes an increase in the amount of time that was taken to undertake each activity. These activities are highlighted in Table 7.1. For example, due to export regulations, more time had to be spent on ensuring the correct chemicals were purchased and used correctly. Furthermore additional time was also spent on then ensuring that the correct amount of chemicals were used and at the right times, taking into account weather conditions, to ensure that MRL are not exceeded. However export men with whom I spoke said that the increase in time was not such a large amount.

One interesting difference that I did find between the experiences of production demonstrated by non-export and export men was the increasing tendency for export men to describe themselves and their activities using the term managerial (Quote 7.2). It is interesting that, considering the limited differences between their non-export and export production activities, participation within export production leads to a different understanding of oneself. It could perhaps be speculated that it is this 'managerial exporter'; a male export grape producer who can successfully manage production and provide his family with the economic reifications outlined in the preceding chapter, that is becoming the hegemonic masculinity. This of course would require further research.

**Table 7.1 Production activities undertaken by males in export and non-export grape producing households**

| **Production Activities** |
|---|
| Sourcing labour |
| Sourcing and purchasing chemicals |
| Liaising with purchasers (traders and export units) |
| Organising production calendars |
| Timing, calculating and monitoring chemical applications |
| Spraying chemicals |
| Hydraulic control |
| Irrigation |

**Quote 7.2**

"There is a changing role of farmers. Now we employ labourers whereas in the past we had to do the labour ourselves. Now we oversee, find labour, purchase chemicals. We do whatever is needed. We *manage* everything. Talk to export units, ensure correct practices, and make sure they are using the correct chemicals and the correct amount."

Kedu Hiwale, 4th May 2014.

**EXPERIENCES OF WOMEN IN GRAPE PRODUCING HOUSEHOLDS**

This section is an articulation of the role of women from grape producing households and how this role has changed with the conversion from non-export to export grape production. It commences with a description of the activities these women undertake regarding grape production and the difference in activities between non-export and export production, before moving on to understanding the experiences of these changes.

**Grape production activities**

During the grape production 'season', from October to around January, the role of women in grape producing households is to oversee the agricultural labourers hired to undertake the manual labour in the grape gardens. Women instruct labourers on what to do and when to do it, observe that work is being carried out correctly and efficiently and ensure that work stays on schedule (Quote 7.3). In addition, if there is a shortage of labour, women will often participate in some of the labour activities. Outside of the grape season grape production activities are carried out by household members, often the women. These include weeding, training vines, cutting tender leaves, drip work and applying chemicals.

Women's involvement in grape production can be understood as their productive role, contributing to the economic situation of the household. But women with whom I spoke have a dual role, as mentioned in Chapter 3; responsible also for reproductive and regenerative activities (Quote 7.3). These include household work and childcare activities. Although in general the dual role of women existed within this research there were exceptions. For example, in one household I met two daughter-in-laws; one took responsibility for productive activities whilst the other took responsibility for the majority of reproductive activities.

**Changes in activities in the conversion from non-export to export production**

During conversations with women from export producing households I was interested in understanding how their role has changed in the conversion from non-export to export grape production. According to the majority of export women their work has increased. Two main reasons were cited. Firstly there are additional activities, such as wrapping and multiple dippings and multiple thinnings (as previously described) that must be undertaken. Although household women do not do the labour themselves, they do oversee the hired labourers in the field. Increased activities thereby increase the number of hours and days that they undertake this work. Secondly, as grape output quality requirements are higher for export production women must spend longer amounts of time ensuring that work is carried out meticulously. This increases both the time needed to oversee labourers during the grape season, as well as the time required for their own grape labour activities out of season. Women continued to undertake these activities in addition to their reproductive role. The role of household women in export production is well represented by Vilas Satvhai in Quote 7.4

**Quote 7.4**

"My wife does 90 percent of the [household] grape work."

Vilas Satvhai, 5th May 2014.

It would, at this point in my analysis, be easy for me to conclude that women within grape producing households are victims of a patriarchal system. Findings are consistent with the traditional Marxist Feminist theory of Mies (1982, 1996, 1998) that global production is predicated upon the exploitation of the dual role of women. This perspective is particularly relevant considering the 'submerged economy' of these women's labour through its invisible nature. Women's role in grape production was never mentioned by Key Informants and at the World Bank meeting, which was dominated by grape producers, there were no women present (aside from myself and Sukanya) (Figure 7.5).


**Figure 7.5 Grape producers with World Bank Consultants at the Ozar Water Societies office**

To make such a conclusion, however, would be ignorant of the agency of women and the perplexities associated with capitalist development. Although women said they had an increased workload as a result of the conversion to export grape production, all followed this statement with *"but"*. But in the past we had difficulties in paying for education. But in the past we had no money and no transportation. But in the past we had to labour on the farms of others. Now, they told me, they have a new house, a four-wheeler, multiple two-wheelers. They do not have the same economic difficulties as in the past and their children are not only getting a school education but are also attending university. These sentiments are best represented in Quote 7.5, an extract from a conversation with Mangal Davane.

**Quote 7.5**

"After I finished 12th Standard I wanted to go on to study Sciences at University however my parents said that I must get married. This is always something I felt disappointed about but now I have been able to ensure that my own daughter could study at University. Her successes *[indicating academic trophies]* are payment for my hard work."

Mangal Davane, 6th April 2014.

## HOW IS AGRICULTURAL LABOUR ORGANISED AND EXPERIENCED?

In order for grape producers to ensure that they are able to meet the labour requirements of the grapes they, as previously mentioned, employ agricultural labourers to undertake the production activities, particularly during the period October until just before harvesting. This section looks at the organisation and experiences of agricultural labour in terms of feminisation of labour and labour conditions, gendered organisation of roles and wages received. Labourers work in groups, generally consisting of relatives and neighbours. During the grape season groups will be employed by many different grape producers to undertake the seasonal production activities as and when work is required. Groups do not work exclusively on non-export or export production and so I spoke with labourers about their experiences in terms of both forms of production.

During research all agricultural labourers I met who undertake work on the grape gardens in the Ozar Water Societies, irrespective of whether grapes were export or non-export, were migrant labourers from the talukas of Peth and Surgana (Figure 7.6). Although this could have been a bias in selection, I did travel to Peth taluka to undertake interviews for example, Key Informants confirmed that there were only a small number of non-migrant labourers working in grape gardens. Migrant labourers working on grape production in the command area of the Ozar societies were all from Scheduled Tribes, predominantly Kokani. Labourers normally migrate to Nashik district in October. Unlike the flat plains of the research area, that are conducive to grape production, Peth and Surgana are mountainous regions and participants often originate from small villages. According to the labourers with whom I spoke, there are few opportunities in the region for paid income so household cultivate rain-fed agriculture during the monsoon season and members migrate for the remainder of the year (Quote 7.6). A similar predication on migrant (tribal) Thakar labour was also observed for grape production in the Junnar taluka by Rath (2003). Like the labourers with whom I met they cultivate household land for consumption during the monsoon and migrate for paid grape labour for the remainder of the year.


