Flowery Language

The Promises of New Technology and Impacts on Polish Labor in Dutch Horticulture

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List of Acronyms

ABU	*Algemene Bond Uitzendondernemingen* (General Bond Temporary Employment Agencies)
AI	Artificial Intelligence
CAO	*Collectieve Arbeidsovereenkomst* (Collective Labor Agreement/Collective Bargaining Agreement)
CBS	*Centraal Bureau voor de Statistiek* (Statistics Netherlands)
CEE	Central and Eastern Europe
ECP	*Platform voor de InformatieSamenleving* (Platform for the Information Society)
EU	European Union
FNV	*Federatie Nederlandse Vakbeweging* (Federation of Dutch Trade Unions)
GVC	Global Value Chain
ISS	Institute of Social Studies
LPT	Labor Process Theory
LTO	*LTO Nederland* (Farmer and Horticulturalist Advocacy Group)
NBBU	*Nederlandse Bond van Bemiddelings- en Uitzendondernemingen* (Dutch Association of Intermediary and Temporary Employment Agencies)
R&D	Research and Development
SER	*Sociaal-Economische Raad* (Social and Economic Council)
SIAA	Smart Industry Implementation Agenda
SOMO	*Stichting Onderzoek Multinationale Ondernemingen* (The Centre for Research on Multinational Corporations
STS	Science and Technology Studies

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Abstract

This research examines whether CEE migrants are represented in current Dutch technology discourses, and the impact of emerging technologies on Polish migrant labor in the Dutch horticultural value chain. Employing a Global Value Chain approach as an analytical lens, this paper injects labor process theory and science and technology studies into GVC to address two gaps often omitted or under-studied: labor and the role of new technology. Methods to examine these issues included a desk review of government and industry documents and a series of formal interviews and informal conversations with industry, unions, and workers. Understanding that migrant labor and technological innovation are twin pillars of Dutch horticulture, this research demonstrates the silence of labor in official documents while bringing to light impacts of this technology on Polish migrants. This paper concludes by presenting responses to my research questions, suggestions for additional research, and broader suggestions for readers to critique national strategies and their communication.

Relevance to Development Studies

Global migration is a highly politicized action regardless of whether it is North-North, South-South, or South-North. Development Studies and GVC analysis often focus on South-North issues. Politicians and news outlets in the North often sensationalize migration stories (e.g., 'migrant caravans' in the US, 'floods of migrants' crossing the Mediterranean) without regard for benefits provided by migration or root causes. This research repositions that gaze on a North-North study involving many of the same concepts and factors. Second, advanced technologies as explored in this paper have the possibility to disrupt industries in both advanced and developing capitalist economies. This means the orthodox economic development ladder must be reconceptualized (Rodrik 2018). Finally, this research explores how labor experiences the changes championed by business and government, understanding this process is integral to creating a development practice that works for all, not just for those who already enjoy privileged positions.

Keywords

Global Value Chains, Labor Process Theory, Migration, Labor, Technology, Horticulture

Chapter 1 Labor: GVC's Missing Link

"I believe your research is not applicable to us since we don't have anything to do with the greenhouse labour of CEE workers and demographics of growers directly" (Dutch Flower Group)[1].

The understanding of the effects of technological change on human labor have oscillated between optimists who insinuate technology significantly reduces or removes drudgery (Goering 2019; Nübler 2016: iii), pessimists who perceive precarious work and widened class-based inequalities as a result (Braverman 1974: 35, 388; Standing 2011: 6, 36), and a middle-ground concerned with both (Wallace 1989). This advancement is generally framed as a method for economic upgrading (e.g., Humphrey 2004: 6-7) of industries and social upgrading (e.g., Barrientos 2011) of employees in the South. Eschewing this myopic Southern focus, this paper explores opportunities and practices of economic and social upgrading or downgrading in a regional value chain in the North. More specifically, this research examines the framing of technological advancement by various Dutch actors and the impacts of that framing and technological adoption on Polish migrant labor supporting the bottom links in the Dutch horticulture value chain.

Technological innovation and progress are a cornerstone of Global Value Chain (GVC) studies, though usually as a way for firms in the Global South to access methods and technologies necessary to supply products to the Global North (Gereffi et al. 2005: 99). GVC analysis has, since its inception, held the 'upgrading through insertion' hypothesis as a core component (Gereffi and Fernandez-Stark 2016: 13). This hypothesis suggests that the inclusion of 'developing' economies (or producers therein) introduces the local producer to new forms of knowledge, organization, and technology (Humphrey 2004: 1-3; Lee et al. 2018: 425). Tracing this hypothesis to its logical conclusion suggests an economy (or producer) which benefits from higher wages, more efficient production methods, or other forms of economic upgrading (Humphrey 2004: 7-9). In addition to the broad linear upgrading framework outlined by Humphrey (2004), Gereffi et al. (2005) developed a framework to explore value chain governance based on interactions between firms, states, and other chain actors (82-84). These conceptualizations and frameworks support a more robust understanding of the economic and governance structures at play within GVCs, and analyze different forms of GVC upgrading while accounting for a range of chain-related actors (Gereffi et al. 2005). However, they fall short in two key areas: they continue to focus on interactions between businesses, minimizing the role of labor; and the hyper-focus on interactions between producers in the Global South and North ignores chains that exist in local or regional contexts.

Despite the central role of globalized production in GVC analysis, labor has long been absent from these scholarly discourses (Barrientos et al. 2011; Milberg and Winkler 2011; Pegler et al. 2011; Taylor et al. 2013). Introducing a distinction between social (including labor-related) upgrading (Barrientos et al. 2011; Gereffi and Lee 2016; Siegmann et al. 2017) and economic upgrading has signaled a change in this omission. Generally, "[s]ocial upgrading captures gains in living standards and conditions of employment over time" (Milberg and Winkler 2011: 344). This type of upgrading may or may not result from the various types of economic upgrading and labor force composition (e.g., permanent vs. temporary workers) espoused by a producer or sector (Barrientos et al. 2011: 336; Knorringa and Pegler 2006). This research adds to a growing literature exploring the relationship of social upgrading or downgrading as a result of participation in the GVC framework. It also shifts the focus of

[1] Email to author from Dutch Flower Group on 30 July 2019.

GVC labor composition from only a 'developing' country problem to include rich countries, which are generally understood to provide higher-value inputs to the GVC (e.g., R&D, marketing) (Gereffi and Fernandez-Stark 2016: 13).

The GVC perspective is a useful tool to investigate the role of material impacts of technological changes in GVCs on workers, but also to surface how these impacts are produced and sustained by the foregrounding and/or omission by different actors' (policy) discourses. This is relevant against the backdrop of ongoing technological changes, especially with regards to digitalization and other emerging technologies, often labeled as technological (Perez 2010) or industrial revolutions (Schwab 2016) with much more disruptive effects than earlier waves (Frey and Osborne 2013).

This paper uses a GVC lens to structure experiences and representations of the technology-labor nexus of Dutch horticulture, a significant sector of the Dutch economy (Ministry of Agriculture, Nature and Food Quality 2019). This sector leans on two parallel supports to achieve continued economic growth and importance within the national economy. First, Dutch agriculture across all sub-sectors is heavily engaged in technological innovation as an economic growth mechanism (Ivosevic 2018). This is evident through the agricultural research conducted at academic institutions like Wageningen (Wageningen University 2019c) and the educational and industry programming available at the World Horti Center in Westland, the Netherlands (World Horti Center 2019a). Agricultural technology export is built into the agricultural GDP numbers publicized by the Dutch government (Ministry of Agriculture, Nature, and Food Quality 2019). Concurrently, the industry employs a sizeable cheap and flexible workforce dominated by migrant labor from Central and Eastern European (CEE) countries with the current majority coming from Poland (ABU 2018; McGauran et al. 2016; Statistics Netherlands 2019b). Reflecting on these two pillars, this paper asks specifically:

1. If and how Polish migrant workers in the Netherlands are represented in discourses on the role of technological innovation produced by key government and industry actors in the Dutch horticultural chain; and
2. How Polish migrant workers themselves describe the nexus between their work in the horticultural chain, the technologies used therein, and their experiences.

To better position these research questions, it is important to properly identify the role of CEE migrants within Dutch agriculture. The actors in this chain mirror the "smile curve" (Gereffi and Fernandez-Stark 2016: 14) in which developed economies execute tasks such as research and marketing and developing economies provide labor to actually produce the goods. In the Dutch horticulture value chain, these top-tier roles are often filled by Dutch natives, while CEE migrants fill the role of developing economies. The position of migrants is then significantly more precarious than that of Dutch natives (Ivosevic 2018: 15-18). Specifically, the employment relationship and practices exemplify a violation of many of Standing's "seven forms of labour-related security" (Standing 2011: 10). Key here is the role of *uitzendbureaus* (temporary labor agencies) and the structure of Dutch employment contracts. Since 2006, the entire Dutch economy has shifted towards more flexible work arrangements, including self-employment (Flexbarometer 2019). While there are existing regulations regarding the maximum length of employment under temporary arrangements (Netherlands Enterprise Agency 2019b), migrants can often undertake circular journeys which reset their temporary contract clock. Further, staffing agencies can operate out of CEE countries (McGauran et al. 2016: 42) and 'post' agricultural workers in the Netherlands in accordance with EU posting directives, exempting their employees from some of these Dutch labor market protections (European Commission 2019).

The remainder of this paper is structured as follows. Chapter 2 builds out a conceptual framework for this research, focusing on how labor process theory and science and

technology studies provide insights into economic and social upgrading concepts in GVCs. Chapter 3 then explains the methodology used to surface, collect, and analyze data based on the issues to which the conceptual framework sensitized me. Chapter 4 provides necessary background information to better understand the structure and economic role of the Dutch horticulture value chain. Chapter 5 presents an analysis of different perspectives on the role of new technology and migrant labor, ranging from government to migrants themselves, and brings these findings into conversation with both theory and each other. Finally, the paper concludes by presenting answers to the research questions, providing some policy recommendations, and suggesting areas for additional research and understanding.

The following chapter outlines methods for economic and social upgrading and downgrading from a GVC perspective. It then introduces two conceptual lenses into GVC upgrading literature: labor process theory (LPT) and science and technology studies (STS). Building on literature debating the opportunities and challenges of social and economic upgrading in the broader GVC architecture, these two lenses address existing gaps in the GVC literature and create better pathways to understand the role and impact of new technology in a value chain situated mainly within the Global North.

Chapter 2 Augmenting, Weakening, or Replacing Labor

"Workers do not rise with the process" (Braverman 1974: 200).

GVC literature is important to understanding the relationships and interdependencies between businesses, governance, and geographies at international and various sub-levels (Gereffi et al. 2005: 98-99). However, examining the effects of technology on that workforce demands a more specific lens than is generally provided by GVC literature. This paper inserts labor process theory (LPT) and science and technology studies (STS) into the GVC literature, focusing mainly on economic and social upgrading and downgrading, to better conceptualize both why companies invest in new technology and how that impacts the quality and quantity of work in those industries. This is in response to the historical omission of labor from mainstream GVC literature (Hammer and Riisgaard 2015: 1-2), though it has more recently started gaining traction in GVC analysis (Hammer and Riisgaard 2015: 1-2; Taylor et al. 2013).

Upgrading, Downgrading, Both, Neither?

End-of-chain consumers, including both lead firms and individual customers, have consistently placed a downward pressure on firms throughout the value chain to quickly and cheaply deliver products. Much of the GVC literature is focused on the relationship between 'developed' and 'developing' countries (Barrientos et al. 2011; Dolan 2004; Selwyn 2019; Siegmann et al. 2017), with the assumption that GVCs outsource their labor to cheaper countries with reduced workers' rights, wages, and other environmental factors sympathetic to businesses looking to reduce cost (Barrientos et al. 2011: 320). This then provides an opportunity for those countries or producers to improve their position within the chain. However, emerging literature paints a different picture; one in which it is possible for firms to undergo economic upgrading (Gereffi and Fernandez-Stark 2016: 12-14) while workers experience social upgrading (Barrientos et al. 2011: 320; Milberg and Winkler 2011: 341), conceptualized generally as "improvements in workers' labour conditions" (Siegmann et al. 2017: 346), or social downgrading (Milberg and Winkler 2011).

Given the penchant of GVC analysis to focus on the business and governance structures of a chain, it follows that the orthodox conceptualization of upgrading would emphasize those same areas. Early literature suggests four main types of economic upgrading: "process, product, functional, and chain" (Humphrey and Schmitz 2002 as cited in Gereffi and Fernandez-Stark 2016: 12). These can be consolidated generally into two main categories: upgrading the firm's current product or practice using technology and 'skilled' labor; and, upgrading focused on larger strategic directions such as expansion into other tasks and higher value markets (Barrientos et al. 2011: 323-324). Fernandez-Stark et al. (2014) added "entry in the value chain, backward linkages, and end-market" (as cited in Gereffi and Fernandez Stark 2016: 12) to the existing upgrading literature, though again these target mainly the inclusion of economies and producers in the Global South into a GVC.

