

Economic development under occupation:

A case study of the dairy sector in the Hebron governorate

M.A. Thesis

Heidrun Berkes

Specialization: Modern Middle East Studies

Thesis supervisor: Dr. Crystal Ennis

Leiden University

Academic Year: 2015-2016

Student number: S1475134

Email address: [magdalenaab@aol.com](mailto:magdalenab@aol.com)

Acronyms and abbreviations

IFAD – International Fund for Agricultural Development

oPt – Occupied Palestinian Territories

PCBS – Palestinian Central Bureau of Statistics

GOI – Government of Israel

PA – Palestinian Authority

MoA – Ministry of Agriculture

Abstract: This study is a case study of the dairy sector in the West Bank. It is based on qualitative field research and an extensive literature review. By asking how dairy farmers and dairy factory owners in the Hebron governorate perceive opportunities for and constraints to the expansion of their holdings, it analyses them in light of occupation policies and their implications for economic autonomy in the occupied Palestinian territories. On an empirical level, it concludes that intensive dairy cattle farms are better suited to land and water constraints than other forms of agriculture. On a theoretical level, it finds that Israeli neglect of bilateral agreements and 'casual constraints' preclude Palestinian economic autonomy, indicating the latter's interdependence with the achievement of national sovereignty.

Key words: dairy farming, West Bank, economic development, economic autonomy, occupation, Hebron governorate, agriculture

Contents

1. Introduction	4
Research question	6
Contributions to the field	7
Demographic information about the case study area	8
Structure	10
2. Theoretical Concepts and Methodology	11
2.1 Theoretical framework	11
2.2 Field research methodology	16
Procedure	16
Selection of participants	17
Data collection	18
3. Resource Constraints and Economic Autonomy	20
3.1 Access to land and occupation policies	20
Land scarcity, loans and livestock systems	20
Occupation policies and difficulties of farming in area C	22
Settlements	24
3.2 Feed and other imported inputs	25
3.3 Water politics	28
3.4 Occupation and economic autonomy	31
4. Micro-level perspectives: The dairy sector in Hebron	34
4.1 Sheep and goat farms	34
Composition of livelihoods and management of risks in farming	35
Dairy production and herd size	37
Marketing of dairy products	39
4.2 Dairy cow farms and factories	41
Milk production on cattle farms in Hebron	42
Marketing of dairy products	44
4.3 Politically-motivated trade asymmetries: challenges for sector expansion and economic development	46
5. Conclusion	49
Findings	49
Limitations	50
Recommendations	51
Bibliography	52
Annex 1	58

1. Introduction

In the early morning hours of 1 May 2012, two bulldozers destroyed the livelihoods of four Palestinian families when they demolished their dairy farm buildings, milking equipment and mobile home. The action which took place in Bani Naim (Hebron area) was supervised by Israeli military, police and intelligence representatives. The farmer, who owns 100 cows, now has to face difficult decisions about how to take care of the cattle without the necessary sheds and machinery.¹ This incidence, an occasional occurrence in the West Bank, has more far-reaching and serious connotations than one might initially think. It has a bearing on issues of property security, risk management and access to resources as well as implications for economic autonomy—factors that directly impact the everyday realities of farmers in this area.² The ways how farmers deal with such challenges in turn affect local economic development.

Considering Palestine's struggle for statehood, it has been suggested that a strong, more autonomous economy would, amongst other factors, support the process of state-building and achieving political sovereignty.³ However, any viable solution to the conflict must take into account the (relative) economic standing of the Palestinian territories and the legacy and impact of occupation.⁴ Currently, the West Bank still relies on the import of various products from the State of Israel and other countries.⁵ For Palestinians in the West Bank, becoming less dependent on those imports and on international aid programs would significantly reduce vulnerability caused by the impacts of global food prices on the domestic market and (inter-)

¹ Christian Peacemaker Team, "Palestine: Dairy Farm Demolished," *Signs of the Times* 22, no. 2, 30 June 2012, accessed May 24, 2015, <http://www.cpt.org/news/sott/articles/2012/palestine-dairy-farm-demolished>.

² Economic autonomy and economic sovereignty are used interchangeably in this thesis. They refer to the freedom to determine economic policies without external constraints being binding.

³ Marwan Naser, "Ahead for Developing Visions and Strategies of the Occupied Palestinian Territories (OPT)," BRISMES Annual conference (2012): 1, 22; Vincent El Hayek, "Palestinian Economic Development: Israeli Actions in Light of the 1994 Paris Protocol and International Economic Law," *Minnesota Journal of International Law* 24, no.2, (2015): 223; A. Arnon and J. Weinblatt, "Sovereignty and economic development: The case of Israel and Palestine," *The Economic Journal* 111, (2001): 301, 304.

⁴ Ariella Azoulay and Adi Ophir, "The One-State Condition: Occupation and Democracy in Israel/Palestine," (Stanford: Stanford University Press, 2013). Occupation: This term refers to the (occupied) Palestinian territories, consisting of the West Bank and the Gaza Strip. Since the Six-Day War of 1967, these areas are under military occupation by the State of Israel.

⁵ Adam Hanieh, "Class and State in the West Bank: Neoliberalism under occupation," In *Lineages of Revolt: Issues of Contemporary Capitalism in the Middle East*, (Chicago: Haymarket Books, 2013), 110; F. M. Naqib, "Economic Aspects of the Palestinian-Israeli Conflict: The collapse of the Oslo Accord," *Journal of International Development* 15 (2003): 506.

national political or diplomatic quarrels affecting flows of goods and money to Palestine.⁶ In this thesis, I investigate the opportunities for and constraints to the expansion of domestic food production in the West Bank, part of the Palestinian Territories, by focusing on the case of the dairy industry, that is, milk-producing farms and dairy factories in the Hebron governorate.

The research focus in this thesis is twofold, consisting of an interconnected empirical and theoretical analysis. Empirically, I investigate sector-specific socio-economic, political and institutional parameters that act as constraints or opportunities to the dairy industry's possibilities for horizontal and vertical expansion.⁷ The realization of expansion is influenced by a range of factors. Access to natural resources such as water and land belong to the most important elements.⁸ Next to a constant, reliable availability of such natural inputs, price levels may play an important role too.⁹ Furthermore, uncertainties with regard to labour and property security (property rights),¹⁰ management of risks,¹¹ the segmentation of the West Bank into different administrative areas of (military) control,¹² infrastructure, and arbitrary implementation of political agreements are significant factors that need to be taken into account when exploring opportunities and constraints faced by farmers and factory owners.¹³ By analysing these factors in the light of their significance to economic development, I aim to investigate the role of state-level economic autonomy under occupation. Together with a unique methodological approach, this represents the most important theoretical contribution of this thesis.

⁶Ken Albala, *Food cultures of the world encyclopaedia. Africa and the Middle East, Volume 1* (2011), 285; Hanieh, 110.

⁷Dr. Fawzi Asadi, "How Viable Will the Agricultural Economy Be in the New State of Palestine?" *Geo Journal* 21, no. 4 (1990): 375; Sharif S. Elmusa and Mahmud El-Jaafari, "Power and Trade: The Israeli-Palestinian Economic Protocol," *Journal of Palestine Studies* 24, no. 2 (1995): 26-27. Horizontal expansion refers to increases in farm/plant size and vertical expansion refers to increase of output through intensification.

⁸Maher O. Abu-Madi, "Farm-level perspectives regarding irrigation water prices in the Tulkarm district, Palestine," *Agricultural Water Management* 96 (2009): 1345; World Bank, "West Bank and Gaza: The Economic Effects of Restricted Access to Land in the West Bank," (Washington, DC: The World Bank Group, 2008): 16.

⁹Abu-Madi, 1345; Ian Coxhead, Gerald Shively and Xiaobing Shuai, "Development policies, resource constraints, and agricultural expansion on the Philippine land frontier," *Environment and Development Economics* 7 (2002): 342-346.

¹⁰World Bank (2008): 31.

¹¹World Bank, "World Development Report 2014: Risk and Opportunity: Managing Risk for Development," (2014): 53.

¹²World Bank (2008): 13.

¹³Stanley Fischer, Patricia Alonso-Gamo, Ulric Erickson von Allmen, "Economic developments in the West Bank and Gaza since Oslo," *The Economic Journal* 111 (2001): 271.

Research question

In accordance with the objectives of the study outlined above, I have formulated a twofold research question, consisting of an empirical and a theoretical part. Below, I define and explain its main components.

How do dairy farmers and dairy factory owners in the Hebron governorate perceive opportunities for and constraints to the expansion of their holdings and which implications do constraints have for economic autonomy in the occupied Palestinian territories?

Next to investigating this question on a conceptual level by means of a literature review, I have conducted a number of qualitative interviews with dairy farmers and dairy factory owners in the Hebron Governorate in the West Bank.¹⁴ This case study constitutes the main part of my thesis. It aims to ethnographically investigate the lived micro-economic realities of livestock farmers and dairy producers with a focus on their perceptions of the constraints and opportunities they face with regard to the expansion of their farms and factories.¹⁵ Dairy products are particularly relevant because they are a staple in the West Bank; especially yoghurt and related products are consumed with most meals. Demand for these goods is high, whereas domestic production of such staples is insufficient and supply highly depends on imports. Regarding the empirical level of my thesis, my interest thus lies in exploring the subjective possibilities for West Bank farmers to increase output by means of e.g. expanding their livestock count, applying modern farm technologies and increases in farm size. By way of addressing the second part of the research question, the case study analysis further serves as the empirical basis for more theoretical investigations looking at the role of economic sovereignty on the state-level.

The results of the case study are not meant to generalize from with regard to other businesses in the region or even the dairy sector in the whole West Bank. Rather, my research approach here may be seen as an idiographic one, representing an ethnographic study that aims to “understand the meaning of contingent, unique, and often subjective phenomena, [...]”

¹⁴ Opportunities refer to possibilities of dairy farmers and producers to expand or intensify their businesses as determined by socio-economic and political factors. This excludes biological factors such as the milk production per cow but includes, i.a., tangible and intangible assets (see 2.1). Constraints refer to the same factors as above in so far as they work against growth (expansion or intensification) of the livestock farms or dairy production facilities.

¹⁵ Alexander L. George and Andrew Bennett, *Case studies and theory development in the social sciences* (MIT Press, 2004).

emphasizing the unique elements of the individual phenomenon.”¹⁶ Further significant advantages of case studies are their ability to accommodate complex causal relations and to “heuristically identify new variables and hypotheses [...] in the course of field work.”¹⁷ An approach based on these elements is well suited for the investigation of my research questions due to the unique location, complex political-economic conditions and contrasting views held of the occupied Palestinian territories and because of the interdisciplinary approach of this thesis.

Contributions to the field

A review of relevant literature showed that there are very few academic works on opportunities for or limitations to economic development in the West Bank. Knowledge about those is crucial in order to advance scholarly understanding of economic development and economic autonomy under occupation. The latter two factors have largely been neglected in scholarly debates about the political-economic situation in the oPt. Several articles have analysed the economic situation after the Oslo Accords and the Paris Protocol, but these studies mainly looked at the potential for economic development in the West Bank from a macro-perspective, neglecting the micro-economic reality for individual actors in the private sectors.¹⁸ There is thus a need to investigate economic possibilities for actors in the various sectors under the given circumstances. For such an analysis to be fruitful, it has to take into account the asymmetrical relationship between the Israeli and Palestinian economies. The asymmetry mainly is constituted through the territories’ crippling import, finance and labour dependency on Israel and the latter’s dominance in trade matters and arbitrary implementation of economic agreements between the two parties.¹⁹ This asymmetry is likely to have significant repercussions for the oPt’s economic sovereignty. Consequently, insights derived from a thorough study of this factor are vital to inform policies (both Palestinian domestic and foreign (donor) policy towards the region), formulate action plans and act upon them in order to heighten economic stability and independency.²⁰

The approach I employ in this thesis is interdisciplinary: the theoretical framework combines concepts of Political Economy with aspects of Development Studies. By investigating

¹⁶ Marianne A. Larsen, “Beyond binaries: a way forward for comparative education,” *Revista Española de Educación Comparada* 6, (2012): 146.

¹⁷ George and Bennett, 20-22.

¹⁸ El Hayek; Arnon and Weinblatt; Adel Samara, “Globalization, the Palestinian Economy, and the ‘Peace Process,’” *Social Justice: a Journal of Crime, Conflict and World Order* 27, no. 4 (2000).

¹⁹ Gianni Vaggi and Sara Baroud, “Asymmetries and Economic Interaction between Israel and Palestine,” (2005): 3.

²⁰ Abdelnour (2010).

opportunities for development in the dairy sector from a political economy perspective combined with qualitative research among farmers in the West Bank, I provide a new perspective and insights that differ from the current theoretical paradigm. The prevailing humanitarian viewpoint focusing on violations of human rights in the oPt is valuable, but insufficient for comprehending the underlying forces at play and for generating knowledge about these forces' impacts on economic stability and sustainability.²¹ Political economy and sub-sector analysis is essential to understanding Israel's on-going colonization and dispossession of Palestinians.²² Additionally, the methodology used in this thesis is unique because its main component is a case study based on ethnographic field research investigating political-economic issues, an unusual combination that can provide fresh academic insights.