**Figure 7.6 Location of Surgana and Peth talukas in relation to Dindori and Niphad talukas**

This is an interesting finding as, conversely to Marxist theories on ABD, the labour for production is not provided by those dispossessed through the concentration of water. If this were the case it would be the non-grape producers, the reverted and the never converted, undertaking grape production labour. However although these labourers are not those dispossessed by processes of accumulation, they could perhaps be understood as a 'dispossessed population' in terms of governmental policy (please be aware that this is speculation by a 'left wing feminist that cares about the earth'). By not investing in politically marginalised areas and populations the State is ensuring that there will be a large workforce available to meet the increasing labour requirements of agro-economic restructuring.

**Quote 7.6**

"We come from Peth after Divali. In our native place we do agriculture but only during the rainy season. We mainly grow rice and a few other crops to eat but we cannot produce enough for the whole year. We migrate so we can buy food, medicine, clothes, school materials and pay for household repairs. We need to do labour so we come back to the region every year."

Migrant labourers, 5th April 2014.

**FEMINISATION OF LABOUR AND FEMINISATION OF LABOUR CONDITIONS?**

During interviews it soon became clear that the composition of labour groups for grape production were not highly feminised but tended to consist of both men and women in quite even numbers. This is counter to the Marxist feminist theory of Chapter 3 in which it is asserted that high value production is predicated upon the increasing incorporation of female labour, compared to male labour (Acker, 2004; Mies, 1996). Furthermore as there is no difference in the gender composition of labour groups in export production compared to non-export production, the conversion to export grapes cannot be seen to have an impact upon the incorporation of women into global production within this node.

However although the labour force has not necessarily become feminised, conditions of labour within both non-export and export grape production are feminised. Employment is seasonal and temporary; October-harvest, and flexible and informal; labour groups do not have formal contracts and work is based upon informal spoken agreements. As these characteristics are present in the labour for both non-export and export production they could be considered a characteristic of high-value agricultural production in general, in line with the work of Barrientos & Barrientos (2002) and Hartsock (2008), if not just high-value export production. However I would speculate whether these conditions of seasonality, flexibility and informality are a new phenomenon for these labourers. Older labourers with whom I spoke had been undertaking labour migration prior to the grapes and I find it unlikely that they would have experienced any higher levels of formality for labour activities on more traditional agricultural crops. An further observation is that male and female labourers both experience the same level of informality, with men, conversely to findings of Barrientos et al (2004), no closer to the more formalised end of the employment spectrum

**GENDERED ORGANISATION**

When looking at the experiences of agricultural labourers within grape production in the Ozar Societies I wanted to understand whether conversion to export production activities resulted in a change in the organisation of labour; particularly in terms of gendered organisation. In order to understand the outcomes of this section it is important to understand that labour groups, whether working in non-export or export grape gardens, are paid on a targeted basis. This means that rather than labourers being paid a daily wage each labour group will be paid a pre-agreed amount for the completion of a production activity for an area of grape garden. By linking the individual wage to group productivity targeted wages increase internal monitoring, thereby ensuring that all members are doing maximum work (Ramamurthy, 2004).

When speaking with labourers, the organisation of labour for production did not seem particularly gendered. Most labourers said that within groups both men and women undertook the same activities as, due to being paid on a targeted basis, it was most efficient for all group members to work on the same activity. In some groups one gendered division of labour was asserted. Weeding activities were carried out by female labourers. What I found most interesting, however, was that some groups did not have this division and both male and

female labourers, for the sake of efficiency, undertook weeding. Targeted wages could perhaps, in this context, be seen as contributing to reducing a gendered division of labour that is very prominent within India.

Whilst Rath (2003), in her study on grapes in the Junnar taluka, found gendered organisation in terms of women undertaking weeding she also found that only men were undertaking girdling. This is the removal of a strip of bark from the trunk of grape vines in order to facilitate the circulation of nutrients. Interestingly girdling, let alone the gendered organisation to undertake it, did not emerge in my research. It could be that girdling is not undertaken in the Ozar societies. However this seems unlikely considering its criticality to production. Its omission could be due to labourers and producers forgetting to mention it. However as I triangulated my data sources I assume it would have been mentioned at least once. I think perhaps it is rather an outcome of translation, within which Sukanya, unaware of the Marathi-English translation, omitted it from answers. Not only is this an example of the difficulties of translation, it also shows how observations of production activities would have been a valuable method in this node.

As gendered organisation of labour for production activities was limited within both non-export and export grape production within the Ozar Societies, I believe this indicates that conversion to production for global markets has not influenced the gendered organisation of labour within this node.

**WAGES**

When speaking with labourers, perhaps due to the semi-structured nature of interviews, it was hard to discover experiences of their incorporation into grape production activities beyond the topics that I developed myself. As a final topic of experience I looked at the wages received through production activities. This was inspired by the gendered differences of wages in global production, as well as the benefits of wages for women, which were highlighted in the theory of Chapter 3.

According to labourers, targeted wages for grape production activities are divided equally between all group members, irrespective of gender. This is because all members undertake the same activities and thus are paid accordingly. This provision of the same wages is counter to the theory in Chapter 3 in which wages of men tend to be higher than women (Federici, 2012; Mies, 1996), although this is often justified by a gendered division in the organisation of labour which is absent in this situation. According to participants the equal division of pay between men and women working in grape production is the same in both non-export and export production, once again indicating that the conversion to export grape cultivation has had little impact upon gendered experiences in this node. Because labourers were paid on a targeted basis, per person daily wages were divergent and difficult to ascertain. It was therefore not possible to quantitatively establish whether there was difference in pay for non-export compared to export production activities. However labourers with whom I spoke asserted that they did not make a higher daily wage for export, compared to non-export, production activities.

According Barrientos et al (2004) women's incorporation into wage labour can have positive impacts in terms of increasing their autonomy and negotiation power within the household. This was something that I struggled to ascertain, having neither the time nor the trust of participants to talk about something so personal. A factor that could negatively influence this phenomenon for both non-export and export women is that although payment is calculated per person, wages are paid to the household (and generally to the male household head), rather than the individual. This has implications for whether women can access the money that they have earned.

**CONTRADICTIONS AND PERPLEXITIES**

Within the experiences of migrant labourers I have identified a perplexity, although I am not sure whether this is a perplexity of the labourers or a perplexity of my own imposed upon the labourers. On the one hand I see the potentially negative impacts of export production; feminised conditions of labour and a potentially

vulnerable position in terms of informal and seasonal work and relatively low wages. However these migrant labourers are reliant upon grape production. They are from an area where they are unable to be self-sufficient and migrate for part of the calendar year in order to be able to support their household. They are thus experiences the aches, the vulnerability, and the joys, the provision for their families, within the production of both non-export and export grapes.

Furthermore I see how grape production in Nashik district and the Ozar Water Societies has become reliant upon these labourers who possess the skills and numbers required for the production of quality grapes. According to producers, labour groups are aware of their criticality to production and this facilitates their increasing bargaining power over wage rates. Perhaps one way to describe the labourers within these contradictions is provided by de Menezes (2004, p. 117) in her study on the migration of Paraíba Peasants in Brazil:

> "They are not passive victims but active participants in a process that is not exactly migration but rather an effort to maintain or improve their living conditions".