Several of these economic upgrading strategies are evident when shifting the gaze to the Dutch horticulture chain and can be implemented separately or in combination with each other. Many firms are engaged in developing new breeds or traits within breeds[2] which requires a workforce with specific educational and labor skills, i.e., product upgrading. At the

[2] For example, Dümmen Orange, a large floriculture firm, posts open positions on its website for 'trait discovery', laboratory work, etc.

same time, major growers invest in and implement new technologies to augment or replace labor, i.e., process upgrading. A prime example of functional upgrading is the shift of growers and auctions into areas like logistics where the actor controls the delivery and storage of products in lieu of outsourcing that same logistics work. Chain upgrading is slightly more difficult to place within the context of specific growers, but a good example can be seen in the broad shift of Dutch agriculture into the export of technologies and knowledge; for example, research on various ecosystems by the World Horti Center in Westland (World Horti Center 2019b) and the influence of Dutch technology and management in Kenyan rose growing operations (Kazimierczuk et al. 2018). Missing from all of these conceptions is how these upgrading tactics impact labor and the labor process (Barrientos et al. 2011: 324; Taylor et al. 2013).

Researching the experience of labor within the Dutch horticulture value chain necessitates moving beyond the assumption that economic upgrading directly supports social upgrading (Knorringa and Pegler 2006; Taylor et al. 2013: 2). Social upgrading is a more nebulous concept than economic, but broadly includes improvement in "living standards, including wages, working conditions, economic rights, gender equality and economic security" (Milberg and Winkler 2011: 341). The extent to which this can be explicitly tied to economic upgrading is the subject of academic debate (Barrientos et al. 2011; Knorringa and Pegler 2006; Milberg and Winkler 2011). There is an inherent difficulty in quantifying these social data and the variety of external factors (e.g., labor rights frameworks) that limit or facilitate social upgrading (Barrientos et al. 2011: 324-325; Milberg and Winkler 2011: 349-350). Even in economies with relatively high social rights and protections like the Netherlands, there is no guarantee that all workers participate in, are aware of, or are eligible for these protections and benefits owing to variables like migration status, language barriers, or employer pressures and practices.

In addition to exclusion from upgrading based on external factors like those mentioned above, Barrientos et al. (2011: 325) suggest that "it may be thwarted if the employment created is highly insecure and exploitative". This result is clearly evident in the staffing and recruiting practices of growers and *uitzendbureaus*, which this paper and other research have already described as 'insecure' at best (Ivosevic 2018; McGauran et al. 2016). This is not to say there are not cases of social upgrading in Dutch horticulture. The native-Dutch population has benefitted as it is now generally concentrated in managerial or office work. Some migrants, too, have benefitted as they have been promoted to managerial roles, but there are significant limitations on the availability of these roles such as education, experience, and language skills. Selwyn (2019: 73) takes the de-linking of economic and social upgrading a step further, suggesting that it is not the industry in which people are employed that determines their pay, but the "employer's ability to pay them very low wages". It is precisely the conflict in this quote—who participates and who reaps the rewards of economic and social upgrading—which labor process theory and science and technology studies can help illuminate.

Examining the Labor Process

This sub-section examines Braverman's (1974) assertion that "modern labor processes are indeed degraded" (29) by the use of technology in pursuit of capitalist growth. This is a response, formed in the Marxist tradition, to the Taylorism or scientific management of the early 1900s which weakened the bargaining power of labor (Braverman 1974: 82; Burawoy 1978: 248). This erosion of bargaining power was a result of "break[ing] [labor] into its simplest elements" (Braverman 1974: 82) which came with reduction in pay. It was exacerbated by 'unionization' which saw the institutionalization of "higher relative wages for a shrinking proportion of workers" (Braverman 1974: 150). Since his initial conceptualization of the

labor process theory (LPT) in 1974, the theory experienced a constant stream of support and critique through various lenses (Burawoy 1978; Jaros 2003 as cited in Thompson and Newsome 2004: 156; Smith 2015). This research builds on Braverman's initial assertions, supplementing them with additional strands of literature to better understand the role of migrant workers and technology in the labor process of the Dutch horticulture value chain.

Figure 2.1 below outlines the simplified process as conceptualized by Marx and Braverman; the dotted box calls the reader's attention to the 'productive' area of the process in which this paper is most interested. Braverman (1974) suggests that the labor process has shifted from one benefiting the laborer or a community to a process dictated by and serving the goal of increasing capital (51-53). The finer details of this process will obviously shift based on industry specifics (manual or services industries, geographies, etc.), but the general concept remains applicable across sectors.

Figure 2.1
The Labor Process

Source: Author's interpretation based on Marx 1976: 284 as cited in Smith 2015: 5.

At its core, LPT is concerned with the conflict between the commodification and sale of labor (Braverman 1974: 83), and capital's identification and use of methods to extract increasing surplus labor from workers (Smith 2015: 5). In pursuit of the latter, capital often invests in expanding existing or adopting new technologies to make a given time period of labor more productive (Braverman 1974: 170; Smith 2015: 6; Moore et al. 2018: 9). "Both human labor and technology are integral parts of the labor process" (Smith 2015: 5); however, the inclusion of more technology into the process removes required expertise (Braverman 1974: 200) and where manual labor remains involved, "degrades" tasks (Braverman 1974: 29; Smith 2015: 11). This 'degradation' is also commonly referred to as "de-skilling" (Smith 2015: 12). Capital then further reconfigures the labor process by using a 'division of labor' resulting from deskilling to assign different tasks to different workers (Braverman 1974: 72). This is exemplified by the construct of the contemporary large Dutch grower, who instead of following a process where the grower themselves breed, plant, harvest, etc. they undertake more of a 'management' role, hiring workers for specific tasks within that process. Thus, those employees focused on tasks like trimming branches may incidentally learn about the health or growth cycle of specific plants but will not learn more about the production process at a meso or macro level.

The concept of degradation is supported by other strands of social sciences literature, including science and technology studies (STS). In 'Ironies of Automation', Bainbridge (1983) suggests that capital first attempts to automate those parts of a process which are most simply automated, leaving workers with a range of disconnected tasks to complete in support of the technology (775). Section 5.3 discusses the lived experiences of Polish migrant workers in horticulture and expands further on this concept. Regardless of whether the horticulture industry has not yet determined how, or it is 'too expensive' or not yet technologically feasible, to automate certain tasks this type of skill disconnect is clearly evident in the roles generally undertaken by migrant laborers.

While reducing the required skills of a labor force, LPT also focuses on the effects of technology on the control of labor by capital. The LPT form of control has shifted over the

past 45 years, starting with Braverman's assertion that management "desire[d] to control work and the worker by reducing autonomy" (Smith 2015: 13). Burawoy (1978) did not directly refute this assertion but augmented the idea of control by focusing on workers' consent, suggesting "capital has been able to extend concessions to labor without jeopardizing its own position" (256). More recent literature intimated "that employers may more productively use labour power by engaging with it rather than controlling it" (Smith 2015: 7). This perceived downplaying of control in favor of a more collegial engagement with employees at all levels can be seen across industries (Thompson and Newsome 2004: 150); however, Dutch horticulture still sees a workforce mainly bifurcated along the lines of permanent (mainly 'high-skilled', native) workers and temporary (mainly 'low-skilled', migrant) workers. In practice this segmentation limits the desire of capital to provide concessions to temporary workers as they are reduced to little more than vessels from which capital can squeeze value (Smith 2015: 9).

In addition to control, Braverman (1974) considered the impact of technology on the labor process more generally. As capital seeks to create more and more surplus value through technology, it ensures that each task is the "performed at the lowest possible rate of pay" (Braverman 1974: 344). Braverman contended that the most jobs available in the new labor process construct would be those "labor-intensive areas which have not or cannot be automated" (Braverman 1974: 382). This is again supported by Bainbridge (1983: 775) and emphasizes a key point relevant to this research: in its quest for constant technological improvement, little attention is paid to the impact on the current or future labor force conditions or makeup. The labor process of the Dutch domestic horticultural value chain is integral to better understand the rise of temporary employment and the craving by government and industry for new technology and efficiencies.

New Technologies in Agriculture

In addition to an injection of LPT and the general technological and managerial impacts on labor, there is a gap in GVC literature regarding the impacts of adopting new technologies by capital. Where technology is mentioned, it is often in the context of technological exchange or skills transfer (Gereffi and Fernandez-Stark 2016: 12; Pietrobelli and Staritz 2017: 558)—that is, how those participants lower in the value chain may or may not benefit from the technology and practices of lead firms in the chain. This section will lean on two main items to explore technology in relation to the Dutch horticultural value chain: critique of automation (e.g., Bainbridge 1983) and the emerging literature exploring the impact of new technology on agricultural practice (e.g., Carolan 2017; Carolan 2019).

While much of the current literature is focused on the 'new' problem of technological unemployment or other impacts (Frey and Osborne 2013; Schwab 2016), Bainbridge (1983) illustrates that this is not a novel concept. Broadly summarized, automation is a human-led process, and as such is subject to human fault or oversights (Bainbridge 1983). In two examples focused on system design, Bainbridge (1983: 775) emphasized "designer errors can be a major source of operating problems" and "the designer […] leaves the operator to do the tasks which the designer cannot think how to automate" (Bainbridge 1983: 775). The first is clearly applicable to the 'Grower 1' study further expanded upon in section 5.2. In this instance, 'Grower 1' management is attempting to deal with the impact of large-scale implementation of automated systems which led to two immediate consequences. First, 'automation damage' on some plants reduced the price they command on the market or whether they are sellable at all. Second, the business reached a level of 'over-production' resulting from using the full capacity of the system without regard for sales or appropriate timing. Even with some of the more advanced growing and harvesting systems available, this grower's process was still beholden to human decision-making and the errors therein.

The second point is closely related to Braverman's (1974) concept of deskilling, in which employees are left with an odd assortment of tasks due to capital's investment in automated, 'efficient' systems. Bainbridge (1983: 776) expanded on this, suggesting that the reduction of a job to simple tasks working with a machine "is very boring but very responsible, yet there is no opportunity to acquire or maintain the qualities required to handle the responsibility". The 'irony' here, as pointed out by Bainbridge (1983: 776-777), is that human labor needs to retain or maintain some level of knowledge of the system to both ensure its successful implementation and usage, and to identify issues before and during the process. A recent case study exemplifying this necessity can be seen in the Boeing 737 MAX airplane, which due to a failure of software, system, and training, experienced multiple crashes and is the subject of a US Congressional investigation (Ostrower 2019). The finer points of this issue are not yet public record, but it appears engineers placed a system into production with some understanding of their flaws, while pilots using these systems were either too far removed, too trusting, or too dependent on the technology to understand and intervene during system malfunction.

Regarding the agriculture industry and practice specifically, Carolan (2017; 2018; 2019) explores the intersection of digitalization and automation in agriculture and the social sciences. Carolan (2017: 817) is not focused on the labor process; rather, he frames the issue of 'productivity' in agriculture as a broader result of a very specific (i.e., Western) understanding of food requirements. Kneen (1995) describes this issue as a "cultural bias towards farming that can be 'rationally managed' as technology-maximizing, profit-oriented businesses" (as cited in Bronson and Knezevic 2016: 3). In framing agriculture this way, it becomes a requirement for growers to adopt more productive technologies and methodologies to remain competitive. Orthodox growth models applied to the production of food come at the cost of ignoring both grower and worker labor, animal welfare, and other ways of farming, while creating a need for rapid adoption of technology as in other market spaces.

Agricultural organization in this fashion, including an obsession with 'new' technology, leaves growers susceptible to pressures from actors situated higher in the value chain. Mentioned by Carolan (2018: 748) and by Bronson and Knezevic (2016) is the case study of Monsanto's purchase of Climate Corporation, which "itself is acquiring 'start-ups' (640 Labs and Solum) who are focused on tools for collecting farm-level information" (Bronson and Knezevic 2016: 2). This shows that consolidation in agriculture is not limited to growers or lead firms like supermarkets, but that agricultural tech lead firms employ similar practices as mainstream commercial technology giants (e.g., The Economist 2019). Mirroring the power exercised by lead firms in the horticulture GVC, agricultural technology firms are then able to place demands, including price, on growers or other actors in the value chain (e.g., logistics services).