Demographic information about the case study area

The field research for the case study took place in the city of Hebron and the adjoining villages Sa'ir, Idna, Al Aroub and Bani Naem. They are situated in Hebron governorate, the most southern province of the West Bank, which is part of the Palestinian Territories. I have decided on this location for several reasons. This area has the highest concentration of dairy businesses (farms and production plants) in the West Bank. Furthermore the city of Hebron is, concerning the Israeli occupation, a particularly heavily affected Palestinian community due to the presence of an Israeli settlement in the old city centre. This means that Palestinians settlements and Israeli settlers are living in close proximity to each other. Further, there are 23 Israeli settlements with 15000 inhabitants in the governorate. Its built-up area and system of bypass roads built for the exclusive use of settlers cover 7.4 percent of the total district; land that is off-limits to Palestinians.²³ Also, the governorate contains many religious and historical sites that are very important to both Muslim and Jewish believers. These factors all contribute to making Hebron a very tense district with regular street riots between Palestinians, settlers and Israeli soldiers. The district is therefore well suited to study connections between the conduct of (dairy) business, farmers and the occupation.²⁴

There are 684,247 inhabitants in Hebron governorate.²⁵ The population of each of the villages where I carried out field research varied between 18000 and 22000.²⁶ The West Bank is

²¹ Hanieh, 99- 100.

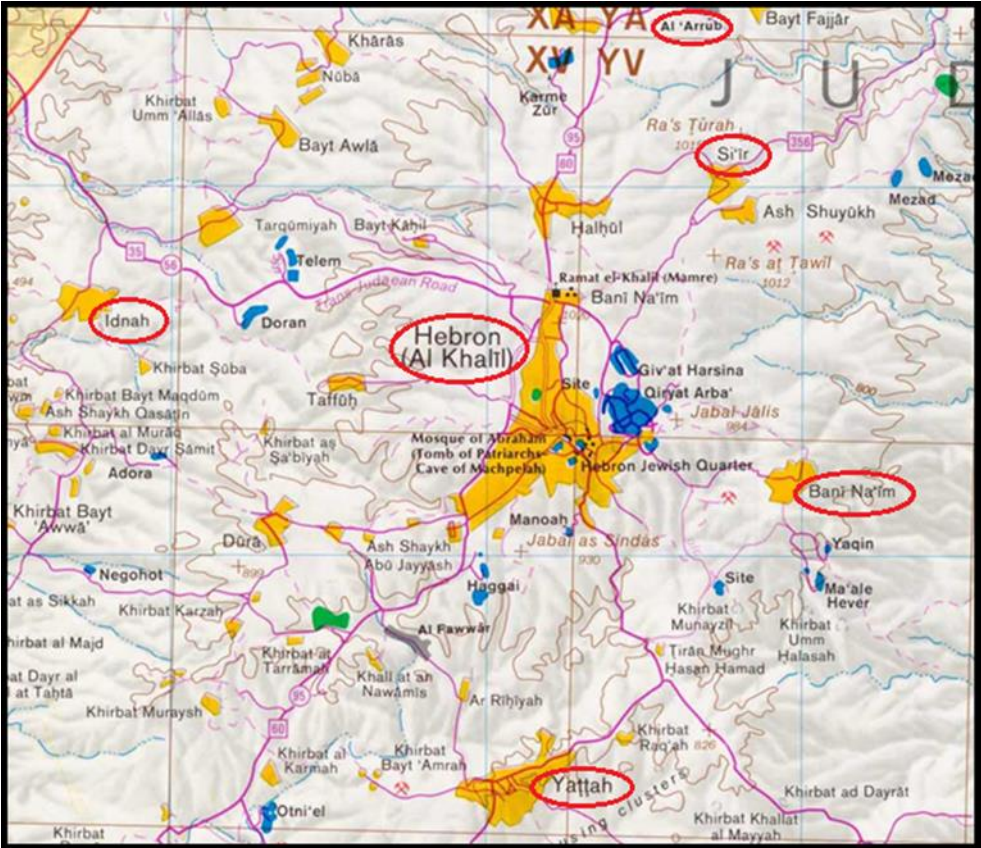
²² Ibid, 100.

²³ Land Research Centre, "Geopolitical situations In Hebron Governorate Palestine," Arab Studies Society (2006); Hanieh, 103.

²⁴ Land Research Centre.

²⁵ Palestinian Central Bureau of Statistics, "West Bank Southern Governorates Statistical Yearbook, 2013," (2014): 49.

subdivided in three zones, area A is under control of the Palestinian Authority, area B under shared control and area C is under the sole control of the Israeli government. The West Bank is landlocked and has borders with Israel and Jordan. About 43.3 percent of its area is used for agricultural purposes. The West Bank’s ethnic groups consist of 83 percent Palestinian Arabs and others and about 17 percent Jews. The predominant language is Arabic, but Hebrew is spoken by many as well. With regard to religion, the majority is Sunni Muslim.



Map 1.²⁷ Map of Hebron governorate. The interview locations are marked red.

²⁶ PCBS, “Hebron Governorate Statistical Yearbook,” (2011): 65.
²⁷ “West Bank Map,” Mappery, accessed online January 18, 2016, <http://www.mappery.com/map-of/West-Bank-Map>.

Structure

In the first part of chapter two, I explain the theoretical framework that underpins this paper, while the second part outlines the methodology used for the field work on which the case study is based. Chapter three looks at the most important issues constituting obstacles to growth for all stakeholders in the West Bank's dairy business: access to land in relation to occupation policies, the problematic nature of imported inputs and availability of water. The chapter further deals with the implications of these obstacles for economic autonomy. While chapter three considers the empirical results on a more theoretical level, chapter four looks at them with respect to policy implications, serving to describe and analyse the empirical findings with regard to marketing, farming practice and risk management as experienced by sheep and cattle farmers. Here, the focus lies on the limitations and opportunities encountered by dairy farmers and producers with regard to business expansion and intensification on a micro-level. The fifth chapter is a comprehensive conclusion summarizing my findings in regard to the research question and their political-economic relevance. Additionally, it points out limitations of this study and provides a few policy recommendations.

2. Theoretical Concepts and Methodology

In this chapter, I lay out the theoretical framework underpinning this paper and explain the research design for the case study.

2.1 Theoretical framework

The paper is founded on the premise that economic sovereignty is, if not a requirement, then a critical feature of a state's political sovereignty.²⁸ Despite its distinctive significance for this region, the occupied Palestinian territories have achieved neither political nor economic sovereignty.²⁹ Although the Oslo Accords resulted in the establishment of a functioning economic administration, the agreements never managed to achieve what they promised to.³⁰ These Accords (Oslo I and II) are a set of agreements between Israel and the Palestine Liberation Organization signed in 1993 and 1995, marking the beginning of the 'peace process.'³¹ The agreement created the Palestinian Authority, providing it with limited self-rule.³² In order to build a viable, strong Palestinian economy, efforts need to be directed towards the promotion and successful realization of economic development.³³

The years between the Oslo agreements and the year 2000, however, were marked by low economic growth. This was mainly caused by difficulties of movement within and between the oPt and Israel, frequent closures and excessive transportation and transaction costs.³⁴

In the academic literature, the potential for economic development in the West Bank has been analysed primarily from a macro-perspective, as demonstrated by various studies dealing with the Palestinian economic situation, trade possibilities and the economic relationship and interconnections between Israel and Palestine before and after the Oslo Accords.³⁵ Other scholars have delineated a legal trade framework for a future scenario in which Palestine

²⁸ Arnon and Weinblatt, 304, 306; Abdelnour (2010): 2-3; Arie Arnon, Avia Spivak, Oren Sussman, "Incomplete Contracts, the Port of Gaza and the Case for Economic Sovereignty," (2000): 1-3.

²⁹ Arnon et al.

³⁰ Fischer et al., 274.

³¹ See "Declaration of Principles, 13 Sep 1993" and "The Israeli-Palestinian interim agreement, 28 Sep 1995."

³² Naqib, 500.

³³ Asadi, 375; Raja J. Khalidi and Sahar Taghdisi-Rad, "The economic dimensions of prolonged occupation: continuity and change in Israeli policy towards the Palestinian economy," United Nations Conference on Trade and Development – UNCTAD (2009): 27.

³⁴ Fischer et al., 264-265.

³⁵ Naqib; Fischer et al.; Yusuf A. Sayigh, "The Palestinian Economy under Occupation: Dependency and Pauperization," *Journal of Palestine Studies* Vol. 15, No. 4 (1986); El Hayek; World Bank, "West Bank and Gaza: Area C and the future of the Palestinian economy," (2013): 7-10.

could become a sovereign state with sovereign control over all its assets and resources.³⁶ A review of recent literature shows that the majority has been published around the year 2000 and that very few publications investigate the effects of the Oslo agreements on the political economy of Palestine in the longer term, i.e. ten to twenty years later. Although older work (from before 2000) has certainly not become irrelevant, it does not take into account such long-term effects and economic developments.³⁷ In particular, these older studies have not considered how the Paris Protocol has impacted economic relations, possibilities and constraints, i.e., realities for the various economic sectors in the West Bank.

Part of the Gaza-Jericho Agreement, the *Protocol on Economic Relations* was incorporated into the Oslo II Accord and signed in 1994.³⁸ Its aim was to increase Palestinian economic prosperity.³⁹ The Protocol was meant to establish something similar to a customs union and to develop a framework for the economic relationship between Israel and the Palestinian Territories. In practice, however, stalling economic progress in the years that followed it meant that hopes were dashed quickly.⁴⁰ Many parts of the Protocol that seemed initially promising, like the free movement of goods, could never develop fully because of Israel's violations of the agreements by introducing a system of permits and border closures combined with extensive security checks and delays at border crossings.⁴¹ Hanafi argues that the protocol ignored the unequal status of the two sides; one controlling the borders and sea- and airports, the other a recently appointed national authority with little experience in trade matters. In effect, the protocol institutionalized the asymmetries between the Israeli and Palestinian economies.⁴²

While El Hayek has analysed the current economic situation with regard to the stipulations and violations of the protocol, he did not look at its effects on actors in the private sector on a micro-economic level. Although partially investigating the impact of economic and other agreements on the overall economy of the West Bank, an overview of recent and older research reveals an absence of topical analyses of the micro-economic reality of Palestinians

³⁶ Paul Rivlin, "Trade Potential in the Middle East: Some Optimistic Findings," *Middle East Review of International Affairs* 4, no. 1 (2000).

³⁷ Arnon and Weinblatt.

³⁸ David Cobham, "Economic aspects of the Israeli-Palestinian conflict: Introduction," *The Economic Journal* 110 (2001):250-251.

³⁹ Arnon and Weinblatt, 291.

⁴⁰ El Hayek, 223, 228.

⁴¹ El Hayek, 230-232.

⁴² Sari Hanafi, "Explaining spacio-cide in the Palestinian territory: Colonization, separation, and state of exception," *Current Sociology* 61, no.2 (2012): 196.

working in the various (sub-) sectors.⁴³ Conscious of this gap in academic work, the present study tries to draw attention to how economic development proceeds ‘on the ground’ and to how lived realities are influenced by (absent) economic sovereignty. This perspective is crucial to gain understanding of a new development approach that is tailored to the specific situation faced by Palestinian economic actors.

Much research about the oPt has been done from a humanitarian, i.e. rights-based perspective.⁴⁴ This focus clearly was, or still is, aligned with the aid regime that has evolved during the second half of the last century in the oPt and has come to dominate the Palestinian development agenda.⁴⁵ I argue that a fresh perspective is required. Any (new) approach to economic development, academic as well as policy-oriented, has to take into account two important issues. First, such an approach has to accommodate, i.e. adapt to the reality of the inherently asymmetrical political economic relationship between the economies of the oPt and Israel and the economic dependency of the Territories on Israel due to the latter’s power to impose sanctions or withhold tax revenue.⁴⁶ Theories that fail to discuss these asymmetries may lead to misinterpretation of the economic and social realities on the ground and short-lived alleviation of symptomatic problems. Both on a theoretical and policy level, instead the focus needs to be on a long-term, sustainable strategy for the Palestinian economy. Accommodating the current situation certainly does not imply accepting it, but it explicitly rejects defeatist beliefs that the oPt would be unable to reach any economic and developmental successes as long as the occupation continues. In my view, such beliefs only lead to passivity and numbness that make it even more difficult to improve the political and economic standing of Palestinians.

The second issue in working out a new policy-approach is the need of finding a way to increase local agency and reduce aid dependency, which has contributed to indirectly sustain the status quo of Palestinian de-development and Israeli occupation policies.⁴⁷ The necessity for a change in development perspective has also been recognized by donors and development agencies.⁴⁸ The OECD, for example, proposes a shift in focus on regional specific assets and

⁴³ Fischer; Naqib; El Hayek; Elmusa and El-Jaafari; Cobham.

⁴⁴ Hanieh, 99-101.

⁴⁵ Abdelnour (2010): 2.

⁴⁶ Vaggi and Baroud, 3; Fischer et al., 269; El Hayek, 235.

⁴⁷ Azoulay and Ophir, 1, 3 and Sara Roy, “De-development Revisited: Palestinian Economy and Society Since Oslo,” *Journal of Palestine Studies* 28, no. 3 (1999).