## WHO IS WINNING AND WHO IS LOSING?

So now that I have reached the end of my chapter on the production node I have to make the assessment on processes of winning and losing in the conversion to export grape production. In order to achieve this I will first look within each of my groups; the non-export and export grape producing households and the agricultural labourers, and then I will make comparisons of winning and losing between these two groups.

In the conversion to export grape production women within producer households tend to experience an increase in the amount of work that they have to undertake related to grape production, including both supervision of labour and actual labour. They must also achieve this whilst simultaneously carrying out their reproductive activities within the household. Although I could easily conclude that female household members are losing in comparison to male household members, this would be too simplistic a reading of the situation, ignorant of perplexities. Women consistently explained that despite the increase in their activities, the outcome, in terms of their children's education and their improved living standards, was worth the sacrifice. Perplexities are further deepened when one speculates that the 'managerial' role of the male export producer could be a hegemonic masculinity which increases pressure on men to be economically successful.

For labourers involved in production activities there is no differences in the activities, organisation or, it seems, experiences between non-export and export production. Furthermore, for grape production in general, there does not seem to be any difference in the experiences of male or female labourers. All experience the same level of insecurity and flexibility and all (within the same labour group) receive the same remuneration for their activities. Experiences of winning and losing are therefore not greater for either men or women or between non-export and export production activities.

When I compare the experiences of agricultural labourers with producers, I could perceive the labourers as losing; they are after all in a vulnerable position in which the producer offloads their own risk by offering only seasonal, flexible and informal employment. However by concluding this I would be ignoring the perplexities. These include the increasing reliance of producers upon these skilled labourers and secondly the agency of labourers, whose migration and labour provision can be understood as a conscious decision to maintain or improve their living condition.

So my answer to who is winning and who is losing in the grape production node is that I am not sure. There are experiences of both winning and losing but these are embedded within contradictions and perplexities.

# 8. THE HARVESTING AND PROCESSING NODE

I first arrived in the command area of the Ozar Water Societies at the end of March when the harvesting and processing of grapes was in its final stages. Harvesting is a self-explanatory term but by processing I mean post-harvesting activities up to and including the packaging of the grapes. Harvesting in Nashik district is completed by mid-April in order to avoid exposure of grapes to summer temperatures that can often exceed 40°C which results in a reduction in fruit quality. Within this node I was concerned with how experiences of harvesting and processing change in the conversion from non-export to export grape production and who wins and who loses as a result of these changes. As with the previous chapter on production I was particularly interested in the organisation of labour, particularly gendered organisation, and the implications of this. The following questions guided research within this node:

- How have labour activities relating to harvesting and processing changed in the conversion from non-export to export grape cultivation?
- Has the organisation of labour in harvesting and processing changed in the conversion from non-export to export grape production and how is this experienced by those involved?

## HOW HAVE HARVESTING AND PROCESSING ACTIVITIES CHANGED FROM NON-EXPORT TO EXPORT GRAPE PRODUCTION?

This first section is an outline of the labour activities involved in the harvesting and processing of grapes and how these labour activities have changed in the conversion from non-export to export grapes. As with production it is important to understand these activities and the changes as it is the context within which I seek to understand changes in the organisation of labour and experiences of these changes. My initial understanding of activities in this node was achieved through participant observations of non-export harvesting and processing and non-participant observations of export harvesting and processing. My understanding was then further developed during semi-structured interviews with labourers.

### NON-EXPORT HARVESTING AND PROCESSING

The non-export harvest commences at around six in the morning with labourers spreading crates across the grape garden. Labourers, like with production activities, work in a group of around 15 individuals from the same village; often related by blood or marriage. Splitting into smaller groups they move along the rows removing *all* grape bunches and placing them in the crates. When filled to the brim, crates hold an estimated twenty kilograms of grapes (Figures 8.1A and 8.2A). After most rows have been harvested the majority of the labourers move the filled crates to a shaded area using both a small tractor and trailer and manual labour. Whilst crates are being moved a small number of labourers finish harvesting the remaining rows. After these activities are completed labourers stop for a short breakfast, normally around nine to ten am.

After breakfast the processing, or 'sorting', of grapes commences. This involves the removal of grape berries from bunches that are soft, browning and bug or fungus infested, using fingers and small scissors, to prevent premature deterioration. There is little concern about berry size or blemishes. Berries that are removed are generally then kept by labourers, who dry them for raisins, or by farmers who sell them to raisin producers. Simultaneously to sorting, grapes are weighed and boxed by the traders purchasing the grapes from the producer. Sorting is completed by around five or six in the evening.

**Figure 8.1A Non-export harvested grapes in the shade ready to be sorted; each crates is around 20 kilograms. Figure 8.1B Non-export grapes discarded through the sorting process. Please note these are the grapes I sorted (badly) and so include perfectly fine grapes**

**EXPORT HARVESTING AND PROCESSING**

Harvesters of export-quality grapes are not employed by producers but rather the export company that is purchasing the grapes. The day begins at the export unit at around four or five in the morning with the collection of crates. Crates are smaller than those used in domestic harvesting, typically only holding around seven kilograms of grapes in a single layer, thus preventing the damage of the fruit by the weight of additional grape layers. The early start ensures that grapes are harvested before temperatures reach 20°C in order to enable the reduction of grape temperature to 4°C through pre-cooling at the export units within four to six hours of harvesting (NRCG 2013). This ensures a longer duration of freshness and quality. This is important considering the four weeks it takes for grapes to reach European markets.

Upon arrival in the grape garden harvesters spread the crates beneath the vines and begin to move along the rows removing grape bunches. Unlike the non-export harvest not all bunches are harvested; only those that meet the export requirements, although these specifications differ depending upon the importer country. Generally, however, requirements (as mentioned in the Production node) include berries of a milky-green colour, berry size of 17-22mm and a sugar content of 17. To begin with identification of size and sugar content is achieved using a small measuring tool and a refractometer but most harvesters quickly learn to use sight and taste. When cutting bunches from the vines bunches are held by the stem to prevent damage and any obviously small and poor quality grapes are removed. Bunches are then placed in the single layer crates. Once the harvest is finished, generally by nine to ten am, harvesters move the crates to the truck and return them to the export unit.

The processing of export quality grapes, termed ‘grading’, is very similar to that of non-export quality in that it involves the removal of sub-standard berries from grape bunches. Unlike the non-export processing, undersized and blemished berries are also removed as they are not desired by importers. Grading does not occur outdoors, but rather in export units, where labourers must stand at work surfaces to carry out the activities. After the grapes have been graded they are weighed and packed into punnets or bags. They are then sent down a conveyer belt where they are packed into boxes, pre-cooled and then put into cold storage. The grading process begins at around 10am and the work day finishes at around 6pm, although it is often extended until 8pm.

## HOW HAS THE ORGANISATION OF LABOUR CHANGED AND HOW IS IT EXPERIENCED?

Within this next section I look at how the organisation of labour for harvesting and processing has changed with the conversion from non-export to export grape production. I first focus upon gendered divisions of labour, before looking at organisation in terms of wages, advances and the feminisation of labour conditions.