The increased control by lead firms such as Monsanto in the global agricultural tech value chain is echoed in the Dutch horticultural chain through an incessant march towards technologization. Examination of this control unearths issues of grower data ownership (Bronson and Knezevic 2016: 2; Carolan 2018: 748-749), the 'right to repair' purchased machinery (Carolan 2017: 823-824), and more stringent price, quality, and efficiency targets levied on growers by supermarkets and major retailers. Tying this to either economic or social upgrading reveals the complexity in technological adoption. Regarding economic upgrading, it is true that growers are investing in new technology, but that could be explained as a function of remaining competitive in the industry and not a lasting advantage over their competition (Levins and Cochrane 1996 as cited in Carolan 2019: 7). This may result in chain upgrading for major Dutch growers who can afford to expand into international or knowledge settings, but certainly has a negative economic impact on smaller growers. Social upgrading is also difficult to discern. New technology can create better working conditions for growers

(ignoring for a moment those who work under them) taking the form of less manual labor, better knowledge of their farm, and the like. On the other hand, expensive economic conditions for continued participation in horticulture introduces an element of financial concern, not to mention the questions of rights regarding data and machinery ownership and repair.

Tying it all Together

This section sketched the lenses I will employ to uncover ways new technology is framed by industry and the effects on migrant workers in Dutch horticulture. The parallels between the impact on workers viewed through LPT and the impact on farms through STS are clear. In each instance, the individual unit is reduced to a dependence on its employer: the individual worker is dependent on the grower or temporary labor agency and growers are dependent on lead firms in the value chain. Moore et al. (2018) suggested that "[i]nstead of being a 'neutral' input, technology becomes instead a means by which to increase the rate of exploitation of those workers left behind […]" (10). I advocate this quote could be extrapolated one step further, focusing not only on the workers but on the growers, too, as their response towards workers gains valuable context through understanding their position in their value chain.

Chapter 3 Methodology

"We rarely see descriptions (even in footnotes or appendices) of how researchers came to discover the themes they report in their articles" (Ryan and Bernard 2003: 86).

Though I held some preconceived notions regarding this research based on readings regarding technology and migration, I allowed the data I generated to reform my conceptions and lead me to answers not easily explained by a single existing framework. This research was informed generally by a grounded theory approach (Glaser and Strauss 1967), building on practical advice regarding reflexivity and sampling provided by Bryant and Charmaz (2007). Where this research diverged from that method, however, was in my use of pre-existing theories to derive further meaning from my collected data. Data gathered includes a combination of primary qualitative interviews and conversations with stakeholders and workers, a short survey, analysis of government and industry publications, and engagement with previously conducted primary interviews. ATLAS.ti was used to code these items as applicable in accordance with a qualitative content analysis approach (Flick 2009: 323). Below I outline the methodological choices used to surface and analyze this data as well as issues encountered during this process.

These data collection and analysis methods came to light when considering my research questions in relation to both a general future of work conceptualization (Frey and Osborne 2013; Ivosevic 2018; Schwab 2016) and through issues highlighted by GVC, LPT, and STS literature. For example, Cox (1976) considered the guest worker programs of many post-war Western European economies which sought to attract low-wage migrants from Mediterranean countries (as cited in Phillips 2016: 600). Braverman (1974) considered how "workers [are] not destroyed as humans, but used in inhuman ways" (139). Authors like Carolan (2017) foregrounded the lack of focus on labor in the agricultural sector, regardless of any distinction between management and labor. Given the broad swaths of academic literature and conceptualizations evident in the research problem, I employed specific strategies for each level of the Dutch horticulture value chain to craft a dense mosaic of data.

3.1 'Help Wanted!', But Not Mine

As part of my research I sought a position within Dutch horticulture either as an intern or employee of a grower, or as a temporary employee through an *uitzendbureau* (temporary labor agency). This process sensitized me to the importance of citizenship in both positions available and regarding access to the labor market (Phillips 2016: 599-600). As a non-Dutch, non-EU citizen, my student residency visa has very stringent limitations for working (Inspectorate SZW 2019). This means that not only did I need to locate a company or agency that would hire me without Dutch language skills, but that they would also have to go through the process of sponsoring my work permit. I did apply to two open internships, but received no response. When I mentioned my difficulty in finding work this way, a Dutch friend not involved in my research chuckled and said, "Yeah, you're the wrong color"[3]. Without dissecting that statement too much in this section, he could have meant that I was not 'non-white'—many 'low-skill' jobs in the Netherlands have been historically filled by Moroccans, Turks, or other ethnic minorities (Zorlu and Hartog 2001: 5-6); or, he could have substituted 'color'

[3] Author's conversation with Dutch friend from a sports club, 20 October 2019, The Hague

for 'the right type of migrant' generally (e.g., English speaking, no professional experience in horticulture, familiarity with labor rights).

3.2 Formal Interviews and Informal Conversations

I generally favor an "interviewer as a traveler" (Kvale and Brinkmann 2009: 48-49) style, in which the interviewer "[…]encourage[s] [interviewees] to tell their own stories of their lived world […]" (Kvale and Brinkmann 2009: 48). This method allowed the interviewee to communicate the issues they find most important, which forced me to reconceptualize how I understood the research questions and problems. I developed separate interview guides for migrant laborers, for labor representatives, and for industry members. In the course of engaging with previously conducted interviews and my own interviews and discussions on the topic of technology in the horticulture sector, I had to consistently reflect on and revise my interview guides (King et al. 2019: 66). I brought this same type of 'traveler' (Kvale and Brinkmann 2009: 48-49) approach to the informal conversations I held with union representatives and migrant workers. Given the informal nature these were not recorded. However, I took detailed field notes at an FNV event targeting Polish migrant workers in Venlo in September 2019 which captured quotes, body language, and general themes from conversations. These field notes will be used to better triangulate the migrant experience in my data analysis section.

3.3 Sampling

The multitude of actors[4] and literature involved in exploring the experiences of Polish migrant workers in Dutch horticulture necessitated a range of sampling techniques. For the portion of research regarding the specific experiences of Polish migrants, I leaned on two sampling methods as described by Bryant and Charmaz (2007): "convenience" and "purposeful" (234). This type of sampling enabled me to "recruit participants who represent a variety of positions in relation to the research topic" (King et al. 2019: 57). Engaging deeply with prior research (e.g., Ivosevic 2018; McGauran et al. 2016) and attending conferences focused on new agricultural technology and future of work[5], enabled me to further clarify the scope and components of my research. I then moved towards purposeful sampling to address two relevant streams of information: the lived experiences of Polish migrants and official government and industry discourses. Below are more detailed data gathering methods for each interest group.

Government and Related Institutions

I reached to existing contacts within local government for interviews regarding policies around migrant workers and agriculture, which did not result in any fruitful conversations. I also reviewed national-level, think-tank, and other related organizations' publications regarding how the Netherlands plans to approach emerging technologies across its society. More information on precise document review methodology is laid out in section 3.4.

[4] See Chapter 4 for a deeper explanation of actors in the Dutch horticultural value chain.
[5] Technological Change in Dutch Agro-Food: the Role and Response of CEE Migrant Workers, ISS, 7 December 2018; Smart Farming Conference, Brightlands Campus Greenport Venlo, 27 June 2019

Industry: Growers and Temporary Labor Agencies

I requested interviews with large growers and Rabobank's[6] South Holland investment branch. These requests centered less around the 'treatment' of migrant labor, understanding that it is both sensitive and a core component of the Dutch horticulture landscape, and more on the types of technology and rates of adoption throughout the process. Only one grower responded positively to my message, the rest respectfully declined participation. Table 3.1 below provides an aggregated list of targets to whom I sent a request for participation and the success rate. Large growers were chosen as they would be most likely to have the capital to invest in the newest technology, while the *uitzendbureaus* were contacted after being told by a participant they were the most active in The Hague area. To glean further information about the segmentation of labor between native and migrant, I monitored six major grower and seven temporary employment agency websites (see Appendix 2 for a full list).

Table 3.1
Value Chain Members Contacted

	No. of Requests	No. Agree to Interview
Industry	9	1
Uitzendbureaus	5	0
Other Orgs	8	3

Source: Author's communication with different industry members, June 2019 – September 2019

Unions and Community Organizations

Polish migrants are a key group which the Federation of Dutch Trade Unions (FNV) is targeting for higher participation (Ivosevic 2018: 22-24). Building on previous research I reached out to union representatives in The Hague, Rotterdam, and Venlo. I attended an FNV event in Venlo in September 2019 which targeted Polish agricultural laborers. The event was geared towards health and labor rights, though I was able to hold short conversations with a few different migrants and FNV representatives. They generally spoke about health or labor rights, but the conversations often intersected with my own interest in impacts of new technology—for example, one attendee suffered a lingering leg injury repairing an automated cart. In addition to union representatives I contacted community organizations like the Polish Catholic Parish in The Hague, and volunteer organizations like a job seeker support center in Westland.

Polish Migrants

The most important population for my research was also the most difficult to reach. I had limited access to migrants for a variety of reasons, so researching their experience was a significant hurdle from the outset. Methods here included posting flyers in the Polish neighborhood in The Hague (in Polish, Dutch, and English), Facebook posts in Polish groups (in Polish and English), and academic and personal network utilization. I also combed through Google reviews of various *uitzendbureaus* and sent Facebook messages to anyone whose name I could find on those reviews. Late in the process I met a colleague with a cousin working in greenhouses in Westland who was amenable to completing a short survey and also volunteered to disseminate the survey to as many co-workers as would agree to complete it. The survey was given in Polish, translated by my colleague. Appendix 5 provides the English and Polish translation of the survey provided.

[6] Rabobank provides the majority of loans to growers in Westland per a presentation by Rabobank Westland, ISS trip to Westland, 19 February 2019

3.4 Silences in Official Documents

"The naming of the silence subverts it, draws attention to it" (Carter 2006: 222).

To respond to the first objective posed by this research I conducted a review of official state, industry, and think tank publications regarding the benefits and risks of new technology for the Dutch economy and population. The goal of this analysis was to identify the language and themes (Bowen 2009: 32) this variety of groups uses to discuss, or silence, facets of technological change, Polish migrant agricultural labor, and intersections between the two. This analysis is used to both triangulate (Bowen 2009: 28) findings from other data generated and to identify stand-alone themes (Bowen 2009: 32) that were not obvious or evident in these data. Omissions or silences of specific societal groups in these documents present an opportunity to explore the reason for their absence. Are powerful interests writing on the future structure of the Dutch economy wholly ignorant of the role these groups are playing? I suggest that no, they are not, especially given that official Dutch statistics highlight labor flexibilization (Flexbarometer 2019) and migrant work (McGauran et al. 2016) as key drivers and structural components of the current horticultural value chain.

The question then remains: why are some groups omitted from these official publications? I hypothesize that this answer shifts depending on the author of the reviewed publication. It could range from avoidance of a taboo subject to an expectation that low socio-economic status migrant workers will no longer play a major role in future economic practices. There is a distinct possibility that the overt focus on the 'future' construct of the economy in these writings simply glosses over the process(es) required to shift the economy from where it is now to where the authors believe new technology will lead. Additionally, many of the reviewed publications are resultant of implicit or explicit government participation—at a very basic level, the Dutch government is responsible for determining and protecting the future interests of its own citizens, regardless of contributions made by other groups in Dutch society.

The myriad possible reasons behind group silencing in these documents requires a rigorous, explicit methodology. I based my own approach on Bowen's (2009) article 'Document Analysis as a Qualitative Research Method'. Bowen (2009) highlights the importance of document analysis "to develop a deeper and fuller understanding of" (34) this research topic. The below steps mirror some of the general steps noted by Bowen (2009: 35-38), with more specific additions from me to clearly tie them to my own research.

1. I searched government websites, and had discussions with other people regarding digitalization strategies of which they were aware. I also checked the references lists of documents and financial outlooks posted by banks such as ING and Rabobank.
2. Review document tables-of-contents and full texts for mentions of labor, regardless of whether they referred to 'native' or 'migrant' groups;
3. Quantitative textual analysis through ATLAS.ti to determine word frequency and implied importance (omitting irrelevant common words and controlling for spelling differences between US and UK English); and
4. Thematic analysis of these documents, including which areas appeared in specific documents, which emerged across multiple documents, and a reflection on those items left unstated throughout.

Though there are some limitations inherent in document analysis (Bowen 2009: 31-32), the sensitivity of this study topic demanded review of information not provided directly by stakeholders. "The absence, sparseness, or incompleteness of documents should suggest something about the object of the investigation or the people involved" (Bowen 2009: 33). This is especially pertinent considering the political and financial implications of agricultural

migrant worker treatment. Table 5.1 and Appendix 1 provides a list, author, date of publication, and link to these sources to ensure "robust data collection techniques and the documentation of the research procedure" (Bowen 2009: 29).