⁴⁸ Abdelnour (2010): 1.

further emphasises opportunity rather than disadvantage or the need for support.⁴⁹ With regard to the first issue, the Territories' systematic dependence comes most clearly to the fore in three areas: It is most significant in trade, because the oPt constitute a captive market for Israeli exports. Palestinian trade dependency becomes even more obvious considering that Israel accounts for 71 per cent of the oPt's imports, and receives 97 per cent of its exports.⁵⁰ Further, there is a labour dependency due to structurally distorted sectors in the Palestinian economy resulting in a loss of work opportunities.

Finance is also affected due to the oPt's dependence on aid flows and substantial remittances from family members living abroad, which constitute the resources for working capital and investment.⁵¹ The Palestinian economy represents a captive market for Israeli products because the competition that should have evolved between producers on both sides in a 'normal' integration process did not materialise.⁵² Moreover, the Israeli dominance over the oPt's economy is perpetuated because Israeli authorities control all sea- and airports. In addition, Israel has installed various non-tariff barriers, meaning that not only imports and exports, but also trade between Gaza and the West Bank involve high transportation and transaction costs.⁵³

Agriculture has traditionally been one of the most important sectors of the Palestinian economy, not only as an employment opportunity but also because it provides protection against income reductions and food insecurity during times of crisis.⁵⁴ Despite its relevance, research on farmers in Palestine is rather rare. In most studies, agriculture in the Palestinian Territories is broadly analysed as part of a larger focus on their economy.⁵⁵ Although the sector has large potential, current statistics show that its contribution to the Palestinian economy and its productivity have decreased in recent years, while the number of people employed in it has actually increased between 1995 and 2006.⁵⁶ Spurring economic development by strengthening the agricultural sector is not only of economic significance, but would also facilitate a decreasing dependence on the Israeli economy as well as on food

⁴⁹ OECD – Organization for Economic Co-operation and Development, "Regional Development," (2015), accessed 25 May 2015, <http://www.oecd.org/gov/regional-policy/regionaldevelopment.htm>.

⁵⁰ El Hayek, 230.

⁵¹ Sayigh, 47-50.

⁵² Arnon and Weinblatt, 293.

⁵³ El Hayek, 243.

⁵⁴ Samara, 119; TechnoServe Inc. and Oxfam, "A Roadmap for Agribusiness Development in the Occupied Palestinian Territories: An analysis of the Vegetables & Herbs, Dairy, and Sheep & Goats subsectors," UK Department for International Development (DFID), (2011): 8.

⁵⁵ Raja Khalidi, *The Arab Economy in Israel: The Dynamics of a Region's Development*, (London, Sydney, and New York: Croom Helm, 1988).

⁵⁶ World Bank (2013): 7-8.

imports and contribute to Palestinian food security.⁵⁷ Especially certain agricultural goods with a high economic value per unit, like fruits, vegetables, meat, eggs, milk products, and fish are significant here. The demand for such high-value food commodities is mainly driven by rising incomes, urbanization and changing preferences, the growth of which can be observed in many developing countries today.⁵⁸

As agricultural sub-sector generating high-value products, dairy production in the West Bank is a branch with vast potential.⁵⁹ Demand for dairy products in the West Bank is rising steadily, both due to rapid population growth and changing patterns in consumer preferences.⁶⁰ At the same time, the West Bank still is highly dependent on Israeli milk products.⁶¹ Research is thus needed in order to assess the opportunities for growth and map the constraints and difficulties faced by actors in this sub-sector. Naturally, one of the most important groups here are dairy farmers. The most relevant factors influencing (dairy) farmers' decisions about resource allocation with regard to farm expansion and intensification are access to resources, property rights, risk management, and informal and policy institutions.⁶² Chamber and Conway group some of these factors in tangible (resources and stores) and intangible assets (claims and access). Stores include savings and food stocks while resources refer to land, water, livestock and farm equipment. Claims are demands or appeals made in times of need for material, moral or practical support.⁶³ Access refers to the "opportunity in practice to use a resource, store or service or to obtain information, material, technology, employment, food or income."⁶⁴ The few studies that have been carried with this focus were conducted in other countries, for example in Ethiopia and Rwanda.⁶⁵ They indicate the relevance and significance of dairy farming for (economic) development.⁶⁶ In line with

⁵⁷ Asadi, 376; World Bank, "Sector Note April 2009: West Bank and Gaza - Assessment of Restrictions on Palestinian Water Sector Development," (2009): 25; Samara, 128.

⁵⁸ Ashok Gulati, Nicholas Minot, Chris Delgado, Saswati Bora, "Growth in high-value agriculture in Asia and the emergence of vertical links with farmers," (paper presented at the workshop "Linking Small-Scale Producers to Markets: Old and New Challenges," The World Bank, 15 December 2005), 1-2.

⁵⁹ C. Devendra, "Smallholder dairy production systems in developing countries: Characteristics, potential and opportunities for improvement, Review," *Asian-Australasian Journal of Animal Sciences* 14, no. 1 (2001): 104.

⁶⁰ Jon Pedersen, Sara Randall and Marwan Khawaja, "Growing Fast: The Palestinian Population in the West Bank and Gaza Strip," *Fafo-report* 353 (2001); Interview Nr.12; Devendra, 104.

⁶¹ Abdelnour et al. (2012): 2.

⁶² Elmusa and El-Jaafari, 26-27.

⁶³ Robert Chambers and Gordan R. Conway, "Sustainable rural livelihoods: Practical concepts for the 21st century," *IDS Discussion Paper* 296 (1991): 7.

⁶⁴ Ibid, 8.

⁶⁵ Mohamed A.M. Ahmed, Simeon Ehui and Yemesrach Assefa, "Dairy Development in Ethiopia," *EPTD Discussion Paper* No. 123 (2004).

⁶⁶ Abdelnour (2010): 3, DMS Development and Management solutions, "Updating the master plan of the milk chain in Rwanda," Ministry of agriculture and animal resources (2009): 7-9.

this framework, I have conducted a small field study of the dairy business in the Hebron governorate. This empirical research was crucial in order to gain the micro-level insights that are largely missing from the literature. Also, it revealed often overlooked subjective views held by individual economic actors in light of the occupation. The next section outlines the methodology used for the field research.

2.2 Field research methodology

This section outlines the way the fieldwork for this thesis was conducted. I explain the procedure, the selection of participants (sampling method), the research subject, the instrumentation, and the nature of the questions I asked the respondents. The interview guides, which differ per target group, can be found in Attachment 1. I have limited this case study to dairy farmers and other stakeholders related to the dairy industry in the Hebron governorate. This region is well-known for its dairy production in the West Bank. The governorate has one of the highest numbers of cattle, next to Nablus and Jenin governorates, the largest quantity of sheep and relatively high quantities of goats.⁶⁷ More specifically, at the end of 2013, there were 4077 cows, 150380 sheep and 34706 goats for milk production in the Hebron governorate.⁶⁸

Procedure

The field research has been carried out for the duration of four weeks and took place in the Hebron area. During every interview, I was accompanied by one of two (non-professional) translators, who are inhabitants of Hebron and English teachers at local secondary schools. They immediately translated the questions I posed towards the respondents in English into the local Arabic dialect. They then translated the respondent's answer back to me. The interviews mainly took place in the living rooms of respondents, in a fairly quiet atmosphere. A few interviews took place in managers' or engineers' offices, others on the farm terrain. The interviews took between one and two hours. Often, the interviewees were the heads of the respective households, i.e. the father and husband.⁶⁹ All of the farmers had large households with about ten members. The majority of respondents were between 40 and 60 years old.

⁶⁷ PCBS, "Livestock Survey 2013, Main Results," (2014): 21, 25, 27.

⁶⁸ Ibid: 81, 86, 91.

⁶⁹ PCBS, "Agricultural Census 2010, Final Results – Hebron Governorate," (2012): 40. In this paper, a "household is defined as one person or a group of persons with or without a family relationship, who live in the same housing unit or part of the housing unit, share meals and make joint provision of food and other essentials of living."

Selection of participants

The target population consisted of dairy farmers in the Hebron governorate. There were 2118 animal and 4669 mixed holdings in this governorate in 2013.⁷⁰ In 2010, there were 309 holdings who kept cattle, 4463 holdings who kept sheep and 2213 holdings who kept goats for milk production.⁷¹

The sampling procedure consisted of convenience sampling.⁷² Respondents were mainly selected through the snowball sampling method or chain-referral, a method that is commonly used in anthropology and social science research in order to locate, access and involve people in cases where the researcher expects difficulties in creating a representative sample of the research population.⁷³ Biernacki and Waldorf describe it as yielding a “sample through referrals made among people who share or know of others who possess some characteristics that are of research interest.”⁷⁴ I applied snowball sampling according to this definition, because for the interviews, selection of the respondents depended heavily on connections of the two translators with relatives, friends and acquaintances owning livestock and references of a municipality employee. Stakeholders other than farmers were contacted by telephone in order to fix an appointment with them. Snowball sampling is uniquely suited for research conducted in a conflict environment and marginalized societies.⁷⁵ The oPt can be considered such a setting due to its contested political status, human rights violations and military oppression.⁷⁶ In such an environment of uncertainty and risk, the knowledge that the researcher was referred by a trusted person increases the potential of successful cooperation and data collection.⁷⁷ Additionally, snowball sampling provides unique dynamic social knowledge.⁷⁸ Because of this method’s uncomplicated and flexible selection procedure, it was

⁷⁰ PCBS, “Livestock Survey,” 62, 33. Mixed holdings (farms) are economic units of agricultural production under single management keeping animals and controlling cultivated or arable land for any agricultural crops. Animal holdings solely keep animals.

⁷¹ PCBS (2012): 155.

⁷² Nissim Cohen and Tamar Arieli, “Field research in conflict environments: Methodological challenges and snowball sampling,” *Journal of Peace Research* 48, no. 4 (2011): 424-428.

⁷³ Patrick Biernacki and Dan Waldorf, “Snowball Sampling: Problems and Techniques of Chain Referral Sampling,” *Sociological Methods Research* 10 no. 2 (1981): 141; Cohen and Arieli, 426-427.

⁷⁴ Biernacki and Waldorf, 141.

⁷⁵ Cohen and Arieli, 424-428.

⁷⁶ George T. Abed, “The Political Economy of Resistance,” *Journal of Refugee Studies* 2, no. 1 (1989): 57, 63.

⁷⁷ Cohen and Arieli, 428.

⁷⁸ Chaim Noy, “Sampling Knowledge: The Hermeneutics of Snowball Sampling in Qualitative Research,” *International Journal of Social Research Methodology* 11, no.4 (2008): 328-329.

well suited to accommodate monetary and time constraints on the one hand while enabling me to acquire valuable information and insights on the other.⁷⁹

The research participants mainly were dairy farmers who have sheep and goats or cows for milk production and dairy factory managers. Additionally, I have interviewed a representative at the local office of the PA Ministry of Agriculture in Hebron, an engineer at the water department of the municipality of Hebron and an agricultural engineer working for the farm that is part of the technical college in Al Aroub. All participants were located in the city of Hebron or surrounding villages, all of which are situated in Hebron governorate. The farms I visited are located in Hebron city, Yatta, Bani Naem, Al Aroub, Idna and Sa'ir. With regard to farmers, the participants had to satisfy the following conditions in order to be interviewed: Own at least 15 sheep, goats or cows, hold them primarily for milk production, and sell the milk or products from it. In addition, they needed to be situated in Hebron governorate. The selection criteria for dairy factories were that they process milk professionally, i.e. by machines, and sell them to supermarkets in the West Bank. Finally, they needed to be located in Hebron. In order to obtain certain information first-hand, I additionally arranged interviews with two offices that are part of the Hebron municipality and the Ministry of Agriculture. The distribution of interviewees is shown in the following table.

Farmers with 15-29 sheep/goats	Farmers with 30-250 sheep/ goats	Farmers with 60-120 milking cows	Dairy factory managers	Officials
5	10	3	3	2

Table 1. Number of interviewees according to farm size and profession.

One of the cow farms belonged to a technical college. This farm is, as I have been told, used for study purposes but as well for profit. It is however somewhat different than the other farms, since it is funded by the Ministry of Education and the college cooperates with giz, a German NGO. In total, I have carried out 23 interviews.

Data collection

The interviews focused on the daily work experience of farmers and managers, including any difficulties they face and their perceptions and opinions about the farming sector. My interview with the representative of the Ministry of Agriculture focused on governmental support for farmers and their approach to dealing with livestock in the oPt. With regard to my

⁷⁹ Cohen and Arieli, 428.

interview with the municipality water department, the focus was on access to water for inhabitants of the town, prices, water networks and supply.

Semi-structured interviews were used to collect the data.⁸⁰ Before I started interviewing, I developed interview guides for each target group.⁸¹ It was necessary to design four different guides; for farmers, factory managers, the water department engineer and the ministry representative. The guides all consist of 20 to 30 open-ended questions based on the primary research questions. The questions to farmers covered, next to some personal information, the following topics: number of animals, milk and dairy production, willingness or ability to get a bank loan, inputs used in daily farm work, problems with obtaining these inputs, price satisfaction, ability and willingness to expand their farm by buying or renting additional land, animals or machinery, work experience and opinions about the farming sector. The questions for factory managers differed somewhat. I included various questions on their marketing strategies, product diversification, supply and demand of their products and inputs and access difficulties. In the following two chapters, I analyse the empirical findings of the fieldwork with regard to my research question and position them in context with relevant literature.