### NON-GENDERED ORGANISATION OF NON-EXPORT HARVESTING AND PROCESSING

In non-export harvesting and processing, labour activities are shared equally between men and women. Both are involved in harvesting grapes, moving grapes for sorting (Figures 8.2A and 8.2B) and sorting (Figure 8.2C) The only difference that I occasionally observed was that it was generally women who finished harvesting the remaining rows of grapes whilst others in the group (both men and women) would move the filled crates to the sorting area. When speaking with labourers involved in this non-export work they told me that there was no difference men and women's ability to undertake the work.

Like labour groups in production activities, non-export harvesting and processing labourers are paid a targeted wage for a pre-agreed area. Money is then divided between group members, although generally paid to the household rather than to the individuals. According to labourers with whom I spoke, targeted wages are divided equally between all group members, irrespective of gender, as everyone is doing the same type and amount of work. Estimates of per person daily wage by labourers, based upon working speed and number of group members, varied between 150-200 rupees (€1.93-€2.57), although one estimation was 100 rupees (€1.29). The working day was around twelve hours, from six in the morning until six in the evening.

### GENDERED ORGANISATION OF EXPORT HARVESTING

After arriving at my first export harvest and peering under the vines to locate the harvesters I made my first observation of labour organisation; all the export harvesters were male (trousers, no saris). A strong contrast to the non-export harvest but I was reluctant to jump to the conclusion that all export harvesting was carried out by men. However after observing one more export harvest and undertaking interviews with both harvesters and representatives of three export companies the observation turned into a pattern. Harvesters of export grapes were male and I found no exceptions.

I was intrigued. Why were no women involved in export harvesting when they were partaking in the non-export harvesting? It made little sense to me so I asked all the labourers I met why. Below I present the dominant reasons, framed as discourses[4], given for this division. In addition to their presentation, I also discuss the discourses using a comparison with the non-export harvesting conditions in order to highlight the existence of contradictions within reasoning. These contradictions are generally a finding of my own analysis, rather than having been expressed by participants themselves.

#### 1. Heavy lifting

The first discourse given for women not being able to participate in the export harvest was that there is heavy lifting involved and women are unable to do this. This heavy lifting includes moving the crates from the field to the lorry and then unloading the crates again at the export unit.

This discourse, however, is incredibly contradictory to findings from the non-export harvest during which women were integral in the movement of filled grape crates (Figures 8.2A and 8.2B) and were undertaking the same amount of work as their male counterparts. Furthermore, grapes-filled crates in the export harvest weigh seven kilograms, about one third of the weight of each crate that women are moving during the non-export harvest.

[4] Discourses are understood as "ways of thinking and producing meaning" (Weedon, 1987, p. 108)


**Figure 8.2A Labourer carrying filled crate of non-export grapes on her head**
**Figure 8.2B Labourers carry non-export grape-filled crates**
**Figure 8.2C A group of labourers work on sorting the non-export grapes**

### 2. Technical work

The second discourse used by labourers, particularly male labourers, was that because the export harvest was more 'technical' than the non-export harvest, with grape bunch selection based upon (the previously explained) factors including colour, size and sugar content, women were less proficient at this work.

This is, however, a contradiction of the processing stage, in which women carry out the grading of the grapes and remove any berries from bunches that do not meet export requirements. Therefore they too make technical judgements on size, colour and sugar content.

### 3. Early starts and long distances

The final discourse used to explain male-only harvesting was that export harvesting involves too early starts for women and entails travelling long distances. According to labourers with whom I spoke, women are unable to undertake these activities; firstly due to having other responsibilities in the morning, such as cooking, and secondly because travelling long distances, particularly early in the morning, is neither traditional nor culturally acceptable.

**EXPORT PROCESSING**

As with the export harvesting my initial observations of the organisation of labour for export processing were made within seconds of arriving at my destination; in this case the Thompson export unit. The grading floor was large, lined with tables and dominated by female labourers. The situation elicited similar questions to my observations from the export harvesting. Firstly, was this a one-off and if not a one-off then why was this case? Men had seemed proficient at the sorting in the non-export processing. It was not a one-off, I soon found, after interviews with labourers and export company representatives.

So, in addition to asking labourers the reasons behind all-male export harvesting, I also asked about the all-female export processing. Below I outline the discourses for this gendered division of labour. Once again I also discuss each discourse through comparisons with non-export processes, as well as with export harvesting, in order to highlight contradictions.

**1. Gentle, Nimble and Patient**

The first discourse used to support female-only processing was that women have inherent characteristics of being gentle, nimble and patient. According to participants these characteristics are beneficial within the grape grading process as nimbleness increases productivity whilst patience and gentleness prevent damage to grapes which would reduce quality and eligibility for export.

This discourse, however, contradicts harvesting activities during which men are involved in the handling, as well as a preliminary grading, of grapes through the removal of poor quality berries from bunches. Men are therefore undertaking similar activities to women and must also demonstrate these characteristics in order to avoid damaging the grapes.

**2. Light work**

A second discourse used to support the gender division of labour is that the working in the export units is light work. It does not involve the same heavy lifting of grape-filled crates as the harvesting, but rather involves standing at tables working with one's hands carrying out the grading, weighing and packing of grapes into bags and punnets. As it is lighter, this work is more suitable for women.

When speaking with female labourers, this discourse was an obvious injustice. They explained that although men's work is visibly heavy, women's work is also heavy as it involves standing for eight to ten hours a day with a short rest for lunch. These long periods of standing result in leg and hip pain and, in many cases, swollen legs (Quote 8.1).

However it is important to recognise that although labourers provided these discourses regarding the gendered division of labour, many made it a point to indicate that these divisions were not of their own making but rather predetermined by those that own and manage the export companies (Quotes 8.2, 8.3 and 8.4). It is these owners and managers that consciously make the effort to either employ, or instruct others to employ, men for harvesting and women for processing. During interviews with export company representatives I followed up on these discourses, asking for the reasons behind the gendered division of labour. Discourses tended to be the same as those of the labourers and a number of extracts are provided below (Quotes 8.5, 8.6 and 8.7). I tried to steer interviews towards the source of these discourses. The closest I came to an explanation was from the owner of Sonaka exports in Quote 8.5, in which he refers to a global situation and an overarching ability of women, *"wherever in the world"*, to display the desired qualities of export processing; patience, care and nimbleness. Although this is an oversimplification of the processes of global production in geographic localities around the words, a high female presence undertaking activities in pack houses for horticulture is a pattern that has been found widely (Barrientos & Barrientos, 2002;

Barrientos, 1997). This answer by the owner of Sonaka can thus, perhaps, be recognised as an influence of the global upon the gendered constructions of difference at the local level.

**Quote 8.1**

"But even we are doing heavy work. We are standing in the same position all day and this causes leg and joint pain and sometimes swelling."

Taie, Village 2, 21st April 2014

**Quote 8.2**

"We are told what role to do by the export unit and do it. It is the export unit decides that what men and women do and what they get paid."