3.5 Limitations and Ethical Considerations

This research was subject to a range of limitations affecting my ability to interact directly with Polish workers in Dutch horticulture. Despite these limitations, interesting gaps arose from communication with government officials and industry leaders. Useful data regarding the Polish migrant experience was also well-covered by this. This section should be considered less as a way to highlight shortcomings in this research and more as a roadmap for future researchers in this area to navigate the complex landscape of actors.

Gatekeepers

Although I made some preliminary personal connections as part of an event focused on the topic of Technological Change in Dutch Agriculture held at ISS in December 2018, I was dependent on the responsiveness of labor union representatives, bureaucrats, and migrants already engaged in this type of research or work for their support in facilitating access to further interviewees (King et al. 2019: 59). In several instances, people who previously indicated support for this project were no longer available or no longer as supportive as I initially believed. Upon reflection, I see now that the questions I was most interested in strayed further into sensitive areas (e.g., the treatment of workers) than the research into the general agricultural landscape in which some of these gatekeepers initially participated. For government and industry representatives specifically, some topics are particularly anathema, e.g., the building of a new PolenHotel in Westland (Omroepwest.nl 2019). In the case of industry, I attempted to circumvent this by downplaying my interest in 'migrant' labor in favor of 'work' understood more generally.

Language Skills

My Dutch language is at a low elementary level, and my Polish and other CEE language skills are non-existent, further complicating the interview process. Not only did I need to identify Polish migrants willing to engage with this topic, but I needed participants who either spoke some level of English or who would be willing to grant an interview with a translator. Regarding government and corporate published materials, I mitigated this issue by using electronic translation tools, though that type of translation is apt to lose some important context.

Who Are You?

Trust played a large role in securing primary qualitative interviews with Polish labor migrants and large growers. Part of this was obviously the language barrier. I expect other crucial issues are an unfamiliarity with my topic, my institution, and distrust or concern about discussing employment or business practices. If I place myself in the position of these target groups, I would see little benefit to give information that could potentially be used against me or cost me a job opportunity to a person with whom I had no previous contact. I understand companies' hesitancy as stories critical of the treatment of Polish workers have surfaced often in Dutch media (e.g., Alexander 2011; DutchNews.nl 2018; Lundberg 2016).

Ethical Considerations

Prior to each interview or conversation, I informed the participant about the use of the data I collected and their ability to rescind or edit information prior to mid-October 2019. I also guaranteed I would provide anonymity. This was generally appreciated, though multiple

interviewees did not emphasize a need for this. Though I offered to maintain a signed consent document, none of my interviewees determined that was necessary. All active participants noted an interest in receiving a copy of the final submission.

Chapter 4 The Dutch Horticulture Value Chain

GVC analysis has, as its name implies, been concerned with the global aspect of the value chain, but attention is increasingly focused on national and industry governance systems in which the chain operates (Gereffi and Fernandez-Stark 2016: 6). Inomata (2017) stresses the need to shift away from a purely global focus by suggesting "the world economy is not global; it remains regionally segregated" (15). This chapter takes that suggestion to heart, and outlines the Dutch horticultural value chain from a national and regional perspective to explicitly position the research objectives of this paper. This regional focus is supported by official Dutch government statistics which define the two leading export markets for Dutch agricultural products, including technology, as Germany and Belgium followed by a selection of other EU countries in the immediate vicinity (Ministry of Agriculture, Nature, and Food Quality 2019).

Structure of the Chain

The value chain accounts for the whole of products and services necessary to develop a product from raw material to consumer-ready (Gereffi and Fernandez-Stark 2016: 8). In the case of horticulture this begins with (but is not limited to) items such as land, seeds, greenhouses, and technology and culminates in products sold to consumers through lead firms (supermarkets or other individual retailers). This immediately highlights two important characteristics of the GVC analytical framework. First, each of these inputs has its own value chain as a "supporting industry" (Gereffi and Fernandez-Stark 2016: 8) of horticulture. In the case of technology and technology companies, this materializes as insertion at different links in the chain, from developing new growing technologies to developing new supply chain methods and machinery. Second, traditional macro-level views of GVCs omit totally the concept of 'labor' as an input at any level (Taylor et al. 2013: 1), focusing more on the steps a product takes during its lifecycle[7]. Exemplifying the complexity of this chain and a total omission of the role of labor is a 2018 case study on the value chain of Royal FloraHolland, the largest flower auction house in the Netherlands, which combines domestic and international products (Ahmed et al. 2018).

Regarding the second point, Gereffi and Fernandez-Stark (2016: 22) developed a table from various GVC analyses roughly outlining the main types of jobs, including their characteristics such as education level and job working conditions. Key for this research are the "low skilled" and "moderate skilled" work (Gereffi and Fernandez-Stark 2016: 22) which demand some level of education, training, and formal employment. The Dutch horticulture context is less concerned with the informal economy as most of the low- and moderate-skill jobs within the early parts of the value chain (growing, harvesting, logistics) are captured under official *uitzendbureau* and grower umbrellas, and as such are officially subject to the rules and regulations applicable to these sectors—whether those regulations are followed is not the focus of this section. Polish workers in Dutch horticulture often exhibit traits of both 'low' and 'moderate' skill jobs (Gereffi and Fernandez-Stark 2016: 22). For example, their education levels vary widely through completion of post-secondary education, though a consultant for FNV suggested in 2018 that "less educated Poles are coming to the Netherlands […]"[8]. These workers are inserted into the most physically demanding roles in horticulture

[7] The sample horticulture value chain in Gereffi and Fernandez-Stark (2016: 9) does not show 'labor' at any level of the chain.

[8] FNV Representative Interview, 10 September 2018, telephone, conducted in Dutch by Karin Siegmann.

including logistics, though their opportunities for upgrading are limited by their contract structure, employment agency practices, training opportunities, and related qualifications.

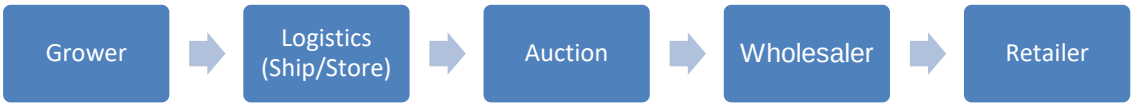
Chain Actors

The horticulture value chain has roots across geographic regions and many industries within the Netherlands. For the purposes of this research, a deep dive into this chain is not necessary or possible; however, a brief overview is beneficial for better understanding the chain and labor's role therein. This subsection will work backwards from lead firms and retailers at one end of the chain to growers at the beginning of the chain. Additionally, a range of related actors play a role in chain governance, including the Dutch national government, local governments, educational institutions, technology firms, trade unions, and other industry and labor organizations.

At the top of the chain lie retailers, including supermarkets, other major firms (e.g., IKEA), and occasionally specialty retailers. Price constraints on growers generally arise from the buying power of the first two, which dwarfs that of the smaller independent retailers. Supermarkets represent the largest retailer of food-based horticulture, and exert tremendous power over the chain given their direct interaction with customers (Franck and Nemes 2018: 10; Gereffi 2005: 93) and continued consolidation due to competition for customers (Franck and Nemes 2018: 11). For ornamental plants (e.g., orchids), however, stores such as IKEA can be added to the list of major retailers exercising pressure on grower prices. At the other end of the chain, growers are consistently forced to find ways to produce goods more cheaply, efficiently, and in accordance with retailer quality standards.

The middle of the chain consists of logistics, various supply chain companies, auctions, and wholesalers. Much has been written about Dutch flower auctions, which themselves have not been immune from consolidation—only two major competitors are left in the country after a series of mergers (Gebhardt 2014: 101). This expansion has actually impacted the entirety of the chain. Auction houses have grown to encompass many logistics functions, including pickup and delivery from growers (Royal FloraHolland 2019), cold storage, and customs navigation (Huiden 2018). Figure 4.1 shows a simple version of the Dutch horticultural chain (omitting labor), with the caveats that the logistics link can sometimes be subsumed by the auction function, while retailers may interface directly with growers or auctions.

Figure 4.1
Dutch Horticulture Value Chain



Source: Author's conception of the Dutch horticultural chain based on Gereffi and Fernandez Stark 2016.

Growers at the start of the chain fall victim to the downward pressure on prices created by those actors further up the chain. Unsurprisingly, these growers adopt common methods to confront these pressures. One option may be investment in new technologies, fostering less need for human labor (Ministry of Economic Affairs and Climate Policy 2018; Schwab 2016) and increasing productivity and efficiency. Applying technological solutions to this problem is certainly an option, though its real or perceived high barrier to entry cost means many smaller growers cannot afford to adopt cutting edge technology. Other options for increasing competitiveness include two major trends seen across Dutch industries: consolidation (e.g., FreshPlaza 2019) and workforce composition, including migrant labor and flexibilization (Flexbarometer 2019; Ivosevic 2018: 14).

Finally, the Dutch government and industry groups including those representing growers, auctions, and retailers often work together through public-private cooperation to set policies to better support the industry. In one example, *LTO Glaskracht Nederland* (LTO) is a lobbying group for Dutch greenhouse growers focusing not only on advocacy, but on creating cooperative research on new crops between its members (Glastuinbouw Nederland 2019). LTO also worked alongside unions in developing the collective bargaining agreement (CAO) to include migrant workers' rights (LTO Glaskracht Nederland 2018: 3). Local government, too, attempts to accommodate the industry. In Westland, the municipality has created strategies for migrant housing and registration (Westlanders.nu 2015).

Industrial Clusters: The Dutch Greenport Model

Related to GVC literature is the theory of industrial clusters defined as "firms and related organizations within well-defined spatial boundaries engaging in similar sectorial activities" (Porter 1998; Pyke et al. 1990 as cited in Gereffi and Lee 2016: 26-27). Gereffi and Lee (2016) developed an analytical framework to understand competing and complementary governance and upgrading (economic and social) between GVCs (lead firm-led) and clusters (government- or producer-led). As with GVCs these clusters were initially studied in economically underdeveloped areas and seen as a response to the pressure to compete within GVCs. However, this same conceptualization is clearly visible in the Netherlands horticulture industry.

Owing to the horticulture chain's importance to the Dutch economy the Dutch government and industry launched a 'Greenport' model focused in six geographic areas, each with their own specialization (Greenport Holland 2019). Greenports seek to concentrate the interests and knowhow of the "golden triangle" (Greenport Noord-Holland Noord 2019)—government, academia, and industry—to foster innovation domestically and increase the export of products, technology, and knowledge. This was a national and local response to threats including competition from other agricultural product exporting countries (Verdouw et al. 2014: 44-45). While the overall strategy is a function of cooperation between the national government and larger firms across many value chain sectors, Greenports are situated to serve the needs of their local constituencies. Local government can respond to issues affecting the industry in a more agile fashion, small businesses can operate and network in a centralized location, and growers can benefit from innovations in plants and operations. All of these interactions build towards a national strategy in which Dutch horticulture retains and builds on its current success (Greenports Nederland 2019).

A Brief Note on 'Technology'

In the case of agriculture, technology is an expansive term and can include basic implements from hand tools through expensive cultivation machinery and processes. This research, however, is interested specifically in how emerging technologies affect the labor force. To explore this, I use the term 'technology' to reference general categories of emerging technologies as found in Schwab's (2016) *The Fourth Industrial Revolution*. Generally, these include automation, unmanned autonomous vehicles (UAVs) (e.g., drones), new sensor technology, the Internet of Things (IoT), robotization, and new algorithms for management or growing (Schwab 2016: 19-28). Many of these technologies are either in use or being developed for the Dutch agricultural sector (Wageningen 2019a). Different agricultural sectors (dairy, horticulture, floriculture, etc.) experience technological changes differently (Ivosevic 2018: 9-12), but the general point for value chain actors is to become more efficient and leaner in production. The flip side of that goal is broadly negative results for workers including longer working seasons and harsh working conditions (e.g., sterile, windowless environments) (Wageningen 2019b).

Chapter 5 Deeply Rooted Issues

This chapter presents an analysis of data uncovered during field work and desk research resulting from the methods described in Chapter 3. I struggled with ordering this section as I did not want it to reflect a perceived value or importance to each perspective. Sensitized by literature on GVCs and their omission of labor, this chapter is then structured in a manner that presents data analysis along the lines of three different links in the Dutch horticultural value chain. It begins with government and industry policies on technology and culminates with the experience of Polish migrant laborers. I suggest this structure is a metaphor for broader issues facing migrant workers in my findings—these migrants experience benefits and consequences from decisions made in a top-down manner without their explicit consent or participation. That does not mean they are agency-less victims (Castles et al. 2014: 36; Paret and Gleeson 2016). In many cases they are willing participants in the process and do not themselves highlight the negative aspects that come to light through the desk research regarding government or grower perspectives.

5.1 Official Industry and Policy Discourses

"The audience cannot be passive in the face of an active silence: they must investigate, interrogate, and attempt to understand the contexts that gave rise to the silences" (Miller: 158 as cited in Carter2006: 230).