⁸⁰ H. Russel Bernard, "Interviewing I: Unstructured and Semi-Structured," in *Research Methods in Anthropology: Qualitative and Quantitative Approaches* (Alta Mira Press, 2011).

⁸¹ Alan Bryman, "Interviewing in qualitative research," in *Social Research methods* (Oxford University Press, 2012).

3. Resource constraints and economic autonomy

In this chapter I focus on common obstacles encountered by sheep, goat and dairy cattle farmers and dairy factories by analysing findings from the field study and placing them in context with relevant literature. These obstacles faced by farmers are particular to the occupation and are direct or indirect consequences of it. They concern land, property security, imported inputs and water. These resource constraints make daily life for participants of the dairy sub-sector not just more difficult, but also function as obstacles to its expansion and development.

3.1 Access to land and occupation policies

Land scarcity, loans and livestock systems

The interviews showed that the amount of land farmers possess differs significantly. Families own between one and twenty donums (1 donum=1000m²).⁸² Others had between 50 and 200 donums, but such amounts were distributed among several members of the extended family.⁸³ Some families also rent land in order to grow foods for home consumption.⁸⁴ According to official statistics, in 2010, 99 per cent of animal holdings were under 3 donums in size, with an average of 0.3 donums per holding, while mixed holdings had an average size of 24.1 donums.⁸⁵ This shows that generally, livestock keeping requires much less land than horticulture or arable farming and is thus more suitable with regard to the scarcity of land faced by Palestinians. Buying additional land is mostly a question of money, but few families have enough capital to acquire more donums. Often, the income from selling dairy is just enough to cover the household's expenses.⁸⁶ Nearly all farmers agree that land in the city outskirts is very expensive and that there is little available for buying. Plots in the countryside are cheaper, but livestock farmers, especially those who keep sheep as a hobby, prefer to have their animals near the house because it is safer and easier to look after them that way.⁸⁷

The location of land plays a significant role. Most importantly, land including any buildings or livestock on it may not be safe because it runs the risk of being confiscated or destroyed by the Israeli Defence Force. This is a risk usually associated with plots in area C. Land near

⁸² Interview Nr. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 14.

⁸³ Interview Nr. 6, 15, 16, 17.

⁸⁴ Interview Nr. 14, 19.

⁸⁵ PCBS (2012): Table 13.

⁸⁶ Interview Nr. 6.

⁸⁷ Interview Nr. 5.

settlements is not desirable at all because working on it is nearly impossible.⁸⁸ I deal with these issues in the next sections.

There are a few additional reasons why certain plots may not be suitable for livestock farming.⁸⁹ Neighbours can be a problem because they may get annoyed of having the sheep live between the houses.⁹⁰ Also sheep cannot be kept on plots with buildings or trees on it; because they will eat the rind.⁹¹ Because of population pressure, many plots of lands especially in area A are used for building, additionally causing prices of the remaining plots to rise.⁹² According to one farmer, lands suitable for keeping livestock are the most limited.⁹³ Various farmers reported that prices for land were much lower in the past.⁹⁴ Due to the scarcity of agricultural land, farmers who previously took out their sheep and goats for grazing now keep them in sheds and have to buy feed for them.⁹⁵

Related to such adaptations in farming practice is a study by Coxhead et al. about farming in the Philippines, which found that changes in relative prices can alter land use patterns.⁹⁶ This indicates the prospect for farmers to adapt their livelihood to the scarcity, and hence high prices, of land. Mixed farmers may learn that intensive livestock systems can be established on much less land than arable farms and therefore are more suited to the present land use restrictions in the oPt. In turn, given they have the necessary starting capital; farmers may be induced to allocate their land to livestock sheds instead of crops.

Examining the possibilities for horizontal expansion while facing high land prices, it turned out that apart from very few exceptions, most sheep and cow farmers did not want to try to get a loan from a bank, because they consider it haram (illegal) in Islam.⁹⁷ One interviewee however claimed that about 30 per cent of farmers would take loans from Islamic banks and organizations.⁹⁸ Although there are Islamic banks in Hebron, many people doubt their practices and find the (religious) conditions for being allowed to take a loan too vague to apply them in practice. Thus, if a family wants to make an expensive purchase like a plot of land or farm equipment, they need to have the necessary amount saved or lent from other

⁸⁸ Interview Nr. 5, 4.

⁸⁹ Ibid.

⁹⁰ Interview Nr. 5, 14, 19.

⁹¹ Interview Nr. 14.

⁹² Interview Nr. 14, 19.

⁹³ Interview Nr. 14.

⁹⁴ Interview Nr. 15.

⁹⁵ Interview Nr. 14.

⁹⁶ Coxhead et al., 342, 345-346.

⁹⁷ Interview Nr. 16, 19, 21, 22.

⁹⁸ Interview Nr. 22.

family members. It is possible that the hesitation to take loans is specific for the Hebron area, which is known for its piousness. Perceptions about loans may differ in other, less devout regions of the West Bank. Also it is possible that interviewees gave the socially-desired answer because of the presence of a translator who is a Hebron resident and Muslim. Few farmers said they would not even be able to get a loan, if they wanted to, because their income is too unreliable and they are no employees.⁹⁹

None of the sheep farmers seemed to have concrete plans to buy or rent more land, but two cow farmers expressed the aspiration to do so if they found suitable plots with sufficient supply of water, electricity and the possibility to get a (building) licence.¹⁰⁰ Success in livestock farming does not seem to depend on owning a large land area. Small plots of land (up to three donums) can also be used to build stables even for a larger number of cows, as done by some farmers in Yatta and Idna who operated intermediate size intensive systems with about 50 heads of cattle. These farmers had just one or two donums, but, in contrast to the sheep farmers, made full use of it.¹⁰¹ Intensive farming systems however require more (or different) knowledge with regard to hygiene, animal welfare and the prevention of health hazards.¹⁰²

Occupation policies and difficulties of farming in area C

Since the Oslo Accords, land in the West Bank is split into three administrative divisions. In area A, land disposition is fully controlled by Palestinians authorities. Area B is under shared control with the PA, but Israelis still full control land registration procedures. In area C, Israel has full authority over zoning, building and land registration.¹⁰³ Such segmentation in the form of land use restrictions minimizes sectoral complementarity and intensive interaction, making the establishment of (vertically coordinated) agro-industries more difficult.¹⁰⁴

Similarly, spatial separation fosters “economic disintegration because movement between the zones is strictly regulated by the political, bureaucratic and military apparatus constituted by the occupation.”¹⁰⁵

A study by the World Bank found that workers in agriculture on the one hand experience difficulties of finding alternative economic activities. On the other hand, various restrictions

⁹⁹ Interview Nr. 6.

¹⁰⁰ Interview Nr. 21, 19.

¹⁰¹ Interview Nr. 19, 21, 22.

¹⁰² Devendra, 107-108.

¹⁰³ Naqib, 509.

¹⁰⁴ Sayigh, 54.

¹⁰⁵ Hanieh, 100, 106.

act as limitations to the intensification of agriculture. These restrictions mainly apply to area C, in which most of the West Bank's fertile agricultural land is located. However, Palestinian access to this land is either prohibited or severely restricted.¹⁰⁶ Usually, farmers in areas A and B, which are under Palestinian, respectively, shared control, do not encounter direct problems related to for example raids, violent attacks or demolition of farm houses and equipment.¹⁰⁷ This land is considered safe.¹⁰⁸ Farmers in area C however do have to expect such actions, as a number of them have received (threats of) demolition orders or cautions that they should abandon their houses.¹⁰⁹ A cattle farmer in Yatta whose farm is located in Area C, is regularly visited by Israeli soldiers, but so far, he did not have any negative experiences with them.¹¹⁰ Another respondent, whose previous farm was located in area C, was less lucky. He said that soldiers took his machines and some farming equipment and kept harassing him until he moved to another place.¹¹¹ Land and property insecurity are thus one of the major risks associated with farming that are particular to the Israeli occupation.

Buildings in area C, including the necessary (transportation) infrastructure, require permits approved by the Israeli authorities which are difficult to obtain. According to El Hayek, building permits are often rejected by the Israeli authorities due to lack of land registrations.¹¹² However, anything that is built without official permission runs the risk of being demolished.¹¹³ Therefore, although this area is empty, i.e. largely uninhabited and not used for agricultural purposes, Palestinians are not keen on using this land. In the outskirts of Sa'ir, several farmers had received demolition threats or cautions to leave their houses.¹¹⁴ Hamza, a farmer in Yatta, had to rebuild his farm after it was demolished by Israeli soldiers. At the time, the location was situated in Area C. After a few years however, control of the area was handed over to the municipality of Yatta, from which Hamza bought some plots and rebuilt his farm.¹¹⁵ Another farmer's herd severely decreased in size because his old house was demolished and he had to sell nearly half of his livestock in order to buy a new house in another location.¹¹⁶

¹⁰⁶ World Bank (2013): 9.

¹⁰⁷ Interview Nr. 5, 9.

¹⁰⁸ Interview Nr. 3.

¹⁰⁹ Interview Nr. 6.

¹¹⁰ Interview Nr. 21.

¹¹¹ Interview Nr. 19.

¹¹² Ibid; El Hayek, 237-238.

¹¹³ Interview Nr. 6.

¹¹⁴ Interview Nr. 6, 8.

¹¹⁵ Interview Nr. 22.

¹¹⁶ Interview Nr. 6.

The described experiences by farmers demonstrate the different forms of power applied through Israeli occupation policies. Spatial segmentation (sovereign-territorial) and management of the population (bio-power) through bureaucratic and military means together function to disintegrate and disable the Palestinian economy. These bio-territorial forms of power should not be treated as distinct from each other; rather, they perpetuate and reinforce each other, making them an even more effective means to efficiently manage the occupation.¹¹⁷

Settlements

Several sheep farmers have plots of land near settlements, which they often cannot use because of violent attacks by settlers.¹¹⁸ Regularly, settlers burn olive trees, kill sheep grazing on these plots or directly attack Palestinians who try to plant or harvest something there.¹¹⁹ Some farmers reported incidents with settlers in Susya and Yatta, where settlers drowned several sheep.¹²⁰ Additionally, farmers said that they are prevented from building stables on these plots, streets that lead towards them and wells for the collection of rainwater.¹²¹ Some reported that showing their ownership documents is futile in these cases.¹²² One sheep farmer has tried complaining about these problems at Israeli courts, but their cases would be postponed repeatedly until they would give up. Finally, he sold most of his sheep because of settlers harassing him.¹²³ One family reported that 15 years ago, before their olive trees had been cut down by settlers, Israeli and Palestinian authorities had arranged coordinated protection with soldiers for farmers during olive harvest, which takes place at the same time in the whole West Bank.¹²⁴ They did, however, not know if such coordination does still take place.

The PCBS provides figures for holdings that were constrained by Israeli measures in Hebron governorate in 2010. The constraints include the West Bank barrier, Israeli settlements, military barriers and closed Israeli military areas. The figures show that animal holdings have the smallest amount of land compared to mixed and plant holdings and therefore face the least

¹¹⁷ Samer Alatout, "Towards a bio-territorial conception of power: Territory, population, and environmental narratives in Palestine and Israel," *Political Geography* 25 (2006): 604.

¹¹⁸ Interview Nr. 1, 4, 7, 16.

¹¹⁹ Interview Nr. 4, 7.

¹²⁰ Interview Nr. 1, 2.

¹²¹ Interview Nr. 1, 4, 15.

¹²² Interview Nr. 1.

¹²³ Interview Nr. 4.

¹²⁴ Interview Nr. 17.

amount of the above constraints.¹²⁵ Farm size is thus negatively correlated to constraints by Israeli measures. In light of the high value of dairy products (as well as meat), this yet again indicates that livestock farming is better suited to the current land use restrictions in the oPt than arable farming.

In many cases plots of land, including those near settlements, have been inherited from one generation to the next. The owners cannot sell them because no Palestinian is interested in buying them but they also do not have the capital to buy more land nearby their houses; in safe areas. Acquiring land is difficult because Palestinian towns and villages are constantly expanding, making free plots of land in safe areas rare and very expensive. Because of the problems with using land near settlements, people generally prefer to put their animals near their houses.¹²⁶

Abstracting from the concept and meaning of ‘genocide,’ Hanafi argues that the dispossessions and confiscations of land, the continuing expansion of Israeli settlements and segmentation of land in three areas are all part of a larger project which he calls ‘spacio-cide.’ This colonial project “targets land for the purpose of rendering inevitable the ‘voluntary’ transfer of the Palestinian population primarily by targeting the space upon which the Palestinian people live.” What once was considered ‘territory’ is, according to Hanafi, transformed into mere land. Indeed, travelling through the West Bank, one encounters wide, but desolate areas that are indeed ‘no-peoples’ land.¹²⁷ The notion is supported by Hanieh, who describes conscious Israeli efforts to empty and then colonize land.¹²⁸ Thereby a ‘dehistoricization of place and space’ takes place where ‘facts on the ground are cast as normality.’¹²⁹ This and the loss of resources create a struggle for Palestinians that forces them to choose between making a living and fighting for their history.