Cchaya, Village 2, 21st April 2014.

**Quote 8.3**

"Work is assigned by the export unit. Don't ask me."

Sunil, Village 3, 23rd April 2014.

**Quote 8.4**

"The export unit gives the gents this job and the ladies that job."

Shankar, Village 3, 23rd April 2014.

**Quote 8.5**

"The main reason is, as you know, ladies are more precise. Wherever in the world, they take good care."

Sonaka Exports, 19th April 2014.

**Quote 8.6**

"Women. It is easy for us to control them. They listen to supervisors and they do what they are told…The women that work are housewives and do this work in the grape season."

Sharad Exports 25th April 2014.

**Quote 8.7**

"Grading is done by ladies. They have faster fingers, they listen to their supervisors they handle it gently."

Manik Chaman Exports, 7th May 2014.

Although from my discussions with both labourers and the owners and manager from the three export units I could identify these discourses, as well as the potential influence of the global on their occurrence, I was unable to derive a reason for their existence. During research I reflected that there must be a reason considering that the contradictions in the discourses indicate their social construction. In order to speculate upon reasons I have returned to the theory that I outlined in Chapter 3.

**Skilled and Unskilled, Heavy and Light**

My first interpretation of the discourses is the classification of men's work as skilled and women's work as unskilled. Men's work is skilled through its categorisation as 'technical'. Grapes must be harvested according to size, colour and sugar content and these are skills that men must learn. Conversely, the work of women is deskilled through the 'nimble fingers argument'. The desired attributes to undertake processing work, such as patience and nimbleness, are naturalised as inherent female characteristics rather than being recognised as a learned activity through the socialisation of female children (Collins, 2002; Phillips & Taylor, 1980). The naturalisation of female skills is not uncommon within global production (Table 8.1).

A second, and equally juxtaposing, observation of discourses is the classification of men's work as heavy and women's work as light. Men are in the fields harvesting grapes, loading and unloading heavy, grape-filled crates whilst women are inside the export units undertaking no lifting work. These classifications have a similar outcome within which the work of men is perceived as much more effort than the work of women.

The function of these discourses which construct the work of women as light and unskilled can be understood within Marxist feminist theory as legitimising the payment of women lower wages. Empirical support for this function is provided in Table 8.2 within which I have included the wages of export labourers from the three participant villages. From the table is can be observed that the wages of women undertaking processing activities are consistently lower than men undertaking harvesting for the same export unit. This is also despite the longer working days of women compared to men (Table 8.3). The lower wages of women supports the assertions of Mies (1996) and Hartsock (2008) that global production is predicated upon the cheap and exploitable female labour. It is also supported by other empirical work on global production that finds women receive lower wages than their male counterparts. For example Barrientos, Dolan, & Tallontire (2003) and Kritzinger, Barrientos, & Rossouw (2004) in South Africa, Barrientos, Dolan, & Tallontire (2003) in Kenya and Zambia, Barrientos (1997) in Chile and Reddy (2007) in India.

Whilst looking at Table 8.2 it is also interesting to observe that the wages of men and women in Village 1 are generally higher than their counterparts undertaking the same work in Villages 2 and 3. Whilst these differences are not necessarily a pattern and could be attributed to employment by three different export companies, I would speculate that it could be the exploitation of the vulnerabilities of labourers from Villages 2 and 3. Villages 2 and 3 are in Peth and the labourers are migrating to work for the export companies. As the grape work is their only income during the year they are perhaps more dependent upon the work, and thus more exploitable. Conversely labourers in Village 1 are employed in paid work for the whole year, and not only grape work. They perhaps then have a higher ability to withdraw their labour and so can negotiate higher wages.

**Secondary status in the labour market**

A further interpretation related to the justification of lower wages for women is through the classification of women as housewives, as observed in Quote 8.6 by the manager of Sharad Exports. During the discussion he explained to me that the women he employed were 'housewives' for the majority of the year, only working for the export units for some extra money during the grape season. This is contrary to observations that I made. Women in Village 1 undertook alternative paid labour when not participating in grape work and women in Villages 2 and 3 were involved in grape production from October until March and household production

activities (albeit subsistence) for the remainder of the year. By constructing women only housewives, their role and wages become secondary to male household members, thus 'justifying' lower wages (Elson & Pearson, 1981).

**Table 8.1 Brief overview of literature pertaining to export production and the naturalisation of skills of women**

| Author(s) and Date | Findings |
|---|---|
| Ramamurthy (2004) | In cotton production in Andhra Pradesh the preference for women in the cotton fields was because their nimble fingers made them naturally suited for the work. |
| Barrientos, Dolan, & Tallontire (2003) | In South Africa, Kenya and Namibia women were involved in the value-added activities of horticulture as their nimble fingers increases their productivity. |
| Raynolds (2001) | In the Dominican Republic discourses on the soft and caring nature of women meant that they harvest export pineapples with more heart. *"women harvest the fruit with love, which makes the pineapple sweeter"* (p. 16) |
| Reddy (2007) | In this study on the outsourcing of plant propagation to India, Reddy finds a high proportion of women employed (90% of technicians undertaking propagation work). One of the reasons for their employment was their nimble fingers and perceived patience for repetitive tasks. |
| Devin (2001) | Employment of young women who are perceived to be more dextrous and thus more efficient at undertaking manufacturing. |
| Collins (2002) | Naturalisation of sewing skills to women, particularly to third world women, in the relocation of garment manufacturing in order to legitimise low wages. |

**Table 8.2 Wages of male export harvesters and females export processers in Villages 1, 2 and 3**

| Village | Wages (INR/DAY) | |
|---|---|---|
| | Male Harvesters | Female Processers |
| **1** | 220-250 | 170 |
| **2** | 170 | 150 |
| **3** | 220 | 160 |

**Table 8.3 Working male export harvesters and female export processers**

| Role | Working hours | Hours worked/day |
|---|---|---|
| **Harvesting** | 10am – 6-8pm | 8-10 hours |
| **Processing** | 4am – 9-10am | 5-6 hours |

At this point in the discussion it is also important to highlight a perplexity regarding wages that came out during conversations I had with Manisha, from Village 1, and Taie, from Village 2. Both were eager to talk about the lower wages for women and the injustice of this. However during these discussions both women also spoke about the enjoyment that they experience as a result of working at the export unit, despite the low wages. As they are working they are surrounded by other women that they know very well. Although they are expected to work hard they are also have the freedom to talk, laugh and joke, which contribute to an enjoyable working environment.

**Policing of women's sexuality**

The final discourse to discuss is the earlier starts and longer distances of export harvesting used to justify the exclusion of women. This is interesting as on the one hand it is used by some participants to explain the wage difference; men have to leave early in the morning and therefore this validates a higher wage. However it can also be understood through the work of Ramamurthy (2004). In her study on cotton production in Andhra Pradesh Ramamurthy found that whilst male and female children undertake the same field work during the day, boys return in the night to de-lint the cotton seeds. By restricting night work to male children the process can also be seen to "police girls' sexuality because they are not allowed to go 'roaming around' at night" (Ramamurthy, 2004, p. 761). By preventing women from participating in export harvesting and 'roaming around', the discourses of it being culturally unacceptable can be understood as limiting the sexuality of women.