Part of the reason I chose to study and research in the Netherlands was its national conversation around how society could, or should, evolve with the widespread adoption of new technology by government and industry. Ideas evident in the 'Dutch Digitalisation Strategy' (Ministry of Economic Affairs and Climate Policy 2018) around labor, education, and the future of business are echoed through other government documents, cluster strategies, and think tank publications. A deeper analysis of these official publications illustrated where the goals of these actors lie: growing the economy and developing industrial applications for technology and the Dutch workforce to support them. Table 5.1 provides relevant information for the documents I reviewed. This section directly responds to my first research objective in identifying whether Polish or other CEE migrants are visible in these discourses.

Table 5.1
Digitalization Documents Reviewed

	Author	Year	Language
National Level			
Dutch Artificial Intelligence Manifesto	Special Interest Group on Artificial Intelligence	2018	English
Dutch Technology Pact 2020	TechniekPact	2014	English
National Technology Pact 2020	TechniekPact	2016	English
Dutch Digitalisation Strategy	Min. of Economic Affairs and Climate Policy	2018	English
Smart Industry Implementation Agenda 2018-2021	Smart Industry	2018	English
Dutch Economy Chart Book	ING Economics Department	2018	English
Local Level			
Werkboek Westland	Municipality of Westland	2016	Dutch
Made in Holland	Greenport Noord-Holland Noord	2019	English
Greenport Westland-Oostland	Greenport Holland	2019	English

Source: Author's review of documents related to Dutch digitalization. See Appendix 1 for links to each.

The general theme of these documents is one of pride and optimism for the future of Dutch government, industry, and the native population based on both economic and social upgrading principles. Progressive terminology such as leadership, innovation, and ambition, including forms using the root word, are woven throughout the documents, particularly the introductions and conclusions. This positive outlook was reinforced by a representative from the Social and Economic Council (SER) who stated, "if you read [the] digital strategy of the government you can only read in one way: government is enthusiastic about digitisation"[9]. In the case of economic upgrading, thematic analysis suggests that the Netherlands takes seriously and desires to build on its reputation as a center for technology research and practice. This implies the government will intervene as necessary via funding and policy instruments to facilitate the growth of the sector in relation to its competitors. The government also seeks to implement much of this new technology into its own processes, with the assumption that new platforms and practices (e.g., privacy) make life easier and safer for businesses and citizens.

Table 5.2
Economic and Social Upgrading: Most Frequently Occurring Terms

	Number of Occurrences	Frequency (Percent of Words)
Economic		
Technology	488	0.48
Industry	387	0.38
Smart	336	0.33
Government	323	0.32
Data	316	0.31
Social		
Education	311	0.31
Research	192	0.19
Learning	109	0.11
Social	95	0.09
Talent	22	0.02

Source: Atlas.TI WordCruncher tool for documents listed in Table 5.1 (excludes *the*, *a*, etc.)

In each section of this report covering various industries there is a focus on robots, digitalization, and various other smart technologies. In the case of agriculture, the proposed outcomes support people (e.g., providing nutrition), the planet (e.g., sustainability practices), and profit (e.g., technology exports) through new technology (Ministry of Economic Affairs 2018: 21). Regarding social upgrading, the Dutch Digitalisation Strategy displays suggested skills and education the labor force needs for its economic programs (Ministry of Economic Affairs 2018). This refers mainly to reforming of the national education curriculum from primary school through university to teach digital literacy and create a 'workforce of the future' (Ministry of Economic Affairs 2018: 8, 29-32). The concept is oft-repeated, showing up again in much more detail in the National Technology Pact 2020 (TechniekPact 2016: 10-21). None of the documents except the Smart Industry Implementation Agenda (SIAA) mention the quality of future work, but even then, the positive spin continues. Future work, even in contemporary manual sectors, is described as "enjoyable" two times in a 188-word writeup (Smart Industry 2018: 23). Within these reports, however, little attention is paid to the current labor force composition in industries targeted for technological advancement.

[9] Interview transcript from SER representative interview, conducted by Karin Siegmann and Petar Ivosevic, 6 September 2018, The Hague, the Netherlands.

Further, words like sustainable have become so saturated at this point that meaning is difficult to derive. Far less aggressive measures than found in these documents have stoked social unrest (e.g., the Farmers Protest of Fall 2019); these policies name some of society's most pressing problems, but provide little substance in how to actually address them.

The reason for these silences is clarified by examining the authors and the purpose of the documents. In each instance, the author has a vested economic interest in signalling their strategies to a national and a global audience. The national audience is placated by this flowery language, which directly contradicts the wealth of 'automation unemployment' articles and news segments—their government is doing *something*; it has a *plan*. The international audience serves a different purpose; here these authors can work to attract investment from companies operating in this space and 'knowledge migrants' to supplement the workforce (Smart Industry 2018: 14). The use of English as the language of publication lends credence to the theory that these were developed for the consumption of an international audience. The only document I reviewed that was not also available in English was a Municipality of Westland production directed at national and local bureaucrats interested in resolving issues such as land use and transportation plaguing the expansion and function of the Greenport, not necessarily its strategic future.

Revisiting the LPT framework, there are two specific points that must be foregrounded. Braverman suggested that "public unveiling of new devices is accompanied by much self-congratulation […] about the lightening of the toil of the worker " (1974: 205); that is, controlling the narrative of new technology further benefits capital. These documents take this even further. They rarely focus on specific technological implementation, but rather families or sectoral groups of technologies (e.g., blockchain, AI). Without specifics it becomes more difficult to expand on the practical points of future work. Technological advancements also allow for the conflation of worker with machine. In these documents there is no focus on industry's "attempt […] *to treat the workers themselves as machines*" (emphasis in original, Braverman 1974: 172-73). Nowhere is this better exemplified than the SIAA idea that "human-oriented technology" (Smart Industry 2018: 23) (e.g., exoskeletons) makes work safer and "allows people to remain in work for longer" (Smart Industry 2018: 23). There is no mention of the meaning behind 'longer'—is this document suggesting that people might work longer hours, or might work well beyond what we currently see as 'retirement age'? At their root these are not substantive policy documents so this depth of data is not common practice. However, it is something that deserves attention as technology progresses considering the large amount of labor issues currently facing workers in highly-automated settings.

So, what is the future for Polish workers? The short answer to whether Poles or any other migrants are represented in these strategies is 'no'. According to these documents they simply are not a part of the future Dutch labor construct in their current socio-economic role. The terms Polish, *polen*, Poland, and most other migration-related terminology do not occur in any of the documents. 'Immigration' was referenced one time in the 'Dutch Artificial Intelligence Manifesto', but that was in reference to luring highly-skilled migrants to the Netherlands for work in AI (Special Interest Group on Artificial Intelligence 2018: 6). The Dutch government wants to continue to foster a positive view of its agricultural and technology industries at home and abroad. From an optimistic viewpoint, it is possible that Polish migrants who have been in the Netherlands and with experience in specific industries could make the transition into higher-skilled jobs interacting with new technology. This could improve their social standing, wages, and other benefits. On the other hand it is possible, maybe probable, that a Dutch economy functioning in line with the expectations of these documents will provide economic and social upgrading for natives while some industries depend on flexible, precarious work undertaken by Poles or another group. Bringing attention to the often exploitative tactics on which the economy functions runs counter to the preferred

government narrative, suggesting that even if they had the data they would likely not publish it in such documents.

Platform for the Information Society

To better understand the government and industry perspectives of the adoption of new technology in the Netherlands I conducted an interview with Arjen from the Platform for the Information Society (ECP). This is a non-partisan think-tank which seeks to address issues such as the disruptive nature of technology to existing business; enhancing public trust in digital businesses and government; and the impact of new technologies for people and society (Platform for the Information Society 2019). The organization conducts some of its own research, but its funding mechanism is primarily request-driven and backed by external stakeholders, often at a ministry level. ECP is obviously focused on the Dutch market, and as such its concerns have, at this point, not extended to the segmented labor market inherent in many 3D (dirty, difficult, and dangerous) jobs (International Labour Organization 2019), including platform-mediated work and agriculture.

Arjen provided me with two relevant print documents. The first, *Het Verhaal Van Digital* (The Digital Story), outlines how ECP sees the effects of advanced technologies for both business and government. Much of the publication details how specific technologies (e.g., Tijink 2018: 20) can be both disruptive and beneficial to business, but there is little written on the effects on the workforce. In the instance of platform mediated work, on which there is a range of academic literature (e.g., Van Doorn 2017) and lawsuits regarding employment status (e.g., De Rechtspraak 2019), the ECP publication takes a very pro-business stance. "It is in the Dutch interest that a larger number of players in this economic sector arises [trans.]" (Tijink 2018: 43). This very particular understanding of technology as important to the economy is in conflict with the ECP mission statement: "The position of people is always central to us" (Platform for the Information Society 2019).

The second publication is titled *The Art of Ethics in the Information Society*. This is a collection of short essays on various digital topics from a range of authors, from artists to engineers. This book aligns with what the ECP representative told me in our discussion: "ethics in the digital sector can be a point of differentiation for [businesses in] the Netherlands"[10] in the global marketplace. The representative suggested that the US, China, and other major technology players were far ahead in developing specific technologies, but the Netherlands, and possibly the EU more broadly, could carve out its own niche in areas related to ethics, rules, and regulations. This desire to show leadership in the ethical and legal technology framework is undermined by a lack of focus on people in official publications and even within organizations. I argue that simply introducing new technologies invisibilizes current structural inequities and builds a future economy on a shaky labor foundation.

Outside of the conversation regarding the positioning of the Netherlands within the global ICT competitive landscape, I was able to ask some direct questions regarding agriculture. However, when I brought up a question about this market (generally) and migrant labor (specifically), the representative very bluntly stated that ECP has not reflected on this position. I did not get the sense that the question struck a nerve or that it was an inherently sensitive topic; rather it seemed that this issue had simply never been raised in the course of their examination of the future of the Dutch labor market. Where the ECP and partners had discussed agriculture was along the lines of sustainability policies, a safe food supply, and working with manufacturers to outfit agricultural technologies (e.g., tractors, sensors) with Internet of Things (IoT) capabilities. I assert that a lack of involvement by labor (e.g., FNV) or laborers (whether native or migrant) means that the ECP strategy could be considered

[10] Interview with ECP representative, 1 July 2019, in-person, Voorburg, the Netherlands

robust by industry and government standards, but still have large blind spots in areas not deemed 'as important' to either of those stakeholders.

5.2 A Grower Perspective

Unlike the actors in the previous section, Dutch growers do not generally publish their own strategies for digitalization, opting instead to advertise their technological advancements through their websites. This is not particularly remarkable; most private industry does not publish major investment strategies. What this language does show are methods through which these growers are attempting to upgrade within the horticultural value chain. Table 5.3 provides some choice quotes from large floriculture organizations in Westland. These companies were chosen for this analysis due to their market position and dedication to technological investment. The remainder of this section presents findings from grower and agency job listings, and a short study of Grower 1.

Table 5.3
Choice Tech Quotes from Horticulture Websites

	Tech Mentioned?	Sample Quote
Company Name		
Dümmen Orange	Y	"We aim for making CSR mainstream in our company and industry, while continuously developing and providing innovative technologies, sustainable products and quality genetics" (Dümmen Orange 2019)
Dutch Flower Group	N	N/A
LevoPlant	Y	"Levoplant was one of the first in adopting a fully automated cultivation system for the Phalaenopsis, after which many growers followed" (LevoPlant 2019)
Maarel Orchids	Y	"…have specialised in the largely automated cultivation of 12.5 hectares of Phalaenopsis" (Maarel n.d.)
OKPlant	Y	"We continually work to optimise our cultivation, product package and on development" (OKPlant n.d.)
Sion	Y	"Every day our breeders lovingly develop new Phalaenopsis varieties" (Sion 2019)
Ter Laak Orchids	Y	"…we continue to invest in technological innovations and developing our product. Always in a sustainable way, because respect for people and their environment is in our nature" (Ter Laak n.d.)

Source: Author's review of grower websites.

The most interesting takeaway from this sample is the meta-theme in which companies frame technological adoption to influence customers. For LevoPlant, the vague assertions of market leadership signal to potential customers that they are early adopters of agricultural technology and thus consumers can have confidence that they will continue to do so. Dümmen Orange frames themselves not as an adopter of others' technologies, but as a provider. This indicates an attempt at functionally upgrading their position in the value chain by shifting into higher value products than traditional horticulture (Gereffi and Fernandez-Stark 2016: 12). Labor is considered only once, but Sion uses language similar to other companies' discussion of technology to frame its breeders as a competitive differentiator.