3.2 Feed and other imported inputs

Another risk associated with farming has to do with prices and availability of feed and other inputs. Sheep and goats farmers usually feed wheat and straw to their livestock. These farmers keep their animals in sheds near or below the house. The shortage of grazing land means that

¹²⁵ PCBS (2012): Table 113.

¹²⁶ Interview Nr. 4, 3, 1.

¹²⁷ Hanafi, 191-192.

¹²⁸ Hanieh, 102.

¹²⁹ Hanieh, 102.

farmers mainly depend on bought feed supplies. Some, however, lead them out on their lands for three or four months in spring, when there is green grass or wheat.¹³⁰

Cow farmers are usually obliged to feed what is called *blih* to their cattle, a total mixed ration (TMR) that contains all the nutrients and minerals dairy cows need.¹³¹ Blih is produced in professional feeding centres in Israel and is based on grains grown there or abroad.¹³² A trader in Hebron confirmed this. Feeding blih to cows is made obligatory for farmers by factory owners because it causes the milk to have certain desired characteristics (like a high fat percentage and quality) that is necessary for processing it.¹³³ Straw, wheat and blih are thus all imported from Israel, who in turn partly imports it from other countries such as the USA and Ukraine.¹³⁴ The feed is generally available on the market, but particularly in the opinion of sheep farmers, it is very expensive.¹³⁵

The price of wheat, which is connected to world market prices, has risen significantly in recent years and appears to be driving sheep and goat farmers out of business.¹³⁶ The price of wheat fluctuates; one ton costs between 1200 and 2000 Shekel. A farmer in Sa'ir has to pay extra because he pays the feed trader only after he has sold some of the lambs.¹³⁷ Dependence on the use of imported feed makes smallholder farmers particularly vulnerable to e.g. economic crises. This dependence would be reduced by increased use of indigenous materials and domestically grown feed.¹³⁸

Wheat however appears to be planted in rather small quantities in Palestine. Some of the farmers were planting wheat on small plots, but they still had to buy about 80 per cent of the required feed in addition.¹³⁹ Alternative feeds like green beans and lentils are grown rarely.¹⁴⁰ According to farmers, importing wheat from Israel is cheaper, but many small-scale farmers also said they sold more and more of their once large herds because of the rising feed

¹³⁰ Interview Nr. 6, 16, 17.

¹³¹ Interview Nr. 12, 19, 21, 22.

¹³² Interview Nr. 14.

¹³³ D.M. Barbano, Y. Ma, M.V. Santos, "Influence of Raw Milk Quality on Fluid Milk Shelf Life," *Journal of Dairy Science* 89, Electronic Supplement (2006): 15–19; D.L. Palmquist, A. Denise Beaulieu, D.M. Barbano, "Feed and Animal Factors Influencing Milk Fat Composition," *Journal of Dairy Science* 76, no.6 (1993): 1753–1771; Interview Nr. 21.

¹³⁴ Interview Nr. 19, 14; Gilad Shachar and Orestes Vasquez, "Israel Grain and feed Annual," USDA Foreign Agricultural Service (2015): 2-3.

¹³⁵ Interview Nr. 1, 3, 5.

¹³⁶ Interview Nr. 5, 19, 21.

¹³⁷ Interview Nr. 8, 14, 15, 17, 6.

¹³⁸ Devendra, 109.

¹³⁹ Interview Nr. 8, 9, 11, 14, 17.

¹⁴⁰ Interview Nr. 14.

prices.¹⁴¹ Planting wheat domestically is generally considered too expensive and difficult because cultivation depends on rain, since the supply of water via networks is unreliable and weak.¹⁴² Harvesting wheat is possible just once per year, and often the yields are bad.¹⁴³

In 2001, 0.4 per cent of the wheat planted in the oPt was irrigated, while 99.6 per cent were rain fed. With a yield of about 300 kg per donum, the irrigated area resulted in more than twice as much harvest than the rain fed one.¹⁴⁴ With regard to domestic growth of feed, various import restrictions related to occupation policies make the import of required inputs like for example chemical fertilizer, potassium and some pesticides very difficult. Allegedly, they could be used for building bombs. But their limited availability makes agriculture rather difficult and expensive.¹⁴⁵ Additionally, there are no specialized feeding centres in the oPt that could process and mix the grains as required for dairy farming.

Cow farmers who have to import blih sometimes experience problems with regard to timely transportation of the feed which is a daily product that easily spoils.¹⁴⁶ It keeps well only for about 24 hours. Waiting times at checkpoints, curfews, border closures and transportation fees add to the cost of this high-quality feed.¹⁴⁷ A cattle farmer in Idna pays 2000 Shekel for transport and 1260 Shekel per ton of feed. He said the price is non-negotiable and he has to pay on time, regardless if he would be able to sell all his milk.¹⁴⁸ Most cow farmers have either contracts with feed factories in Israel or they buy it from traders. This feed product's price also varies, and has been increasing in recent years.¹⁴⁹ A farmer in Yatta chose to feed his cows what he described as a dry version of blih, which is less expensive (1700 shekel per ton) but also results in three to four litres less milk yield per cow.¹⁵⁰

The feed farmers usually give to their livestock is mostly imported from Israel, which is problematic for two reasons. First, the reliance on imported feed supplies reaffirms the asymmetric dependency of Palestinian economic sectors (here: agriculture) on the larger Israeli economy. Secondly, in recent years price levels for various sorts of feed have risen significantly. The prices are impacted by several factors. Droughts causing contractions in

¹⁴¹ Interview Nr. 7, 8.

¹⁴² Interview Nr. 2, 14,15.

¹⁴³ Interview Nr. 6, 7, 15.

¹⁴⁴ PCBS, "Agricultural Statistics, 2000/2001," (2002): Table 42.

¹⁴⁵ Interview Nr. 2.

¹⁴⁶ Interview Nr. 19.

¹⁴⁷ *Ibid.*

¹⁴⁸ *Ibid.*

¹⁴⁹ Interview Nr. 19, 21, 22.

¹⁵⁰ Interview Nr. 22.

international grain supplies, expanding world economies as well as increased food demand in developing countries and depreciation of the U.S. dollar have impacted the prices of feed grain. Additionally, the expanding production of bioethanol has significantly contributed to the price increases of corn and soybeans.¹⁵¹

The field research results demonstrate that one of the most important factors for the production of milk is animal feed, prices and availability. Dairy farmers who would like to expand their herds in order to become large-scale producers also have to invest in improved feeding systems, which are costly.¹⁵² In addition, the substantial restrictions on the use of irrigation water harm Palestinian agriculture, thereby preventing the viable expansion and diversification of crops and successful growth of feed.¹⁵³

Next to feed, there are several other goods and ingredients that need to be imported from other countries. Usually all of them have to pass through Israel first. According to an agricultural engineer, production costs in Palestine are very high because of this.¹⁵⁴ Furthermore, factories need to import micro ingredients, like the starter, stabilizers, proteins and minerals which mainly come from European suppliers like Germany, France, Denmark and Italy.¹⁵⁵ These products are either imported through Israel or bought from Jordanian traders. As with the feed, such imports also can result in waiting times for products to be cleared at borders and checkpoints. This means that factory managers need to plan and order their required inputs well in advance.¹⁵⁶

3.3 Water politics

Water is one of the most important resources needed in farming, but in the oPt it also is a politically contested natural resource.¹⁵⁷ Farmers' perceptions about the accessibility of water for their land and households differed mainly due to location. Small-scale farmers in the outskirts of Sa'ir said they would not pay for water, because their village council gave it to them for free which is possible because there is a spring nearby owned by the council.¹⁵⁸ In village centres and cities, water is delivered by networks managed by municipalities. For farms, the main sources of water are shown in *table 2*. Farms that exclusively keep livestock

¹⁵¹ Andrew Muhammad and Ellene Kebede, "The Emergence of an Agro-Energy Sector: Is Agriculture Importing Instability from the Oil Sector?," *Choices* 24, no. 1, Agricultural & Applied Economics Association (2009).

¹⁵² Devendra, 107-109.

¹⁵³ Naqib, 509.

¹⁵⁴ Interview Nr. 2.

¹⁵⁵ Interview Nr. 12, 13, 18.

¹⁵⁶ Interview Nr. 13.

¹⁵⁷ Alatout, 611.

¹⁵⁸ Interview Nr. 5, 7, 8, 10.

use less water because there is no need for irrigation.¹⁵⁹ Nevertheless, all respondents reported problems with the available water quantities and prices. Generally, cost is less of a problem for them than obtaining sufficient quantities of water for their farms.¹⁶⁰

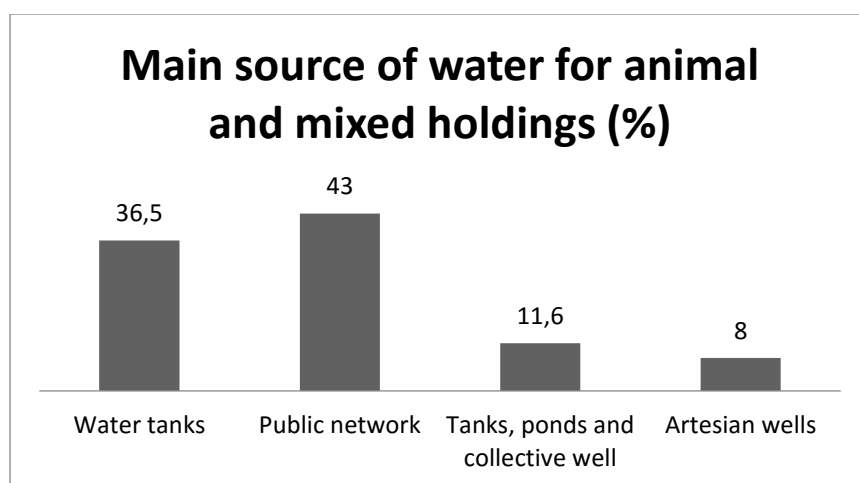


Table 2.¹⁶¹

In Bani Naem, water from the municipality costs 6 NIS per cubic metre, according to a sheep farmer. In Hebron, it costs 5 NIS. Network water appears to be fairly inexpensive and farmers do not consider it a problem, but the price is still higher than what farmers pay in Israel.¹⁶² Getting sufficient water is especially a problem for those farms that are located on hills, because the already weak pressure of the water flowing through the pipes causes it to arrive on hilltops in rather low quantities.¹⁶³ In such locations, they have water only two days per week or sometimes even just once in a fortnight.¹⁶⁴ Also, farms located further outside towns, out of the reach of municipality networks, have difficulties in ensuring a constant supply of water because they depend on truck deliveries.¹⁶⁵ These are much more expensive; also because of the transport costs involved. Farmers cope with the weak water supply by saving water in cisterns in the ground or in tanks.¹⁶⁶ Because the water supply from municipalities is unreliable especially in summer, many farmers additionally buy tanks of water which often are of poor quality.¹⁶⁷ They cost about 40 Shekel per cubic metre and 150 Shekel per tank.¹⁶⁸

¹⁵⁹ Interview Nr. 15.

¹⁶⁰ Interview Nr. 11.

¹⁶¹ PCBS, "Livestock Survey, 2013," Table 12.

¹⁶² Interview Nr. 11.

¹⁶³ Interview Nr. 3, 8.

¹⁶⁴ Interview Nr. 3, 4, 14.

¹⁶⁵ Interview Nr. 6, 8; World Bank (2009): 16.

¹⁶⁶ Interview Nr. 1, 3, 4, 8, 10; World Bank (2009): 18.

¹⁶⁷ Interview Nr. 5, 14, 15, 16, 19.

¹⁶⁸ Interview Nr. 15, 22.

The networks' limited reach is, however, not the only problem. Farmers stated that digging wells that are deeper than about 15 metres and reach groundwater is not allowed due to Israeli military orders, not even on farmers' own land.¹⁶⁹ Doing so is considered dangerous because Palestinians are forbidden from developing any springs, surface or underground water reserves which were not already tapped and in use at the time of occupation in 1967.¹⁷⁰

Most of the West Bank's aquifer and spring water is located in Area C, where applications for new wells and agricultural water projects have to be approved by the Israeli Civil Administration and the Joint Water Committee.¹⁷¹ The JWC is tasked with the implementation of article 40 of the 1995 Oslo II interim agreement, which recognized Palestinian water rights in the West Bank and delineated their current and future needs for a five year interim period.¹⁷² Due to asymmetries of power, capacity, information and interest, the JWC does not function as a 'joint' water resource management institution.¹⁷³ Projects regularly result in long delays and rejections. Since its establishment, and especially in the years after the second Intifada, the number of approved projects has been low and even less were implemented, which severely constrains agricultural production in the area.¹⁷⁴ Thus, this 'water sharing arrangement' "only helps strengthen present, unjust and inequitable territorial arrangements."¹⁷⁵ Godlewski even argues that the GoI uses the JWC "to open up a dialogue with the PA," thereby creating a "sense of legitimacy [...] whereby the Israelis use the JWC to their advantage without granting any real concessions to the Palestinians."¹⁷⁶

Restrictions on local water supply and the lack of wells and natural sources of water have caused inhabitants of area C to depend increasingly on purchasing water from Israeli companies like Mekorot.¹⁷⁷ This is also the cause of water being more expensive in the Hebron area than in some other municipalities of the West Bank which do have a spring at their disposal. Costs and shortage of water in the Hebron area make dairy production more expensive, thereby limiting the capability of Palestinian milk producers to expand.¹⁷⁸

¹⁶⁹ Hanieh, 104;

¹⁷⁰ Elmusa and El-Jaafari, 27; Interview Nr. 6, 15; Sayigh, 57.