**WAGES, POWER AND AUTONOMY**

Despite the lower wages of women I was interested in seeing whether, at an empirical level, the integration of women into export production influenced their power and autonomy within the household, as asserted by Barrientos et al (2004). In reality I was unsure of how to understand experiences in terms of this autonomy, finding that many studies, such as Braunstein (2008), use macroeconomic approaches, which was both beyond my field of expertise and also contrary to my attempts to understand qualitative experiences. I also felt that within the short space of my research I would be unable to build the trust with participants that would be required to understand the distribution of wages within households and changing experiences of autonomy. As an alternative, influenced by the work of Ramamurthy (2004) and her identification of male cotton workers retaining a small portion of their wages as 'tea money', my premise during research was that a higher level of autonomy within the household could perhaps be indicated by the ability to control one's own wages through retention for personal use. I could then understand whether autonomy changes in the conversion to export grape production through the comparison of the use of wages between non-export and export harvesting and processing for both male and female labourers.

In both non-export harvesting and processing and export harvesting male labourers used the majority of their wages for household use but also retained a portion as 'pocket money' (as translated by Sukanya). This money was generally spent on eating, drinking, haircuts and socialising; particularly on market days. An interesting aside to this is that the outcome of 'tea money', or in this case pocket money, can be the gendering of spaces. For example Ramamurthy (2004) finds that because it is mainly males that receive tea money, public places, such as tea stands, are gendered male. This is interesting as during my research I found that the snack kiosks at the centre of small villages were often the congregation places of young men, such as those photographed in Figure 8.3.

In general women involved in non-export harvesting and processing did not retain any of their wages for personal use and instead used all wages for household purposes. Similarly, in Villages 2 and 3, women involved in export processing also did not retain any of their wages. When speaking about the reason for not keeping a small amount of money women would point out that their household economic condition is very poor. They have to migrate and work first in the grape gardens and then for the export units in order to provide enough money for household purposes such as food, medicine, marriages and agricultural inputs. They cannot spend it on items for themselves. When I asked why men in the household were able to keep a small amount for pocket money, they said that men were able to contribute more to the household than women so it is more acceptable to retain a small amount. This is interesting as it indicates negative reverberations of the gendered differences of wages upon women in terms of household negotiation power and autonomy. Conversely women in Village 1, who were involved in export processing, did retain a small monthly allowance for themselves. Spending patterns were different to men and also different depending upon the age/marital status of the women. Older and married women used their 'pocket money' to make household investments

that would improve quality of life, such as fridges (Figure 8.4A), decoration and maintenance, whilst unmarried, younger women tended to spend their money on items such as makeup, jewellery and clothing (Figure 8.4B).

The wage retention for women in Village 1 indicates that involvement in export processing activities potentially has positive implications for female autonomy, if wage retention can be a proxy for autonomy. However I also have to wonder why it was only in Village 1 where women demonstrated retention. I am unable give a definitive answer but I speculate whether it is because of the same economic conditions I hypothesised could enable the exploitation of these women through lower wages. As women in Villages 2 and 3 are not involved in waged activities throughout the year perhaps they feel, or are, less economically able to keep a small portion of their wages as it can always have a more 'productive' household function.

**Figure 8.1 Male participants from Village 2 found at the snack kiosk**

**ADVANCES**

A difference in the organisation of export harvesting and processing, compared to non-export, is the provision of advances by export companies to labourers (both harvesters and processers), though it should be noted that this was only in the cases of migrant labourers from Villages 2 and 3. Advances were generally 1,000 rupees (€12.85) per person and paid at the beginning of the monsoon in June. Advances were used to cover agricultural inputs, such as fertiliser, seeds or plough hire, for household production of rice and pulses. Additional uses included the purchasing food grains and other commodities that cannot be grown, paying for marriages and meeting education and healthcare costs that cannot be covered by wages. The majority of labourers with whom I spoke had taken advances from their employer regularly over the past few years, although not necessarily every year. Only those that were young and just starting to work for the export company during the grape season had never taken advances. Advances were paid by export companies with the expectation that those who receive them will work for them during the next grape season. Although, to my knowledge, no interest was paid on the advances, advances had to be paid off prior to wages being paid.


**Figure 8.4A Bharate, Village 1, 19th April 2014. Purchased a fridge-freezer which keeps food for longer, can cool water and keep ices for the children. Last year she purchased the green and white floor tiles (B).**
**Figure 8.4B Manisha, Village 1, 19th April 2014. Purchased this dress using her savings.**

There is a perplexity involved in this relationship. On the one hand advances from the export companies provide labourers with security for agricultural investment and a buffer against financial shocks. However it also results in the restriction of freedom. This relationship was described by Shankar as bonded (Quote 8.8), as by taking the advance from the export company labourers commit to working there in the following grape season, making it reminiscent of the bonded labour traditionally been used in India to secure an agricultural labour force (Shrivastava, 2005). Perhaps the relationship and the provision of advances does not meet the constitutional definition of bonded due to an (apparent) absence of force, advances do result in a restriction of freedom.

Export labourers explained to me that they received the advances from the export companies through a trusting relationship that is established over time (Quote 8.9). This trust enables the export company to give labourers the advance and know that it will be paid back. Labourers also told me that although they are aware that wages provided for the same work by other export companies are higher, this trusting relationship means they cannot work elsewhere. This is because if they move to a new company they do not have the bond and thus do not have guaranteed access to the advance if it is needed. Although most labourers with whom I met did not take this advance every year it was an important fallback to reduce vulnerability to economic insecurities (Quotes 8.9 and 8.10). When speaking with Taie about this she also pointed out that some young men in her village (Village 2) do not work for the associated export company but found employment at one that pays higher wages. They were able to do this as they did not have the responsibilities of older men or the restrictions of women.

**Quote 8.8**

"We are bonded to the export unit. We have to do the [export] harvest in order to get the advances that help us live."

Shankar, Village 3, 24th April 2014.

**Quote 8.9**

"In the rainy season we can take an advance on our wages from the export unit. We get it because there is a bond of trust with the unit. We know there are better wages at different units but we need the advance so we have to stay there."

Manjula, Village 3, 24th April 2014.

**Quote 8.10**

"Women have no choice. They have to stay at the Tas-A-Ganesh Unit. The unit offers money in advance for food, weddings, agriculture. Not all households take the advance every year but it is important to keep good relations to make sure we can get it when we need the money. It is based on trust."

Taie, Village 2, 21st April 2014.

**FEMINISATION OF THE LABOUR CONDITIONS**

Within both non-export and export harvesting and processing feminised conditions of labour are experienced. In non-export the feminised conditions are similar to that of the production node; labourers work for many different producers are dependent upon a verbal agreement, employment is temporary and levels of flexibility and feminisation are the same for both men and women. In export harvesting and processing conditions of labour are also feminised but, in line with Barrientos et al (2004), some male labourers experience a lower level of insecurity by undertaking work towards the more formal end of the employment spectrum. A small number of male labourers are chosen by the export company to act as recruiters and within this position they are given contracts to find a certain number of labourers. Through the provision of these contracts these male recruiters are given a higher level of security over other labourers, both male and female. Recruiters were not an aspect of my study I was able to explore but considering they are the ones that select the labour for export companies it would an interesting part of research to pursue in the future.