The second theme of interest is that of pride. These companies pride themselves both on Dutch horticultural practice generally and on their advertised position as leaders and innovators within that chain. This meshes with the agricultural pride theme evident in the official documents analysis in section 5.1 and through government websites (Holland Trade and Invest 2019). Despite that pride, research shows there is a darker underbelly that belies

advertising text (e.g., Ivosevic 2018; Wageningen University 2019b). These are all profit-interested companies located at or near the base of a regional and international value chain facing increasing international competition and price constraints. With these pressures comes a dependence on a cheap workforce who often work in conditions not aligned with CSR, sustainability, or respect as quoted in table 5.3. In an effort to explore this more deeply I requested interviews from all these growers and financial institutions—only one responded positively.

In addition to a text analysis of company websites, I monitored job postings for seven major growers and six temporary labor agencies. These findings illustrate Gereffi et al.'s (2005: 80) assertion that companies "outsource an increasing share of their non-core manufacturing and service activities both domestically and abroad" (2005: 80). Several grower sites had multiple language options (generally Dutch, English, and German or a different third language depending on major sales market). In two instances (Ter Laak and Levoplant), the English option for the jobs site showed no current openings, while the Dutch version of the site showed multiple openings. This is not unreasonable given the market in which these companies operate, but it does serve to ensure the labor market remains partitioned between 'native' and 'other' language speakers. This also means that Polish or other EU workers moving to the Netherlands to participate in this market can be excluded from back-office or management positions regardless of other qualifications such as education or experience. Generally, grower openings were for managerial, business, or technical tasks (e.g., plant breeding, laboratory tasks). Table 5.4 gives a high-level aggregation of this sampling: 'business' includes financial, administrative, and managerial functions; 'technology & research' includes scientific and ITC jobs; and 'horticulture & logistics' is a catch-all for jobs ranging from tomato-picker to forklift driver.

Table 5.4
Job Category Available by Employer Type

	Grower	***Uitzendbureau***
Job Family		
Business	19	6
Technology & Research	18	1
Horticulture & Logistics	7	23
Total	46	30

Source: Author's monitoring of open positions on websites from 22 July – 4 September 2019

Contrary to growers, all the *uitzendbureau* websites I monitored were available in several languages, including Dutch, English, Polish, Romanian, Bulgarian, and occasionally other languages. Given the huge number of agencies, I sampled these sites based on search engine rank and input from interviewees on agencies they knew of or worked with. Not all of these sites publicized all the opportunities available; several required the user to input contact information, including nationality, and a CV. Where sites did publicize opportunities, they were almost always general labor greenhouse jobs such as picking, packing, or logistics. These sites often used favorable language to entice applicants: "Flamingo offers you good working conditions and, of course, a good reward!" (Flamingo 2019). This type of positive framing opposes my general findings from migrant experiences based on other data gathered.

Grower 1: A Short Value Chain Analysis

Paul, a senior manager with Grower 1,was the only large grower representative to agree to an interview. The key takeaways from this interview were threefold: the grower chose not to

participate in the lowest common value chain (i.e., the auction house) as the prices continue to be pushed downward; the grower has revised its technological strategy for optimal production vice maximum; and the grower has revised hiring practices to employ a more stable, higher-skilled workforce across both temporary and permanent employees. I will also reflect on my own observation of the automation process and its impact on labor. Building on all three theories set forth in chapter 2, I will briefly explore the strategies, goals, and practices of this grower.

Our conversation began with a forty-five minute tour of the offices and the mostly-automated greenhouses and production lines. Throughout this, Paul detailed his firm's strategy for achieving economic success in a market that saw continued downward price pressure from imported goods and lead firms in the chain. Broadly, Grower 1's strategy should be viewed through a functional upgrading lens (Gereffi and Fernandez-Stark 2016: 12). The first strategy Paul employed was divesting a set of greenhouses that were not technologically compatible with the core. He suggested the timeframe to see a positive return on upgrading them to match the core was 10-15 years, which he was not willing to undertake. The second strategy was explained during our first stop at an elevated automatic sorting station. Paul pointed to several chutes that were empty or held minimal product; before he joined these were always filled to capacity. He described an overall change in process (Gereffi and Fernandez-Stark 2016: 12)—the firm used to produce as much as possible, then try to sell its units. Now, under Paul, they focus more on selling before they produce. The cost of leaving some chutes empty is less than the cost overproducing and wasting product. This logic runs counter to the productivist logic explained by Carolan (2017) in which growers attempt to create as much product as possible.

The effects of automation on workers and products in the production process is worth closer inspection. Grower 1 bills itself as a 'mostly' or 'highly' automated grower, which reaching back to Bainbridge (1983), means there remain only a handful of disconnected human-led tasks in the process. The majority of the physical labor is spent in initial sorting and scanning into the system, preparing plants for their final growth phase, and packing the product in the correct branded plastic container. The first point was not evident in the STS literature I reviewed, but it stands to reason that an automated system is also a mostly closed system which follows a very specific programmed process; new items must be introduced into it by some means. The second part of the process is particularly dull; a worker stands in one place performing repetitive motions with the same hand. This is not a Grower 1 problem; survey data from 10 other migrant workers in the same industry suggest that they too conduct the same motions as their main labor expenditure in other highly automated scenarios. Preparing plants for the end customer appeared to be the most engaging work. Workers had to manually choose the correct packaging, package the product without damaging it, and prepare it for travel via truck. Lacking from any of the reviewed documents is the concept of 'automation damage' on plants. This can range from a small, slight discoloration to the destruction of several leaves. While rare, each bit of damage impacts the final price the product can command on the market. Workers and cameras are trained to recognize damage, but the system can only log the plant's code while the worker has the ability to make a better assessment and to attempt to mitigate further damage any time they react to a plant. However, that interaction is rare as the plant spends the majority of its life-cycle in unmanned greenhouses and on conveyor belts.

Grower 1's second strategy involved "end-market upgrading" (Gereffi and Fernandez-Stark 2016: 12), also as a response to price pressures. As we walked by a cart filled with branded product for a supermarket, Paul made an offhand comment about not doing business with them to which I responded with a request for more information. He explained that auctions, major supermarket chains (e.g., LIDL, Albert Heijn), and retailers like IKEA have

too low a price-point to make any regular sales to them worthwhile, even at large scale. However, their budget increases when they run in-store special events—essentially Paul's product acts as a loss-leader to get people in the door and shopping. Paul explained that his major clients now were those who could afford a higher price—boutiques, events, hospitality.

Finally, Paul revamped Grower 1's staffing practices for both permanent and temporary employees. He repeatedly stressed they did not follow the usual 'grower model' for temporary labor. The 'grower model' works as follows: a grower will call an agency and request 80 workers for the next day; the day after, the grower will call back and request 75, and specify which five of the previous 80 they do not want to return. This practice means the temporary labor is disposable, but also that these laborers do not have a chance to learn an industry or become more productive or better skilled. Nor do they achieve a level of comfort with management or with a specific product. They are simply "cheap fingers" (Ivosevic 2018: 28). In Paul's estimation, this was counterproductive to business needs and not a particularly ethical way to operate.

Paul explained how he revised the temporary recruiting process to attract agency workers interested in long-term engagements and those who fit the culture he was building. He struggled to find male migrant workers who were comfortable reporting to two Polish women floor leaders. He stated several male temporary workers had issues or reservations regarding taking instruction from women in management roles. He worked together with the agency to develop a set of interview questions to diminish those occurrences, and had seen some progress. He also described how the grower's majority-female production staff lobbied for time off in addition to the 4-5 weeks they were granted as part of their employment. The migrant workers stated that this time was not enough to take vacations and to return home to visit family during important holidays or events, so Grower 1 developed a program in accordance with the CAO through which workers can 'bank' hours. CAO regulations state that no deviation is allowed unless it is a 'minimum' CAO (Netherlands Enterprise Agency 2019a); Paul suggested his program was approved so the grower is likely not saving on any overtime costs. Finally, Grower 1 introduced an education policy for which both temporary and permanent workers are eligible. The company will provide a level of tuition assistance for a guarantee that the worker will remain with the company for at least 12 months. Paul hoped workers would use this for Dutch courses, business courses, and other industry-related items. This type of company support can be seen as altruistic, or as developing the collegial atmosphere to better control the process and extract surplus value from a labor force (Smith 2015: 7).

The gender equality, fair working conditions, and skills upgrading strategies all satisfy boxes for social upgrading in GVCs. However, such a diversion from the usual industry business practices like this demand closer inspection. Over the course of the tour Paul often returned to the concept of "servant leadership" (Greenleaf 1970), in which the manager "[…] makes sure that other people's highest priority needs are being served" (Greenleaf 1970: 6). I suggest another lens through which to view these practices is that of Dutch emancipatory nationalism. This argument builds on an assumption that Dutch society is the gold standard by which to measure social rights like equality between the sexes or sexuality (Jivraj and de Jong 2011: 4). In turn, this leads to conflict when others, especially migrants, are seen to threaten what has become an integral part of the national identity. If a migrant does not act according to the rules of this Dutch imaginary, this concept asks "whether they should be allowed to belong within Dutch society" (Jivraj and de Jong 2011: 5). In the case of Grower 1, it would be useful to better understand whether the women bosses assisted in developing agency questionnaires, how long they had lived in the Netherlands (had they too adopted this worldview), and the behavior of the migrant worker leading to their dismissal.

5.3 Polish Worker Perspectives

I was sitting across from Jakub, a Polish migrant in his early 20s, in a café in The Hague. He smirked and said, "do you know what I was given on my first day at a greenhouse? A wire brush, the same one we've used for 100 years, to clean grates"[11]. This was in response to my question about advanced technology in the greenhouses in which he worked. He explained that the production lines used conveyor belts, scanners, and other industry-standard technology, but much of the manual labor that does not directly impact the plant growth process was not yet automated. He provided other examples such as moving plants or materials by hand and by driver-operated forklifts instead of automated ones. While I was transcribing the interview I kept revisiting this—how much had I internalized the narrative of new technology espoused by government, industry, and academia? I asked what I thought to be a simple question: 'can you talk a bit about the types of new technology you used in the greenhouses'? I made an assumption which turned out to be incorrect in Jakub's experience. I learned from this and shifted future conversations to asking people to describe their daily work, then probing further when the topic of technology arose.

Jakub's experience is a success story when reflecting on social upgrading, but it appears to be in spite of the Dutch horticulture chain and not because of it. He originally moved to the UK from Poland to work in agriculture, then moved to Venlo in the Netherlands. Over the course of a couple years he worked at several different greenhouses in Venlo and Westland as an employee of various *uitzendbureaus*. He knew he did not want to remain in agriculture, so he used this time to save money, build language and technical skills, and to identify the next step for his career. Jakub is now out of horticulture and works for a parcel delivery service. He said he prefers this work; he has an official contract guaranteeing better pay, the conditions are better, and he is entitled to additional labor protections. Regarding the last point, he emphasized that there are monthly presentations on safety and union outreach by both the company and external groups which is something he never received or witnessed in a greenhouse. He does not intend to permanently stay in the parcel field either, but suggested that he needs to save money before he can make his next career move.

Focusing on technology, Jakub described the tedium of floriculture and paprikas as a result of automated processes. During his work with flowers he stood in one place and moved each individual pot from one tray to another by hand for at least eight hours a day with few breaks. With paprikas he described standing on a cart about two meters tall, controlling its direction with his foot while trimming plants by hand. Each of these instances mirror the issues with disparate tasks resulting from automation raised by Bainbridge (1983) and the degradation of work by Braverman (1974). Further, he described multiple instances in which trucks he was asked to drive were either improperly registered or repairs were not completed. In one case he exclaimed 'the brakes didn't even work—it took six kilometers to stop from a speed of 30 kilometers per hour'[12]. I pressed here on this point—if growers could not be bothered to maintain trucks, how did they maintain their other technology? He claimed that many of the growers for which he worked were so focused on producing items at low cost that they reduced costs in all other facets, including maintenance for 'non-productive' machinery and labor.

Jakub's story of social upgrading is an outlier when compared with other migrant perspectives in my research, but his struggles with the labor process and employment conditions are not. During his time in horticulture he experienced a range of workplace abuses, including poor housing conditions and working within two meters of open biohazard storage in a

[11] Interview with 'Jakub', 15 August 2019, In-Person, The Hague
[12] Interview with 'Jakub', 15 August 2019, In-Person, The Hague

greenhouse. He knew there was a demand for his labor, so if one agency provided terrible housing or underpaid him, he would simply leave for another agency. I proposed his language skills (some Dutch, at least conversationally fluent English) and experience in the UK played a role in this, with which he agreed. He suggested other migrants "agree with everything because they don't know the language and don't want to make employers mad"[13]. While he was certainly not apologetic about the abuses of agencies and growers, he also framed migrant workers who did not do the same as 'lazy' or complacent. This is too broad a categorization. Literature suggests "[i]mmigrant workers often make nuanced decisions about when to call out employer abuse, and when to persevere" (Paret and Gleeson 2016: 281). Jakub was the product of a specific life experience which provided him tools to resist some of the most egregious workplace practices; others have a different tolerance depending on their background.