¹⁷¹ World Bank (2009): VII.

¹⁷² Alatout, 616-617, World Bank (2009): IV, 8, 47.

¹⁷³ World Bank (2009): 48, 51.

¹⁷⁴ Ibid, 48-50.

¹⁷⁵ Alatout, 614.

¹⁷⁶ Andrew C. Godlewski, "“Damming” the Peace Process: Water Politics and its Impact on the Israeli–Palestinian Conflict," *Journal of Muslim Minority Affairs* 30, no.2 (2010): 159.

¹⁷⁷ World Bank (2013): 9.

¹⁷⁸ Interview Nr. 2.

Additionally, farmers' dependence on Israeli water companies makes them vulnerable to arbitrary politically-motivated supply shortages.¹⁷⁹

The underlying reasons for limited water availability are mainly political in nature. Water scarcity in the oPt may be considered a natural condition of arid and semi-arid regions.¹⁸⁰

Whether or not this is true, Israeli policies towards the oPt have built on this assumption and 'successfully' politicized it. The politics surrounding water can be considered another form of Bio-territorial power.¹⁸¹ Despite contracts between Hebron municipality and Mekorot, water supplies to the Hebron area especially in summer are regularly reduced, with natural water shortage stated as a reason.¹⁸² This 'reason' can be considered implausible in light of settlements' high water consumption not only for domestic use and ample irrigation, but also for swimming pools.¹⁸³ Water scarcity is thus a politically constructed problem and is more entrenched in unequal distribution of water than the alleged dearth of geological resources in the West Bank.¹⁸⁴ This is demonstrated by the substantial amount of groundwater sources in the West Bank developed by Mekorot, who subsequently sell this water to Palestinians.¹⁸⁵ Occupation policies are thus not 'only' about taking control of vital resources, thereby setting a limit to Palestinian development, but also about profit generation for large Israeli companies.

3.4 Occupation and economic autonomy

The preceding sections discussing arbitrary military and bureaucratic regulations, violent attacks on Palestinian property, import dependencies and dispossession of and denied access to crucial resources demonstrated in different ways the lack of Palestinian autonomy in decisions and policies directly affecting domestic economic development.

As my analysis showed, this autonomy would include the ability to enforce the gradual expansion of ground water sources for Palestinian use in the West Bank as laid down in the interim agreement.¹⁸⁶ Also, it concerns the liberty to introduce protectionist measures in order to support the growth of Palestinian (infant) industries by shielding them from heavy

¹⁷⁹ World Bank (2009): VIII.

¹⁸⁰ Alarout, 613.

¹⁸¹ Ibid, 618.

¹⁸² Interview Nr. 23.

¹⁸³ Harald D. Fredericksen, "Water: Israeli strategy, implications for peace and the viability of Palestine," Macro Center Working Papers, Paper 9 (2004): 73, 77.

¹⁸⁴ Ibid, 90.

¹⁸⁵ Ibid, 73; World Bank (2009): IV, 5.

¹⁸⁶ World Bank (2009): IV, VII.

competition and the liberty of Palestinian business to choose their own import partners and import whatever goods are needed for domestic economic development to gradually lessen dependence on Israel.

Under different circumstances, an increase in economic authority might not necessarily require national sovereignty. Under external pressure however, the PA adopted a course that seems to foreclose both. In recent years, the PA embraced a neoliberal vision that was codified in the Palestine Reform and Development Program (PRDP, 2008-2010). Heavily influenced by the World Bank, international financial institutions (IFI), donors and foreign governments including Israel, the program was intended to spur economic reforms to reach a free market economy open to regional and global markets.¹⁸⁷ The close entwining of financial institutions with those of the PA resulted in IFI to “fully oversee Palestinian economic development and policy making.”¹⁸⁸ Additionally, “the distribution of donor funding to the PA was made contingent on the implementation of the PRDP.”¹⁸⁹ This way, the PA’s remaining policy space was reduced even more.

It is very doubtful that neoliberal premises are in any way suited to the particularities of a state under military occupation that lacks economic authority, has no clearly defined economic borders, no control over entry points, sea- and airports and whose monetary system is tied to decisions of the Israeli central bank.¹⁹⁰ With the introduction of the PRDP, it will be even more difficult for Palestinian business to develop competitiveness against bigger players since protectionist measures are out of the question. Instead, the program is likely to perpetuate and exacerbate existing political-economic asymmetries and reduce Palestinian economic autonomy even further. This is in line with the Oslo Accords, which divided the West Bank in three areas, confining 90 per cent of the population who lived in areas B and C to a patchwork of isolated enclaves.¹⁹¹ The Paris Protocol formalized Israeli control over all external borders, hereby curtailing Palestinians’ ability to develop sustainable trade relations with third countries. Additionally, Israel has the final say over what the oPt are allowed to import and export.¹⁹²

¹⁸⁷ Hanieh, 101, 113, 115-116; Raja Khalidi and Sobhi Samour, “Neoliberalism as liberation: the statehood program and the remaking of the Palestinian national movement,” *Journal of Palestine Studies* Vol. XL, no. 2 (2011): 12.

¹⁸⁸ Hanieh, 117.

¹⁸⁹ *Ibid.*

¹⁹⁰ Khalidi and Samour, 9, 12, 17.

¹⁹¹ Hanieh, 107-108.

¹⁹² *Ibid.*, 110.

It appears that with every ‘agreement’ or ‘reform program,’ the PA traded away more autonomy in exchange for the ‘economic peace’ advocated by Israel.¹⁹³ This is not to say that Palestinian leadership ever possessed such self-rule, but only with Oslo and the PRDP, they officially acquiesced to the system of occupation.¹⁹⁴ While the leadership’s weakness is surely tied to the dependency position of the oPt, the lack of economic autonomy in turn reproduces dependence on external capital and Israeli goodwill to e.g. transfer tax payments. This creates a vicious circle whose current outcome seems to be the normalization of occupation structures and acceptance of current conditions as permanent.¹⁹⁵ Hanieh argues that neoliberalism reinforces the physical fragmentation of Palestinians by turning them away from collective struggle towards individualized consumption and a preference for stability facilitated by (debt-based) finance. In the meantime, dispossession and expulsion of Palestinians from their land slowly continue.¹⁹⁶ The question is what this means for the aspirations and willingness of the Palestinian leadership to keep pressing for a solution to the conflict that involves the establishment of a sovereign Palestinian state.

¹⁹³ Khalidi and Samour, 7, 11, 16.

¹⁹⁴ Ibid, 15, 16.

¹⁹⁵ Hanieh, 101, 110, 117.

¹⁹⁶ Ibid, 120, 121.

4. Micro-level perspectives: The dairy sector in Hebron

In this chapter, I describe and analyse the field research findings of the case study with regard to differences in production and marketing as they relate to the dairy farmers. The interviews led me to distinguish roughly between two groups in the milk farming and dairy industry with regard to the area of Hebron and surrounding villages. The first group includes sheep and goat farmers or small-holders. The second group consists of dairy factories and dairy cow farmers with intensive farming systems. Their available resources, objectives, customers or target groups, ways of processing milk, marketing strategies, profit, demand for their products and ways of dealing with risk vary considerably. I describe and interpret these differing findings in relation to the first group in section 4.1 and with regard to the second group in section 4.2. Section 4.3 discusses the findings in light of politically-motivated trade asymmetries and the challenges they pose for sector expansion and economic development.

4.1 Sheep and goat farms

From the field research, it emerged that only few livestock holders have started keeping animals on their own accord. Rather, it is more common for farmers to inherit the pastoralist life from previous generations.¹⁹⁷ Various farmers' families used to have more animals in the past, but they sold many of them because of rising feed prices and insufficient (safe) land for sheds and grazing.¹⁹⁸ Due to urban environment, population growth and general land scarcity, there are few small-scale farmers in the city of Hebron. In more rural areas like Bani Naem, a town with about 20.000 inhabitants, keeping livestock is much more common. There are about 500 livestock holders in Bani Naem.¹⁹⁹ This number includes every animal holder with at least five heads of sheep or goats, thus also very small-scale farmers.²⁰⁰ In 2013, there were 6787 animal and mixed holdings in the whole governorate of Hebron. Combined, they had 185.000 goats and sheep whose main purpose was milk production. About 60 per cent of these animals and their products were intended for household consumption, while about 40 per cent of them were used to generate income.²⁰¹ From these numbers, it can be inferred that about one per cent of the governorate's population is involved in livestock farming.

¹⁹⁷ Interview Nr. 9.

¹⁹⁸ Interviews Nr. 9 and 14.

¹⁹⁹ PCBS (2012).

²⁰⁰ *Ibid.* Definition employed by the PCBS.

²⁰¹ PCBS, "Livestock Survey," Table 14, 31 and 36.

Composition of livelihoods and management of risks in farming

The livelihoods of those households whose income depends solely on farming differ significantly from those who use it as an additional income source. For farmers who depend on livestock as a main income source, it appears that even a large number, e.g. 250 sheep and goats is barely sufficient to provide a family with a very basic living standard.²⁰² Still, dairying has a positive influence on household nutrition and poverty reduction because of the instant benefits of daily milk production and immediate sales to urban markets.²⁰³

Small-scale farmers who keep the animals as their main income usually have much larger numbers of livestock than ‘hobby-farmers’. According to the former group of farmers, they did not have any other possibilities to earn a livelihood, mostly because they were not educated in other fields and farming was the only profession they had learned; often from their fathers and grandfathers. Hence, the main factor constraining their job choices appears to be lack of education. In addition, insufficient surplus income constrains their ability to invest in any other business or further education.²⁰⁴

The harsh living conditions of these farmers and their statements indicate a lack of coping strategies with regard to the various risks they face. The World Development Report 2014 defines risk as the possibility of loss.²⁰⁵ Depending on their exposure, internal conditions and risk management, certain groups are more vulnerable to losses from negative shocks.²⁰⁶ In order to engage in successful risk management, farmers need to be capable of preparing for risk and be able to cope with it once a negative shock has occurred.²⁰⁷ Preparation consists of knowledge acquisition, i.e., getting information and assessing it with regard to risks in order to reduce uncertainty. Additionally, obtaining protection to limit the possibility and effects of negative shocks is important. Attaining insurance so as to spread costs between good and bad periods is another critical aspect of preparation. The goal of risk management is thus to increase benefits on the one hand and decrease losses when faced with risk on the other.²⁰⁸

For sheep and goat farmers, animal diseases represent significant risks. This is one of the most difficult issues especially small-scale dairy farmers have to deal with.²⁰⁹ When a female sheep

²⁰² Interview Nr. 16.

²⁰³ Devendra, 104.

²⁰⁴ Interview Nr. 19.

²⁰⁵ World Bank (2014): 62.

²⁰⁶ *Ibid.*

²⁰⁷ *Ibid.*, 63.

²⁰⁸ *Ibid.*

²⁰⁹ Interview Nr. 14.

or goat dies, it represents a big loss for the farmer (income shock). They have not only lost a valuable animal, but, of course, they also cannot get lambs and, consequently, milk from it anymore. Especially if those ewes get sick or die which were previously selected because of strength and high milk production, the farmer incurs a significant loss.²¹⁰ One farmer in the outskirts of Bani Naem said that from 250 lambs, about 50 die. This is due to diseases, stillbirths, climatic conditions.²¹¹ Such incidents cause the income of farmers to fluctuate.²¹² Additionally, farmers have various expenses. Their sheep regularly need a veterinarian and sometimes medicine, which small-holders have to pay for themselves. Since the animals are usually kept in sheds due to a lack of grazing areas, farmers also have to buy feed. According to all respondents, wheat and straw, while widely available, are rather expensive at the moment.

Farmers' resilience to income shocks is determined by how well they have been prepared and in which ways they are able to cope with them.²¹³ Additionally, it influences their ability to accumulate surplus capital and invest it in ways that serve the expansion of their farms. The interviews show that farmers deal with risks and income shocks differently, although certain patterns emerge. Many interviewees explained that they rely on family members for larger investments or in times of need. A number of farms, especially those that were not inherited, were set up by brothers in order to accumulate sufficient starting capital and to spread the risks.²¹⁴ Also, employing family members is cheaper than hiring external workers.²¹⁵ Poorer households have the tendency to use costly coping mechanisms, such as selling a productive asset like livestock, cutting on food consumption or consuming lower-quality food.

Households who sell productive assets curtail their (long-term) ability to generate sufficient income for the time after the shock.²¹⁶ It appeared that various farmers were forced to sell some of their goats and sheep in order to buy feed for the remaining ones because their incomes were not sufficient to pay for the running costs.²¹⁷ This means that often the profit of selling dairy products is so low that even the most basic expenses cannot be covered. This is

²¹⁰ Interview Nr.4, 17.

²¹¹ Interview Nr.16.

²¹² Interview Nr. 4.

²¹³ World Bank (2014): 63. Resilience refers to the ability to recover from negative shocks while retaining or improving one's functioning.

²¹⁴ Interview Nr. 19 and Nr 21.