The feminised conditions of female labourers are well demonstrated by the unpaid overtime experienced by women in Villages 2 and 3. Women would often have to work extended hours in the export units from 6pm until 8pm and were not remunerated for their extra activities. Such experiences are common under feminised conditions as workers are unable to freely express their discontent at the situation due to their vulnerability to the situation (Barrientos et al., 2004). Interestingly, women in Village 1 are remunerated for their overtime at a rate of 20 rupees per hour (€0.26). Once again the speculations upon the reason for the difference remains that the migrant women from Villages 2 and 3 are more exploitable due to their dependence upon grape labour. However the continued difference in the treatment of migrant and non-migrant labour in export grape activities would be an interesting topic to study further.

It is easy to make the assumption that the export companies are the winners within this situation as they are reducing their own risk by offloading the uncertainty of market conditions onto those at the bottom of the chain through feminised conditions. And to some extent I agree, but I am also experiencing perplexity in my own understanding. I do see the higher level of income of export companies, as compared to the labourers

that they employ. However, the activities of export companies should be recognised in the context of their own vulnerabilities to global markets.

Export companies operating within the Nashik region and my research area are not the large-scale (Western) agro-export companies that are often associated with global production and the cultivation of horticultural export crops that are often imagined in the theory of Chapter 3. Instead export companies that I came across were small-scale and locally owned. For example Sonaka Exports and Manik Chaman were established by grape producers who saw the need for the export companies to enable the exportation of grapes by small-scale grape producers, whilst the owner of Sharad was initially contracted in the area to dig wells and saw the economic opportunity of grape exportation. During my research I did hear rumours of export companies owned by larger, but still Indian, multi-nationals such as Airtel. However I did not meet anyone who had experiences of these and so have not included them.

The export companies with whom I carried out research are paid for grapes on a consignment basis which means they are initially paid a securing price (per tonne) for the grapes they will provide, but a final per tonne price is not agreed upon. The export companies use this money to purchase the grapes from producers. It is not until the delivery of the consignment to the purchaser that the final price for the grapes is given. Considering that the grapes have already arrived at their destination the exporters are vulnerable as they have little power over the situation. This vulnerability is highlighted in research by Barrientos & Kritzinger (2003) who found that if there is an overabundance supply, supermarkets will often become more concerned with product quality in order to reduce its price. As export companies pay fixed prices to producers, it is the company that must absorb the costs of market fluctuations and importation conditions. It is therefore perhaps not so surprising, although still not acceptable of course, that export companies attempt to reduce their own uncertainty through the imposition of feminised labour conditions upon workers.

## WHO IS WINNING AND WHO IS LOSING?

In the conversion from non-export to export grape production the organisation of harvesting and processing activities changes from being under the control of producers to being under the control of export companies. Alongside this change in control there is a much stronger change in the organisation of labour to undertake activities than I observed in the production node. This is interesting as it is perhaps indicative that the conversion to export production has the biggest impact at the point where the global meets the local, which in this case is when export companies becomes involved. It is within this changing organisation, based upon the outlined experiences of those incorporated, that I want to answer my question regarding 'who is winning and who is losing in the harvesting and processing node?'. To achieve this I will look at the experiences, as well as the perplexities, through a number of comparisons; male and female labourers, migrant and non-migrant labourers and labourers and export companies.

Within this node my main observation in terms of organisation was the gendered division of labour supported by discourses on the heavy and skilled work of male labourers and the light and unskilled work of female labourers. In line with Marxist feminist theory these discourses legitimised the lower wages of women and were also supported by additional classifications of women as housewives, thus giving them a secondary status in the workplace. Although there were potential increases in the wage retention of women involved in export processing, thus indicating possible increased autonomy of women through wages, this was restricted to the non-migrant export labourers from Village 1. The negative implications of lower wages are therefore not necessarily mitigated for all women through a positive impact on female autonomy. However despite the low wages and hard working conditions women did express their enjoyment at working for the export companies, surrounded by other women who they know well and with whom they can talk and joke. I find it difficult in this situation to declare women as losing due to this final perplexity. However I do think, more so than in any of the other nodes, women are being exploited to a higher degree.

During research I also observed differences in the treatment of migrant export labourers from Villages 2 and 3 compared to non-migrant labourers from Village 1 which could support the classification of the former group as losing. These included lower wages for both men and women, unpaid overtime for women and advances which restricted freedom of choice of employer. There are two perplexities, however, in labelling labourers from Villages 2 and 3 as losing. The first is that, like in the production node, they are making conscious decisions in order to maintain or improve their quality of life and so should not be classified as victims. Secondly, although advances restrict freedom, they also provide money at an integral point for the investment in inputs for household agriculture. For this comparison it is also important to reflect on whether the differences between the villages are the outcome of exploitative conditions or whether they are due to a bias in my selection methods and labourers being employed by different export companies. This is something that I cannot conclude from my research and which would be an interesting point to explore further.

From this chapter one could also perceive that labourers are losing in terms of export companies, particularly through the experience of feminised working conditions. However the perplexity is that although export companies can be considered as winning, exploiting labours for maximum gain, they are also operating within insecure conditions and are themselves vulnerable to changes in the global market and decisions made by importing parties. Although they are in a better economic position than others within this node, their position is precarious.

As with the two preceding nodes I struggle to truly define who is winning and who is losing in the conversion to export harvesting and processing due to the perplexities experienced by those incorporated. However I also think that the experiences of losing by labourers, and particularly migrant labourers and women, although counteracted to some degree by processes of winning, are much greater in this node than the two previous nodes. To me this indicates that the closer one becomes to the global within the grape commodity chain, the more vulnerable one becomes to exploitation.

# 9. SO SHOULD I EAT GRAPES FROM INDIA?

We are all connected in our globalised, still globalising, world. Our connections are not only the real; personal contact and instantaneous communication for example, but also the virtual; conceptualised within this research as the links between people, as producers and consumers, through resources such as water and labour. It is through these virtual connections that I first thought about the supermarket grapes, imported from India, that I purchased in April 2013 and the impact that my purchasing patterns and consumer demands have in the region where the grapes are grown. Perceiving both positive and negative consequences for different actors involved in grape production, inspired by Marxist and Marxist Feminist theory and situated within my own constructions as a left-wing feminist that cares about the earth, I set out to decide whether I should eat grapes from India.

I attempted a reflexive ethnography, I utilised a feminist commodity chain analysis seeking to understand the experiences of those incorporated into global production and the transformation from non-export to export grape production and I sought to answer my moral quandary by understanding who wins and who loses within three nodes of the grape commodity chain; irrigation and hydraulic control, production and harvesting and processing. My idea was that if experiences of losing were too great, by too many, then I should not eat the grapes. I was open to the contradictions of capitalism and the perplexities experienced by those incorporated into capitalist processes. But once I had opened myself up to this process of thinking my findings were inherently contradictory and perplexing. Within each node I observed simultaneous experiences of winning and losing for all incorporated actors and struggled to make judgements on overall winners and losers.