I opened this section with Jakub's thoughts to contextualize the experiences described by other workers with whom I had contact. Often invisibilized in conversations about work, technology, and the intersection between the two, the remainder of this section builds on conversations with and surveys of Polish migrants in the Dutch horticulture chain to better understand their experiences. These contacts illustrate a range of positive and negative aspects of technology and, more broadly, the migration journey.

Migrants' Silence about Technology

Section 5.1 illustrated how government and industry publications on the future of work in the Netherlands omitted and silenced labor, especially that of migrants. My experience in discussing these issues with Polish migrants is that many of them also do not give much thought to how their work is impacted or degraded by new technology—the labor process is "unknown to them" so they accept it (Braverman 1974: 129). This is not to say they do not notice it, but rather there are too many other issues which demand their attention, including housing and wage practices. In discussing this topic with participants at an FNV event in Venlo, technology was often used as the starting point to explain other issues. Table 5.4 lists (anonymized) conference participants with whom I spoke at this event.

Table 5.5
Conversations Held at FNV Venlo Event

	Nationality	Sex	Position
Workers			
Antoni	Polish	M	Mechanic
Jan	Polish	M	Team Lead (Tomatoes)
Julia	Polish	F	Horticulture Worker
Union Members			
Lucas	Dutch	M	Director
Emma	Dutch	F	FNV Venlo (Polish Outreach)
Evi	Dutch	F	FNV Venlo (Polish Outreach)
Anna	Dutch	F	Health and Safety

Source: Author's discussion with FNV Venlo event participants.

[13] Interview with 'Jakub', 15 August 2019, In-Person, The Hague

Prior to the start of the meeting I had a chance to discuss migrant and technology issues with several union representatives. Many of the issues they raised have already been covered in other sections of this research (e.g., flexibilization, EU posting directives, wages). Anna, the Health and Safety Advocate, discussed the difficulty in attributing workplace injuries (e.g., burnout, repetitive motion injuries) to automation—FNV may have access to anecdotal and trend data to support this but does not have the resources to parse through the data they have or collect the data they need. A related workstream for Anna is advocating for machines to adapt to human workers instead of the orthodox model of people changing to work with machines. This mimics the concept of human-oriented technology discussed and critiqued in section 5.1—making the machinery 'safer' does not fundamentally alter the exploitative nature of the current Dutch horticulture chain.

During a break-out session halfway through the event I spoke with Antoni, Jan, and Julia about my research and their experiences. Antoni started about 10 years ago as a greenhouse worker, but was quickly burnt out by the pace and hours. He shifted to working as a mechanic after a year, but has only recently gotten his position officially updated on his employment contract which comes with a pay raise according to the CAO. When asked about training opportunities available for this type of job switch, he was very blunt. He stated that growers do not offer any trainings—after all why would they actively try to shift cheap labor away from the production process and into higher-skilled, higher paid jobs? He added that Polish migrants already working as mechanics were also unwilling to train new people since they feared replacement by younger, cheaper mechanics. The competitive system in which these workers operate erodes potential for collaboration or organization. Like Jakub in the previous section, the upgrading Antoni experienced was a direct result of his own advocacy, not of participation in the value chain more broadly.

Since Antoni is a mechanic, he had a macro view of his grower's investment strategy in technology. He suggested there is not 'more' technology being used, but the technology is generally 'better'. Instead of responding to my clarifying question about this statement, he used this as a jumping off point to describe why he joined FNV and why he was at this meeting. Jan gave me a brief description of the work involved as a team lead in tomatoes. He is employed by the grower and described his main focus as quality assurance, though the initial quality check is completed by a machine so he is actually checking the work of the machine in the style of Bainbridge's (1983) concept of monitoring. In his role as lead, Jan also has a team of grower and agency employees. This type of mix is discussed by Barrientos et al. (2011: 36) as a method "to secure quality and consistency of production and […] to cope with fluctuating orders and downward price/cost pressures" and is prevalent in Dutch horticulture. As with Antoni, Jan quickly switched from a discussion about himself and the technology he works with to overall poor conditions facing migrants.

Antoni returned as Jan began showing me photos of dormitory conditions on his phone. The three workers became more animated in discussing these conditions instead of their own experiences. As I reflected on their descriptions of false 'model rooms' created for labor ministry spot checks, rampant mold, and minimal opportunity to interact with the world beyond the housing-work-housing cycle I saw an overlap with the Chinese dormitory labor model (Ngai and Smith 2007). The two models diverge in very specific ways including the role of the state (e.g., Chinese state control of residency permits) and worker sex (mostly female workers in China) (Ngai and Smith 2007: 30, 32). However, both the Chinese and Dutch horticulture models target "mainly single workers for short-term employment" (Ngai and Smith 2007: 30). Further, the pre-fabricated housing separated into 25-square-meter rooms with two beds and a chair is not designed for family (parents and children) in much the same way as the eight-person Chinese dormitories are not (Ngai and Smith 2007: 32). In the Netherlands, this model grants an extra layer of control to the employment agency. The

agency then controls the entirety of the labor process including social and reproductive aspects, from where the worker sleeps to when they go shopping.

In addition to these conversations I surveyed 10 Polish migrants working in the Westland greenhouse sector, nine of which were *uitzendbureau* employees. In each case the respondent stated that their greenhouse was 'highly' or 'mostly' automated, but only two stated they had seen improved technology in the past two years. Nine of them described their work as repetitive – most worked as 'stickers' in orchids. Their clock-in process uses a chip card, which is different from Jakub's description in which he described attendance as very lax. None of the respondents noted any pay discrepancy, so it is possible that better tracking technology leads to more accurate payment. This did not surface much new information on technology, but when asked about unions or organizing each respondent said they were not aware of any unions or other organizations operating in their greenhouse. They also were unaware of the CAO for their work. This illustrates a failing on the part of the unions or other community organizers. People cannot advocate for their own rights if they are unaware of them to begin with.

Concluding Thoughts

Researchers, government, and unions treat new tech as an emerging threat or opportunity for business, for rights, or for organizing. However, in discussions with migrants interacting with this technology, the role of technology at work was secondary. In my own discussions, I needed to steer the conversation back towards this topic—the workers themselves were more interested in sharing the positives and negatives of their own migration journeys. This is important and necessary information, and I see this as underscoring a hierarchy of needs versus importance. How can people reflect on how their jobs are made easier/harder when they are concerned with collecting the full wages owed from temp agencies, or trying to find acceptable accommodations?

5.4 Why Do People Keep Migrating?

All of the research presented thus far has pointed to two major themes in the CEE-Netherlands migration journey. First, low-wage labor and migration (currently CEE and Polish) is a structural component of the Dutch horticulture industry (Greenports Nederland 2019: 41), regardless of whether the government, industry, or the public are willing to acknowledge or confront it. Second, migrants have a range of experiences during and after their migration journey, with many identified by this research as having some degree of both positive and negative experiences. Given the preponderance of evidence regarding invisibility and precarity at work uncovered by this research, not to mention any number of readily available non-academic sources[14], the question of why Polish migrants continue coming to the Netherlands must be addressed. It is not enough to simply accept these migrants as "passive victims at the bottom of commodity chains" (Barrientos 2010 as cited in Taylor et al. 2013: 2). Migration studies literature provides a range of theories through which to approach this question, but I will focus on the two most straightforward.

The simplest explanation provided by literature is neoclassical migration theory. As its name implies this suggests that "people are rational actors" (Castles et al. 2014: 30) and undertake a decision to move based on economic comparisons such as wage level in home- and sending-country. This theory does hold some weight for the current study of Polish migrants

[14] Newspaper articles, documentaries available on Youtube, Polish language Facebook groups, Google reviews of various *uitzendbureaus* in Polish, Dutch, and English.

given the large disparities in minimum wage between countries. In 2019, minimum wage in Poland is set at €520 per month [roughly €3.42/hour based on a 152 hour work month][15] (Benecki et al. 2019) and in the Netherlands at €9.94/hour for greenhouse labor[16] (Actor Bureau 2019: 57). However, this theory fails to account for individual or household agency and a range of other practical factors including migrants' knowledge of the labor market conditions in the receiving country (Castles et al. 2014: 31). It also fails to examine historical context of sending and receiving countries (e.g., post-Soviet society in many CEE countries). As highlighted throughout this research these are all key variables in the decision to migrate and the receiving-country experience.

Complementing the main idea of neoclassical theory is Alba and Foner's (2015: 47) concept of "the immigrant bargain". This confronts "the initial willingness to accept low-level jobs […] in exchange for the possibility of future advances (Alba and Foner 2015: 47). The authors were taking a more long-term view of the migration journey in which a labor migrant settles, works, and hopes for a better socio-economic outcome for their second generation family (Alba and Foner 2015: 47), which is not necessarily the case for all contemporary in-migration of Poles to the Netherlands. However their findings are still relevant to Polish migrants who intend to stay only temporarily in the Netherlands. They suggest "backward-looking comparison [of wages] helps to sustain [migrants] in situations where they often enough occupy the bottom" (Alba and Foner 2015: 66). This is an attractive theoretical lens through which to view those Poles who 'persist' despite poor working or living conditions.

A more holistic, meso-level explanation behind continued migration in the face of so many potential negatives is migration systems theory, or "how migration is intrinsically linked to other forms of exchange" (Castles et al. 2014: 43). Particularly relevant to this research is the idea that not only communication channels, but the perceptions of 'successful' migration journeys impact the likelihood of further migration (Castles et al. 2014: 44). This type of circular logic was captured by Antoni when he discussed the spending behavior of Poles who returned to Poland. He intimated that while migrants may not have saved much money during their journey because of personal spending and/or predatory *uitzendbureau* practices (e.g., expensive housing), they often purchased new cars or other 'status' items upon return[17]. This suggests that not only did the migrant hold an internalized idea of what 'success' looked like before and after their journey, but that real or perceived social pressures in Poland demanded a certain visualization of that success (Castles et al. 2014: 44).

[15] 2019 Polish national minimum wage; new legislation will raise it to €930/month by 2024. See Benecki et al. 2019 reference for further information.

[16] For those employees older than 21 years. This CAO is specifically for greenhouse work. See Actor Bureau 2019 for more information (in Dutch).

[17] Conversation with Antoni at Venlo, the Netherlands on 31 August 2019.

Chapter 6 Conclusion

This research uncovered clear evidence of continued invisibilization of Polish migrants in the horticultural value chain by a range of Dutch actors writing on the impact of technological innovations on the Netherlands' future economy. In examining the discourses in the actors' policy and strategic documents, I found little of substance and a wealth of flowery, optimistic language. These findings should concern Dutch citizens as well. Castles et al. (2014: 35) suggest that "not all work processes can be outsourced". Therefore, industry will attempt to pay the lowest wages it can to complete the work—the only two options for that labor are Dutch citizens and migrants. While the research and conceptualization for how the government and industry will use new technology is clearly maturing, the actors' idea of how society should shift from where we are now to that next point is sorely lacking.

In many cases, the plan for the future workforce is to make sure everyone is comfortable with digital technologies and to introduce technology education and skills trainings at all ages, from primary school through end-of-career workers. This is not a bad goal in and of itself; however, when reviewed against the context of other, more well thought out strategies like adopting blockchain for banking security, putting the onus on the individual to train leading-edge skills while also theoretically working or attending school seems a heavy burden. I assert that the real purpose of these documents is evident when considering author and audience. These were published, in English, to bolster the appeal of the Netherlands and its industries to investment capital. That documents meant for regional or interest group only audiences would be published in English should serve as a strong indicator that the strategies are not only for national consumption.

This paper also explored how migrants themselves are currently experiencing some of the changes in technology in horticulture outlined by these documents. My findings suggest that while it is true that this community is impacted by technology, it is seen as 'part of the job' and does not require as urgent a remedy as poor housing or stolen wages. Additionally, many Polish workers are supporting growers who are almost fully automated, giving them little chance to develop the skills necessary to move beyond an assortment of manual tasks supporting the machines. In other cases such as smaller growers with less money to invest in automation, migrants are manually performing a large share of the work. Either way, they are performing dirty, dangerous, and demeaning jobs for minimum wage in support of an industry on which the Netherlands prides itself. The two-headed threat of difficult conditions and low pay is not sustainable for Polish migrants like it was not sustainable for other precarious groups in the past.