²¹⁵ Jos Bijman, "Contract farming in developing countries: an overview," (2008): 16.

²¹⁶ World Bank (2014): 113.

²¹⁷ Interview Nr. 6, 15, 16.

also due to the current prices of feed, which represent another point of risk for farmers (see 3.2).²¹⁸

Another way of dealing with risk is to set up a cooperative, which was done in the village of Bani Naem.²¹⁹ Such initiatives show that people are aware of the risks involved in farming and try to spread them by co-owning herds of livestock.

Various risks like animal diseases, property insecurity and unforeseen high expenses that Palestinian farmers have to deal with are similar to those risks faced by farmers in developing countries elsewhere. The interviews however indicated that these risks are perpetuated and exacerbated by the occupation. This concerns especially issues of access to land and water as well as property security, as explained in chapter three. Field research points to Palestinian farmers engaging in risk-averse behaviour because of hazards caused by occupation policies such as insecurity over investments, trade difficulties, movement and access restrictions and general lack of (political) stability.

Others who like to keep working in farming despite its risks try to cope with them by having additional jobs in other sectors in order to secure a reliable income.²²⁰ One farmer who owns about 60 sheep and goats works as a carpenter and flexibly moves between working for his boss and taking care of his animals.²²¹ A few of the farmers also trade with goats and sheep in order to earn a small profit.²²² From 2010 to 2013, the number of animal holdings decreased by 25 per cent and the number of mixed holdings increased by 17 per cent. This shows that some farmers try to spread risks by widening their portfolio.²²³

Dairy production and herd size

The season for milking usually lasts between three and five months, between January and May.²²⁴ Most of the small-scale farmers let the animals give birth in winter, because then the possibility for lambs getting infected with diseases by insects or die because of the heat is the lowest.²²⁵ Only very few farmers spread births and according lactation periods over the course

²¹⁸ Interview Nr. 14.

²¹⁹ Interview Nr. 10.

²²⁰ Interview Nr. 14.

²²¹ Ibid.

²²² Interview Nr. 1, 5, 17.

²²³ PCBS, "Livestock Survey," 62; PCBS (2012): 70.

²²⁴ Interview Nr. 2, 6, 16, 17.

²²⁵ Interview Nr. 16.

of the year.²²⁶ Those who do so have constant milk supply which enables them to produce dairy during the whole year, thereby generating a more steady income.

Most farmers let their herds grow slowly through constant reproduction, a necessity for having lactating ewes.²²⁷ Very few farms use artificial insemination to induce sheep to give birth twice a year.²²⁸ Only those few farmers who engaged in trading buy additional animals.²²⁹ Others have reported not wanting to buy more because of the limited size of their stables, lack of money for acquiring and feeding more animals or, in the case of hobby-farmers, because they have sufficient ewes to cover the dairy needs of the household and because their income does not depend on dairy sales.²³⁰ While for hobby-farmers there is no need to upscale, farmers whose livelihoods solely depend on livestock and milk production would possibly benefit from enlarging their herds and stables. Most of these larger-scale sheep and goat farms are however family run and have no access to credit or additional land. Especially the latter is directly influenced by occupation policies. Under these conditions, the limit to herd extension is set by the limited labour available and the carrying capacity of the stable and land currently owned by the family.

Apart from these limiting factors, buying goats and sheep is usually no problem in terms of availability; they can be purchased from larger farms, from the market or even in the centre of Hebron.²³¹ The total number of the herd is determined by several factors. Animals that have reached a certain age, get sick or do not give milk (anymore) are sold, usually to the butcher. If the household can afford it, more efficient sheep are bought to replace them. Depending on how many of the new-born lambs are females, more or less will be added to the herd. Many farmers keep different numbers of the most promising females in terms of strength, ability to give birth twice a year and milk yield.²³² Male lambs are usually sold to traders or to the butcher. Currently, because of high demand and insufficient supply, the price for meat is considered high, tempting some farmers to sell more sheep than necessary; sometimes also female ones.²³³ This shows that in certain circumstances, farmers prefer 'instant cash' above profit earned in the long-term. This is especially the case if they need a larger amount of money at once, for example to pay for a daughter's wedding. Also prices of feed determine

²²⁶ Interview Nr. 14.

²²⁷ Interview Nr. 6.

²²⁸ Interview Nr. 15.

²²⁹ Interview Nr. 1, 15, 17.

²³⁰ Interview Nr. 1, 8.

²³¹ Interview Nr. 5.

²³² Interview Nr. 11, 14, 17.

²³³ Interview Nr. 17.

how much money can be spent on additional animals.²³⁴ Furthermore, some farmers regularly slaughter a sheep for religious holidays or weddings, preventing herds from growing as well.²³⁵

With the exception of one larger farm whose owner had other income sources as well, none of the sheep and goat farmers has a milking machine. With a price of about 10000 Dollar, such equipment only pays off if one has a greater number of animals.²³⁶ In 2013 there were 571 milking machines owned and used in animal and mixed holdings in the Hebron governorate.²³⁷ It can be assumed that they were mainly used for dairy cattle, since even those farmers who had between one hundred and two hundred sheep and goats did not own a milking machine but milked them by hand. Hesitating to invest in a machine may also be related to the fact that it would only be used for a few months per year, during milk season.²³⁸ Difficult access to credit as well as uncertainty about one's property and equipment because of settlers' vandalism or Israeli soldiers' attacks are likely to influence farmers' decisions about high-cost investments.

Marketing of dairy products

None of the sheep farmers had contracts with dairy companies because they do not work with sheep or goat milk. The farmers often sell their milk products to customers directly because they only have a few kilos of produce to sell. Selling products to customers directly results in a better price and thus more profit for the farmers than if they sell it to shops, which have to resell it.²³⁹ The milk itself is not sold, partly because it does not keep well for long and small-scale farmers do not have cooling systems or refrigerator trucks to transport it. Although the Ministry of Agriculture considers having less than thirty sheep or goats to be for household use only, this number often still results in surplus dairy. Small-scale farms usually sell this to neighbours, friends and relatives, because they know them and their products, and trust in their high quality. Generally there appears to be a high demand for home-made dairy products. None of the small-holders with up to thirty animals had any difficulties in selling their products and they are usually rather satisfied with the prices they receive for the dairy.²⁴⁰

²³⁴ Interview Nr. 14.

²³⁵ Interview Nr. 15.

²³⁶ Interview Nr. 5.

²³⁷ PCBS, "Livestock Survey," Table 70.

²³⁸ Interview Nr. 5.

²³⁹ Interview Nr. 6.

²⁴⁰ Interview Nr. 14, 15.

This shows that in small-scale farming, economic structures are well-organized with regard to supply and demand on the village level.

The seasonal nature of home-made dairy produce is somewhat problematic.²⁴¹ All farmers try to sell their products in spring, which causes oversupply.²⁴² At the beginning of the season, the prices are still good. But in the remaining spring months, prices decline; cheese, for example, is initially sold for about 30 shekel and can later drop to about 17 shekel.²⁴³ Farmers who have larger amounts of produce sell it to small shops and mini-supermarkets in their own and adjoining villages. Such dairy sales are usually based on informal unplanned arrangements without contracts. One interviewee whose livelihood depends solely on livestock farming said that, especially in spring, he sometimes desperately drives around to find buyers. Also, not all customers pay the full amount directly which is detrimental for resource-poor farmers.²⁴⁴ Although most farmers can sell their dairy products for satisfactorily high prices at the moment because there is a high demand for them, their input costs do usually not allow them to gain much or any profit. Therefore, scaling up their operations by buying additional land, animals, stables or machinery is often not feasible, but also not necessarily desired.

It has been suggested that contract farming (CF) is a beneficial instrument for both small- and large-scale farmers in developing countries.²⁴⁵ International development agencies like IFAD and the World Bank consider it important to link small-scale farmers to domestic and possibly foreign markets, thereby reducing poverty.²⁴⁶ Bijman argues that small-scale farmers in developing countries often face at least three constraints to increasing productivity and income. Often, they lack information about (improved) production methods and market opportunities and they do not have the financial reserves for profitable investments. In addition, small farmers who operate near subsistence are more risk averse than larger farmers. If sufficient consideration is given to the particular operating conditions of Palestinian farmers, CF has the potential to (partially) alleviate these constraints.²⁴⁷

Contracting between producers and factories or supermarkets is an efficient way to strengthen vertical coordination, i.e. the alignment between activities at different stages of the

²⁴¹ Devendra, 109.

²⁴² Interview Nr. 6.

²⁴³ Interview Nr. 5, 16.

²⁴⁴ Interview Nr. 16.

²⁴⁵ Bijman.

²⁴⁶ IFAD, "Promoting Market Access for the rural poor in order to achieve the millennium development goals," (2003); World Bank, "World Development Report 2008: Agriculture for Development," (2007) in Bijman, 1.

²⁴⁷ Bijman, 14.

agricultural food supply chain.²⁴⁸ CF is particularly well suited for the production and marketing of dairy products due to their high value and high perishability.²⁴⁹ Contract farming reduces transaction costs by decreasing uncertainty, which is directly related to incomplete or asymmetric information on current and future conditions. By providing incentive and means, CF increases the possibility for investments in farm equipment to improve production conditions with regard to efficiency, hygiene, animal welfare, disease reduction and risk aversion.²⁵⁰

Small-holders with large herds are likely to benefit from contractual arrangements. Possible contractors for them would especially include mini-supermarkets, who could buy the home-made dairy products from farmers. Currently, Palestinian dairy factories are not yet able to process sheep milk because of its different characteristics than cow milk and because of the seasonality of production by sheep farmers, making regular, reliable supply difficult. Additionally, there are too few collection centres and the production conditions at farm level are deficient with regard to hygiene and efficiency.²⁵¹ Once these obstacles are overcome, contracts with milk processing firms could induce farmers to make the necessary investments, e.g. buy cooling tanks and trucks.²⁵² Thereby, risks can be transformed from a burden to an incentive to undertake change and pursue opportunities.²⁵³

4.2 Dairy cow farms and factories

In this section, I describe findings from the case study with regard to cow farms and factories, paying special attention to issues that distinguish them from sheep farms. In 2012 there were eleven manufacturers of dairy products in the Hebron governorate.²⁵⁴ I visited one very large and two smaller factories and four cow farms. The factories have differing numbers of employees; Al Jabrini, the largest, has 400, while Al Safy employs about forty and Al Natsha just ten workers.²⁵⁵ The cow farms are located in Yatta, Idna and Al Arroub and can be considered intensive farming systems.²⁵⁶ In 2013, there were 4077 heads of cattle for milk

²⁴⁸ Bijman, 1.

²⁴⁹ *Ibid*, 11-12.

²⁵⁰ *Ibid*, 11.

²⁵¹ Interview Nr. 12.

²⁵² Interview Nr. 22.

²⁵³ World Bank (2014): 4.

²⁵⁴ PCBS, "Establishment Census 2012," (2015).

²⁵⁵ Interview Nr. 12, 13, 18.

²⁵⁶ C. Devendra, 105-107.

production in the Hebron governorate. Together with Jenin, this is the highest number for cattle in a West Bank governorate.²⁵⁷

Milk production on cattle farms in Hebron

Three of the farmers have established their farms including cows, stables and machinery by working together with their brothers.²⁵⁸ The smaller factories, Al Natsha and Al Safy, also were built through family cooperation.²⁵⁹ This way sufficient capital could be collected in order to pay for initial expenses. The farms are not older than five to fifteen years.²⁶⁰ Keeping dairy cattle is still a fairly new phenomenon in the Hebron area.²⁶¹ All of the farms and factories are family businesses and have been established step by step.²⁶² Al Natsha and Al Safy even started by making dairy products manually, but have then switched to machines.²⁶³ The farmers started with small numbers of cows first, but quickly earned enough in order to buy more cattle. These findings indicate that during the 1990's, some families managed to establish factories despite the difficult situation during the first Intifada (Palestinian uprising). Usually, cattle farmers do not have jobs other than their farms. The livelihood they earn from selling the milk is sufficient to cover the needs of the family.²⁶⁴ Also, sometimes there is money left to expand the farm by building more stables or buying additional cows.²⁶⁵ This shows that dairy cow farms generally have better growth opportunities than sheep farms, possibly because the former have a higher profit margin than the latter and because dairy factories only work with cow milk.²⁶⁶ In contrast to sheep farms, cow farms produce milk all year round. All cow farms use milking machines and a cooling tank to store the milk in until it is collected by the factory drivers.²⁶⁷ This way, they can provide factories with a reliable, constant supply of high-quality milk, making them more interesting contract partners. These practices demonstrate that cattle farms are much more professionalized than sheep farms and therefore better suited for vertical coordination with milk factories.

²⁵⁷ PCBS, "Livestock Survey," Table 26.

²⁵⁸ Interview Nr. 19, 21, 22.

²⁵⁹ Interview Nr. 13, 18.

²⁶⁰ Interview Nr. 19, 21, 22.

²⁶¹ Interview Nr. 21.

²⁶² Interview Nr. 13, 18, 19.

²⁶³ Interview Nr. 13, 18.

²⁶⁴ Interview 19, 21, 22.

²⁶⁵ Interview Nr. 21, 22.

²⁶⁶ Interview Nr. 19, 21, 22.

²⁶⁷ Ibid.