Whilst writing my thesis I reflected constantly upon the relevance of my findings to contribute to answering my research question. My research was purposefully ethnographic and local; I wanted to qualitatively understand the experiences of the conversion to grape production from those incorporated into the three nodes. But by carrying out my research in the three tail end WUAs of the Waghad irrigation scheme I question whether I can extrapolate my findings beyond this command area, beyond the Waghad irrigation scheme, or even beyond Nashik district itself, to grape production in India. But perhaps the aim of this research, considering I was focused upon experiences, should not be to extrapolate. The value of experiences, after all, is that they are unique; contradictory and perplexing. Perhaps a better way to reflect upon the results is therefore in terms of their wider relevance, rather than a direct meaning.

My first reflection is upon the relevance of Marxist and Marxist feminist theory to understand the globalisation of horticultural production. Processes of accumulation by dispossession were observed in the concentration of water resources for grape production and particularly export grape production. The increased household labour requirement of export production was predicated upon the free and invisible labour of women who also had to maintain their reproductive responsibilities. Feminised conditions of labour were experienced by all labourers and the production of gendered divisions of labour enabled the particular exploitation of women through lower wages. It is important to recognise though, that there were also discrepancies with the theory. Labourers on the grape gardens were not the traditional dispossessed, men and women were often equally represented in labouring roles and feminised conditions were not restricted to export production. These discrepancies justify the importance of undertaking empirical research in order to understand experiences at a local level.

A second reflection is upon the relevance of Ramamurthy's (2003) concept of contradictions and perplexities. Utilisation enabled the movement of research beyond the simple binaries of winning and losing and towards understanding that experiences within global production can be simultaneously positive and negative. These include the export grape producers who were economically winning but experiencing much higher levels of stress and vulnerability to global markets than non-export and non-grape producers; the women of export grape producing households that have a higher workload compared to the past but do not resent this as they

have an improved condition of living compared and are providing their children with better opportunities; the labourers within the production and harvesting nodes that are experiencing feminised conditions of labour but that are also demonstrating their own agency through seeking out a living to support themselves and their families; the women who receive lower wages than men but who enjoy their working environment and are potentially experiencing increasing autonomy through the wages.

A further reflection is that despite different geographic localities and social realities, there are similarities in the findings of my research in the Ozar Water Societies when compared with empirical research of others studying global production. These include the concentration of women in packing houses, the naturalisation of female labour as unskilled and male labour as skilled, the lower wages for women and feminised working conditions for all. Why do these similarities exist, what do they mean, how do they come about and what is the implication of their being? I am unable to answer these questions and it is something that should be explored more in depth.

Furthermore although there is a growing literature on export horticultural production, the body on experiences remains relatively limited. Feminist research that does exist seems to be predominantly focused upon the harvesting and processing node of export goods, whilst research on production remains very limited. This finding is indicated within my results by the multiple empirical comparisons within the harvesting node and the singular empirical comparison with the Rath (2003) paper in the production node. Why has empirical focus tended to be within harvesting and processing? Is it more show-stopping and thus academically more deserving (or at least rewarding)? Are the implications for those incorporated into production for capitalist export also not significant? It is a similar situation when looking at irrigation and hydraulic control in terms of ABD. Whilst there is literature pertaining to ABD and water in terms of global production, this literature is predominantly concerned with water grabbing by MNCs and agri-businesses rather than at smaller (and less spectacular?) scale. This seems a significant omission considering, as highlighted within this thesis, export production is also carried out by relatively small-scale producers.

It is also important to reflect upon my findings in terms of my approach and perspective; how did my Marxist and Marxist feminist influences affect research? Perhaps the most obvious way is that I was consciously looking for the negative experiences of export production, such as accumulation by dispossession, gendered division of labour and the exploitation of women. And although this is true I hope that I mitigated it through the use of contradictions and perplexities, thus also recognising the joys people experienced through their incorporation into export production. I can also reflect upon my perspective in terms of what I could have gained if I had utilised an alternative approach. Perhaps if I had undertaken a realist commodity chain analysis I would have seen the wider economic impacts of export grape production within Nashik district; the trickledown effect of an improved economy to those not involved in grape production. Perhaps if I had taken an approach concerned with the impact of water reallocations on the environment, rather than on the people, I would have seen outcomes in terms of increasing groundwater extractions and the wider ecosystem reverberations. But just because there would be variance does not mean one outcome is wrong whilst the other is right; truth is, as I mentioned in Chapter 5, subjective and multi-faceted. To build this rich picture through a variety of approaches could only be a positive thing in order to enhance understanding of experiences and realise the implications of the relocation of export horticultural production.

But to return to answering my research question, my personal moral quandary, should I eat grapes from India (or at least from the Ozar Water Societies)*?* My answer is I do not know. The contradictions and perplexities prevent a simplistic answer using restrictive binaries of yes and no. Perhaps from my research it is enough to understand that the conversion to export horticultural production, to grapes, in India has an impact upon fresh water and labour resources and that our purchasing patterns have implications beyond our own trolleys and tables. But just because I am unable to answer my question because of the perplexities does not mean that the situation is acceptable; why should our consumption of grapes in the North cause negative experiences for

some in the South? Would a better situation not be the absence of losing and just experiences of winning? Another question to ask then is how can this be achieved? What is the 'left-wing feminist that cares about the earth' solution to the current situation? Like Mies (1998) I wonder about an alternative system.

> "What would an economy look like in which nature mattered, in which women mattered, in which children mattered, in which people mattered, which would not be based on colonizing and exploiting others?" (Mies, 1998, p. 23)

As an example, why, at the international level (which then leaks down to the National and State level), are water policies being constructed that strive for efficiency through economic reallocations that enable the appropriation of resources by those with economic and social agency? Why do we not strive for social equitability? Why does it always have to be about money?

But whilst Mies' alternative perspective is regionalisation I do not perceive this to be a feasible option; we have experienced contemporary globalisation and we are never going back. I also see much wisdom in the notion of Pepper (2012, p. 149) that "globalization is not the problem" but rather the problem is the "influx of an extreme form of capitalism that feeds on greed". The expansion and exploitation of new territories is undertaken not only to provide big, bright and blemish-free horticultural products and make money, but to make more money. And although this profit seeking is undertaken by a handful of 'industrial capitalists' it occurs within, and is enabled by, a context of consumer ignorance. Before April 2013 I had no idea that some of the grapes we consume in the Netherlands and the United Kingdom are imported from India and upon conversations with family and friends, neither did they. Perhaps this research is therefore an indication that we[5] need to be more conscientious consumers; we should not be ignorant of our consumption and its consequences.

[5] I extend my I to we. Who I mean by 'we' is vague as I am part of lots of 'we'; my family, my friends, my academic tribe (the left-wing feminists that care about the earth), consumers of the UK and the Netherlands, Europe, the Northern hemisphere. Perhaps the we in this context is a decision that you, as the reader and as a consumer, can make.

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