Finally, this research addresses the labor gap in GVC literature by examining the impacts of technology on labor through a regional value chain lens. This built on concepts of social upgrading by Barrientos et al. (2011) and Milberg and Winkler (2011). Unfortunately it seems that migrants experiencing any number of social upgrading facets is rare. In addition to Taylor et al.'s (2013) assertion that labor should be included in GVC analysis, I shifted the traditional GVC lens from a South-North view to a chain located entirely within the North. Not only does this impact GVC analysis specifically, but shifting the Southern gaze could prove fruitful for a number of other theories.

In the course of this research the problem of legislating abuses by temporary labor agencies appeared time and again. This was not my focus, however, given the Dutch economy's dependence on migrant labor and continued growth of flexibilization in the Netherlands, deeper research on this topic is imperative. New policies (amending of EU Directive 96/71/EC and 2020 Collective Labour Agreement) are coming into effect in 2020, which

could provide a starting point for a longer-term study. Furthermore, the intersections of the Dutch economy and technology are ripe with future research opportunities. This paper looked at a very specific population and a very specific sector. Even staying in agriculture generally, other sectors for research should include dairy and meat. These have to contend with the added complexity of current Dutch policy on climate change. I would recommend future researchers have a basic conversational command of the language(s) of their target groups. I would also recommend considering participatory research for any of these industries; relying on interviewees is sufficient but properly framing and translating questions into meaningful data is limiting (especially into languages in which you have no skill).

Appendices

Appendix 1
Links to Digitalization Documents

Title	Author	Link
Dutch Artificial Intelligence Manifesto	Special Interest Group on Artificial Intelligence	http://ii.tudelft.nl/bnvki/wp-content/uploads/2018/09/Dutch-AI-Manifesto.pdf
Dutch Digitalisation Strategy	Ministry of Economic Affairs and Climate Policy	https://www.government.nl/documents/reports/2018/06/01/dutch-digitalisation-strategy
Dutch Economy Chart Book	ING Economics Department	https://www.ing.nl/media/ING-Dutch-Economy-Chart-Book-Q4-2018_tcm162-157071.pdf
Dutch Technology Pact 2020	TechniekPact	https://www.techniekpact.nl/wp-content/uploads/2014/03/Dutch-Technology-Pact-Summary.pdf
Greenport Westland-Oostland	Greenport Holland	https://greenportwestholland.nl/wp-content/uploads/2015/05/PositionPaperGPWO.pdf
Made in Holland	Greenport Noord-Holland Noord	https://www.greenportnhn.nl/sites/default/files/sector/overig/made_in_holland_-_greenport_nhn.pdf
National Technology Pact 2020	TechniekPact	https://www.techniek-pact.nl/cdi/files/e3bd421f98a0f362b6a13091de60d08978df34e9.pdf
Smart Industry Implementation Agenda 2018-2021	Smart Industry	https://smartindustry.nl/wp-content/uploads/2019/04/SI-Implementation-Agenda-2018-English.compressed.pdf
Werkboek Westland	Municipality of Westland	https://www.gemeentewestland.nl/fileadmin/documenten/ondernemen/werkboek_westland_okt16_def.pdf

Appendix 2
Growers and *Uitzendbureau* Job Websites Monitored

Company	Grower/Agency	Link
Dümmen Orange	Grower	https://www.dummenorange.com/site/en/vacancies
ERFLEX	Agency	http://www.erflex.nl/werknemers/
Flamingo	Agency	http://www.flamingobv.nl/
FlexWorx	Agency	http://www.flexworx.nl/vacatures
LevoPlant	Grower	https://www.levoplant.nl/nl/levoplant/kom-werken-aan-de-top
Maarel Orchids	Grower	https://www.maarelorchids.nl/nl/werken-bij
OKPlant	Grower	https://www.okplant.nl/home/vacatures/
NL-Jobs.com	Agency	https://www.nl-jobs.com/en/job-offers
Sion	Grower	https://www.sion.eu/werken-bij/
Ter Laak Orchids	Grower	http://www.orchidee.nl/nl/Over-ons/Werken-bij-Ter-Laak-Orchids
Trionymus	Agency	https://trionymus.nl/vacatures-van-uitzendbureau-trionymus-personeelsdiensten-uit-bleiswijk-lansingerland
Veldwerk	Agency	https://www.veldwerkuitzendbureau.nl/nl/vacatures
Voorne Putten	Agency	http://www.voorneputten.nu/vacatures/

Appendix 3
Research Participants

Name	Organization	Role	Nationality	Sex	Location	Type
Arie	ECP	Senior Manager	Dutch	M	Den Haag	Interview
Paul	Grower 1	Senior Manager	Dutch	M	Westland	Site Visit; Interview
Jakub	Parcel	Worker	Polish	M	Den Haag	Interview
Anna	FNV		Dutch	F	Venlo	Conversation
--	FNV		Dutch	F	Venlo	Conversation
--	FNV		Dutch	M	Venlo	Conversation
Antoni	Greenhouse Grower	Head Mechanic	Polish	M	Venlo, NL	Conversation
Jan	Greenhouse Grower	Team Lead (Tomatoes)	Polish	M	Venlo, NL	Conversation
Julia	Greenhouse Grower	Unspecified Work	Polish	F	Venlo, NL	Conversation

Appendix 4
Responses from Declined Interviews

Organization	Respondent Title (if available)	Selection of Text from Message	Other Notes
ABU	None	Responded to email, but suggested that they have minimal insights into specific sectors. Provided some broad data regarding amount of CEE migrant workers in the NL.	
Dümmen Orange	None	"Thank you for your interest. Unfortunately, we have no time to discuss this. Good luck with completing your study."	
Dutch Flower Group	Marketing	"We are a holding group and have no insight into growing labor mechanics"	
ERFLEX	None	None	Uitzendbureau
Fairwork	N/A	Suggested I reach to Anna Janssen who runs the Polish information point in Westland	
Flamingo	None	No response; website and vacancies available in Dutch, English, Polish	Uitzendbureau
FNV		Suggested I reach to a different colleague	
FNV		Emailed due to colleague's out of office; suggested he would get me in contact with other FNV Den Haag/Westland people when they returned from summer holiday	
FNV	Consulent Agrarisch Groen	Exchanged some emails, unable to find a mutually suitable time to meet.	
LevoPlant	Director	"I am sorry to inform you that we have not the opportunity to cooperate with you in this investigation."	
LTO Noord	None	No response	
NL-Jobs.com	None	No response; website available in Dutch, English, Polish, Romanian, and various other CEE country languages	Pickers, logistics, housekeeping
OK Plant	None	No response	
Polish Parish of Den Haag (Roman Catholic)	None	No response; email sent asking for information about any groups the church might run re: support, job searching, etc.	Polish Catholic Parish
Rabobank	Manager Food & Agri; Leiden-Haaglanden	No starting point for our participation; suggested reaching to TU Delft	

Sion	None	No response	
Ter Laak Orchids	HR Medwerker	"I have send your request too one of my colleagues. If we have any opportunities for an interview or conversation we will let you know. Ik wish you all the best with your thesis."	Westland Grower
Trionymus	None	No response; website and vacancies available in Dutch, Polish. Website says they focus on greenhouse, logistics, technicians, and cleaning	Uitzendbureau
VoornePutten	None	No response; website and vacancies available in Dutch, English, Polish	Uitzendbureau
World Horti Center	None	No response to multiple requests for discussion, also suggested I get in contact with them by many people.	

Appendix 5

Survey Provided to Polish Horticulture Workers

This is the text of a survey provided to some Polish migrants located with the assistance of an ISS classmate. The English language version was not provided to workers—Ewa was kind enough to translate my questions and the respondents' answers to Polish. The English translation of each section immediately follows the Polish text.

Szanowna/y Pani/Panie,

Bardzo dziękuję za chęć wypełnienia tej ankiety. Poniżej znajdzie Pani/Pan 9 pytań. Proszę odpowiedzieć na nie jak najobszerniej; wszystkie Państwa doświadczenia i przemyślenia są warte zapisania!

Odpowiedzi można udzielić anonimowo.

Z góry dziękuje za współpracę!

Dear Sir / Madam,

Thank you very much for your willingness to complete this survey. Below you will find 9 questions. Please answer them as widely as possible; all your experiences and thoughts are worth saving!

Answers can be given anonymously.

Thank you in advance for your cooperation!

1. Dane osobowe
   a. Imię (możesz pominąć):
   b. Płeć (K / M / Inne / chce pominąć):
1. Personal data
   a. Name (you can skip):
   b. Gender (F / M / Other / want to skip):

2. W jakim sektorze rolnictwa pracujesz (uprawa kwiatów, ogrodnictwo, inne) i co robisz?
2. What agricultural sector do you work in (flowering, gardening, etc.) and what do you do?

3. Czy jesteś zatrudniony przez hodowcę, czy przez uitzendbureau / agencję pracy tymczasowej?
3. Are you employed by a farmer or by a uitzendbureau / temporary employment agency?

4. Czy możesz opisać twój zwykły dzień pracy? O której godzinie wychodzisz i wracasz do domu?
   a. Jak meldujesz się (clock-in) ze już jesteś w pracy?

b. Ile godzin pracujesz?
c. Jaka jest struktura wynagrodzeń (wynagrodzenie godzinowe, „stawka akordowa”, premia za produktywność)?

4. Can you describe your usual work day? What time do you go out and come home?
   a. How do you report (clock-in) that you are already at work?
   b. How many hours are you working?
   c. What is the pay structure (hourly pay, "piecework rate", productivity bonus)?

5. Z jakich technologii korzysta szklarnia? A jakich narzędzi używasz w swojej codziennej pracy? Czy większość procesu jest zautomatyzowana w Twojej szklarni?
   a. Jak mierzona jest twoja praca? Na przykład odwiedziłem szklarnię, która pokazywała produktywność pracowników na ekranie telewizora, aby wszyscy mogli zobaczyć, jak sobie radzili tego dnia.
   b. Czy hodowca dzieli te pomiary z tobą?
   c. Czy widziałeś więcej nowych technologii (światła, bieżnie, kamery) wdrażanych w ciągu ostatnich 2-3 lat?

5. What technologies does the greenhouse use? And what tools do you use in your daily work? Is most of the process automated in your greenhouse?
   a. How is your work measured? For example, I visited a greenhouse that showed employee productivity on a TV screen so that everyone could see how they were doing that day.
   b. Does the farmer share these measurements with you?
   c. Have you seen more new technologies (lights, treadmills, cameras) implemented in the last 2-3 years?

6. Proszę opowiedz o warunkach pracy. Na przykład wiem, że niektóre szklarnie osiągają latem 50 ° C.
   a. Czy pracujesz przez cały rok?
   b. Czy pracujesz bardzo powtarzalnymi ruchami (np. Umieszczając patyk w doniczce na storczyki)?
   c. Jak pracownicy i pracodawcy zajmują się obrażeniami lub wypadkami w miejscu pracy?

6. Please tell me about the working conditions. For example, I know that some greenhouses reach 50 ° C in summer.
   a. Do you work all year round?
   b. Do you work with very repetitive motions (e.g., placing a stick in an orchid pot)?
   c. How do employees and employers deal with workplace injuries or accidents?

7. Czy na stanowiskach kierowniczych są Polacy (lub osoby z Rumunii / Bułgarii / itp.)?
   a. Czy uważasz, że jesteś traktowany inaczej niż holenderscy pracownicy „rodzimi”?
   b. Czy uważasz, że jesteś traktowany inaczej ze względu na inne wskaźniki (np. Płeć, wiek itp.)?
   c. Jaka jest relacja między Polakami a innymi migrantami (np. Rumunami)?
   d. Czy ogłoszenia firmowe są wydawane w języku niderlandzkim, polskim, angielskim lub w innych językach?

7. Are there Poles (or persons from Romania / Bulgaria / etc.) in managerial positions?
   a. Do you think you are treated differently from Dutch 'native' employees?
   b. Do you think you are treated differently because of other indicators (e.g., gender, age, etc.)?
   c. What is the relationship between Poles and other migrants (e.g., Romanians)?
   d. Are company announcements published in Dutch, Polish, English or other languages?

8. Czy polscy pracownicy są częścią związku zawodowego, czy organizujesz się w inny sposób?
    a. Jak starasz się zapewnić wypłatę zgodnie z układem zbiorowym?
8. Are Polish employees part of a trade union or are you organizing yourself in a different way?
    a. How do you try to ensure payment in accordance with the collective agreement?

9. Czy planujesz pozostać w holenderskim rolnictwie na długo, czy szukasz nowych miejsc pracy (w Holandii lub w innych krajach)?
9. Do you plan to stay in Dutch agriculture for a long time or are you looking for new jobs (in the Netherlands or other countries)?

Jeśli myślisz ze zapomniałem o cos zapytać napisz proszę tutaj co ci jeszcze leży na sercu:

If you think you have forgotten to add something, please write here what else is important to you:

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