Currently, Palestinian farmers can only buy cows from Israel because occupation policies and the lack of Palestinian sea- and airports preclude direct import of livestock.²⁶⁸ According to different respondents, sometimes there are significant health problems with these cows. A representative from the Agricultural Ministry said that the dependence on Israeli cows causes some traders to illegally import livestock into the West Bank, thereby avoiding health checks. The cows, some of which are infected, are then sold cheaply to farmers who do not always recognize diseases immediately and thereby risk the spread of diseases on Palestinian farms.²⁶⁹ This way, farms in Idna and Yatta lost several cows to smallpox. Additionally, the spread of such diseases means that there are fewer imports of cows, driving up their prices.²⁷⁰

In order to expand their herds and decrease dependence on imported (sometimes low-quality or sick) Israeli cows, well-informed breeding presents an opportunity to lower costs in the long run. This might, however, require some initial investments like larger stables. The farmers in the Hebron area did not engage in breeding because they consider rearing young cows as too expensive and they did not have sufficient space for them. Therefore, new-born calves were sold after a few days or weeks.²⁷¹ Sometimes, farmers depended on selling calves earlier than necessary in order to have ready money. These practices show that herds of dairy cattle usually stay about the same size once they are large enough to generate sufficient income to cover all farm and household expenses. Nevertheless, all farmers expressed the desire to expand and develop their farms further and to engage in breeding in order to improve certain characteristics of their cattle, but either they have to find affordable, suitable plots of land first or wait for cattle prices to get lower.²⁷² Especially the former is difficult to achieve in light of artificial land shortages caused by occupation policies (see 3.1). Additionally, the expenses for feed, veterinary controls of pregnant cows, tanks of water and paying taxes make it difficult for farmers to accumulate sufficient capital for expansion.

The Ministry of Agriculture or other government agencies do currently not engage in agricultural extension services such as trainings for farmers. The only support they offer for cow farmers is occasional help with rebuilding a roof after heavy storms and vaccinations against common livestock diseases carried out by their vet.²⁷³ The limited budget of the PA

²⁶⁸ Interview Nr. 19.

²⁶⁹ Interview Nr. 24.

²⁷⁰ Interview Nr. 22.

²⁷¹ *Ibid.*

²⁷² Interview Nr. 19, 21, 22.

²⁷³ *Ibid.*

prevents the MoA from supporting farmers while recognizing their importance to Palestinian food security, development and employment generation.²⁷⁴

Marketing of dairy products

Organized marketing and market outlets are important prerequisites for the distribution and sale of milk.²⁷⁵ This is the biggest direct problem encountered by owners of dairy cattle.

Usually these farmers do not process the milk in any way, but sell it directly either to a trader or to dairy companies such as Al Juneidi, Al Jabrini and Al Safy.²⁷⁶ Cattle farmers are less likely to sell their milk to the same kind of mini-markets as sheep farmers do, except if there are temporarily no other buyers. Instead, they sell their milk to buyers with more capital-intensive processing plants like dairy factories because the farmers are able to provide them with a steady and reliable flow of raw material which the factories need to maintain a high capacity utilization rate.²⁷⁷ Although they have (long-term) contracts in which certain amounts of milk are agreed upon to sell, the farmers cannot always rely on these contracts.

A more political problem is the following. Gaza represents a big market regarding dairy sales for especially Al Juneidi. Due to surges of violence between Gaza and Israel and arbitrary closures of the border, this market is rather unstable. Thus, whenever for example Al Juneidi is unable to transport its products into the Gaza Strip, it takes much smaller amounts of milk from their suppliers, leaving them with no choice but to sell their surplus milk for dumping prices to other factories, neighbours and village people.²⁷⁸ Cow farmers can thus deal with the risk, but in a very inefficient manner and at a loss. This is especially harsh for the farmers because they have to keep feeding their cows and contracts with Israeli feeding centres force them to not only buy the agreed quantities of cattle feed, but also to pay them directly without deferment.²⁷⁹ A farmer in Idna experienced this situation during the last war in Gaza in 2014. Whenever he could not sell his milk, he would have to throw it away after two days, facing a huge loss.²⁸⁰ This in turn is likely to disrupt relations with the factory that reneges on their contract. Additionally, factories might not always take the agreed amount of milk because of fluctuating demand for dairy products. One farmer said that Al Juneidi, a large dairy factory in Hebron, gets milk samples from all the farmers at the beginning of every year, chooses the

²⁷⁴ Interview Nr. 24.

²⁷⁵ Devendra, 107-109.

²⁷⁶ Interview Nr. 19, 21, 22.

²⁷⁷ Bijman, 12.

²⁷⁸ Interview Nr. 19, 1.

²⁷⁹ Interview Nr. 19.

²⁸⁰ Interview Nr. 21.

highest quality milk and selects these farms to have contracts with.²⁸¹ Such short-term contracts generate a lot of uncertainty for farmers. These risks involved in being able or not to sell all their milk makes it difficult for farmers to for example think of expanding their herds. Also, some farmers were of the opinion that factories are trying to reduce dependence on other farms by establishing or extending their own estate farms, thereby reducing external demand for milk.²⁸² The risks connected to marketing the milk in an unstable region cause the dairy sector to only grow rather slowly, despite rising demand.

Contention with the prices received for milk appeared to differ per town. According to some respondents, dairy factories in Hebron together determine the price of milk in relation to market demand but also in order to secure certain profits for themselves.²⁸³ Another farmer experienced it as a problem that he gets paid by the factories by cheque and would therefore receive his money only after three or four months. He found this difficult because of the running expenses that often have to be paid for directly.²⁸⁴

The empirical findings indicate that farmers' relationships with contractors often are uneven regarding power. Contractors sometimes renege from the agreements without consequences or exercise power in imposing the terms of the contract.²⁸⁵ Further, farmers would benefit from more specific adaptation of the terms of contracts to the Palestinian context, especially with regard to demand shocks, closures of Gaza or road blockades within the West Bank that restrict the transportation of raw milk, dairy products or feed. Including likely contingencies in contracts would better protect farmers from the worst effects of periods where marketing milk is difficult.

A promising aspect of contract farming is to include technical assistance in the stipulations.²⁸⁶ Contractors offering training to farmers in order to improve milk quality, hygiene and efficiency can result in higher product prices and enhanced farm production. The provision of inputs and assistance reduces transaction and coordination costs for the contractor.²⁸⁷ Currently, only a few factories offer extension services to their supplying farmers.²⁸⁸ CF can further result in more investments in human and physical capital at the farm level, because

²⁸¹ Interview Nr. 19.

²⁸² Interview Nr. 19, 21.

²⁸³ Interview Nr. 18, 19.

²⁸⁴ Interview Nr. 21.

²⁸⁵ Bijman, 27.

²⁸⁶ Bijman, 11.

²⁸⁷ Ibid, 26.

²⁸⁸ Interview Nr. 12.

owners of capital-intensive production plants have more resources at their disposal and could therefore provide farmers with access to credit.²⁸⁹

Dairy factories appear to face a number of problems as well. The larger factories are currently producing, on average, at 45 per cent of their production capacity, while constantly working to increase the variety of products they offer. Depending on marketing possibilities and the availability of input, factories could thus easily expand output. Dairy factories in Hebron at the moment are not yet able to produce UHT milk, although such production would be highly beneficial to all domestic stakeholders in the dairy business. A manager of a milk-processing facility expressed the aspiration to start producing UHT milk, but said that high investment costs in machinery, technical maintenance and packaging materials make it a costly undertaking.²⁹⁰ Nevertheless, such investment would pay off in the long run by enabling factories to accept agreed amounts of milk from farmers even if there are negative demand shocks. Surplus milk could be processed to UHT milk, which can be stored at room temperature for several months. Due to the same reason, factories could start exporting milk abroad which is currently impossible due to waiting times at border crossings (checkpoints) and (heightened) costs of refrigerator trucks. Longer closures can even lead to the permanent loss of perishable goods like milk.²⁹¹

Under the given circumstances, horizontal expansion of dairy farms and factories is less likely than vertical expansion, i.e. intensification.²⁹² The latter is supported by the growing purchasing power of the domestic market and the great potential in dairy production because of its high-value products and less dependence on difficult-to import inputs. Horizontal expansion is seriously constrained by land and water availability and the deference of a solution to these issues to final status negotiations.²⁹³

4.3 Politically-motivated trade asymmetries: challenges for sector expansion and economic development

One of the greater challenges for dairy factories is the competition with Israeli dairy products that are imported to the oPt. At the moment, Israeli products have a market share between 30 and 50 per cent in the oPt.²⁹⁴ Palestinian consumers keep buying Israeli products because they

²⁸⁹ Bijman, 14, 26.

²⁹⁰ Interview Nr. 20; Eddie Mukaaya, "Dairy sector urged to invest in UHT production," *The new times Rwanda*, December 30, 2008, accessed January 25, 2016, <http://www.newtimes.co.rw/section/article/2008-12-30/6473>.

²⁹¹ Fischer et al., 264-265.

²⁹² Elmusa and El-Jaafari, 19.

²⁹³ Ibid, 26-27.

²⁹⁴ Interview Nr. 12.

consider them to be of higher quality.²⁹⁵ Additionally, imported dairy products can be sold at a lower price because of the substantial subsidies Israeli producers receive from their government and because they have economies of scale. Support for Palestinian agriculture on the contrary has been minimal, sporadic, and mainly from nongovernmental organizations.²⁹⁶ This asymmetric competitiveness is based in the PA's minimal (economic) policy space. This partly results from the current neoliberal policies that prevent the Palestinian leadership from taking the necessary steps to support the oPt's private sectors (specifically agriculture) and shield them from uneven competition.²⁹⁷ The PA can for example not independently reduce tariff rates or value added taxes.²⁹⁸ Due to the PA's weak position, decisions on import reductions are difficult as well.

According to the Economic Protocol, there is to be free movement of agricultural goods between the Palestinian territories and Israel without additional customs and import taxes.²⁹⁹ Statements from dairy factory managers however showed that this equality does currently not exist. The variety of non-tariff restrictions to trade make it virtually impossible even for large businesses to export products to Israel, and only very few are able to transport goods to Gaza.³⁰⁰ The factory managers were rather discontented about them not being allowed to export, while Israeli companies in turn can export to the West Bank freely, even without compliance with Palestinian health standards and regulations.³⁰¹ The managers considered this as very unfair competition. Factory managers and farmers thought that the Palestinian farming sector only has a chance to grow when the occupation is ended and trading restrictions are lifted.³⁰²

Most of the constraints imposed by the Israeli occupation are not officially declared as such; instead, they are manifested in a range of informal or casual arrangements that seem disconnected and partly apolitical, but when taking a closer look, function as obstacles that set an upper limit to economic development of the oPt. Thereby, the asymmetric dependency status of the oPt economy is perpetuated and the occupation 'managed.' It may be inferred that due to their 'civil' nature (as opposed to violent), these measures and arrangements are

²⁹⁵ Mansoor Maitah et al., "Exploring the Determinants of Consumer Behaviour in West Bank towards Domestic and Imported Dairy Products," *Acta Univ. Agric. Silvic. Mendelianae Brun.* 63, no.1 (2015): 356.

²⁹⁶ Elmusa and El-Jaafari, 24.

²⁹⁷ Khalidi (2009): 22.

²⁹⁸ Khalidi and Samour, 12.

²⁹⁹ Elmusa and El-Jaafari, 23.

³⁰⁰ Interview Nr. 12.

³⁰¹ Interview Nr. 12, 13, 24.

³⁰² Interview Nr. 2.

unlikely to be criticized by international law or human rights institutions and therefore are ideally suited to preserve the status quo. The arrangements (‘casual constraints’) include the pressure exercised on the PA to adopt neoliberal policies that are, in practice, only beneficial for Israeli business. Further, they are made up of unrealistic health regulations, standards and import requirements that are not communicated clearly towards Palestinian producers.³⁰³ Overly bureaucratic permit procedures are another arrangement to obstruct development. Khalidi argues that areas under PA control are circumscribed by the structural realities of occupation; obtaining Israeli approval for projects for example regularly causes delays.³⁰⁴ Further, movement and access restrictions justified by security concerns, and, most importantly, the constant circumvention and questionable interpretation of previous agreements and international law by the GoI contribute to the inability of the oPt to build a sustainable Palestinian economy.³⁰⁵

These ‘casual constraints’ form an integral part of the management of the occupation by undermining the possibility to establish a Palestinian market with the capacity to meet the needs of its domestic population. At the same time, economic rights, understood as the rights of individual Palestinians to subsistence and to earn a livelihood, are denied.

One of the results of these ‘casual constraints’ according to Hanieh was the deliberate destruction of the agricultural sector that preceded Israeli domination of Palestinian markets for food and manufactured products. This provided Israel with a captive consumer base, resulting in Israeli economic expansion.³⁰⁶ Additionally, the success of the Israeli dairy industry is bolstered by Israel’s systematic government policies, leading to a suppression of local Palestinian farmers’ initiatives in the oPt.

³⁰³ Interview Nr. 12, 13,18.

³⁰⁴ Khalidi and Samour, 13.

³⁰⁵ Godlewski, 164.

³⁰⁶ Hanieh, 104, 105.

5. Conclusion

Findings

In the following, I discuss and summarize my results with regard to the research question.

My analysis suggests that constraints encountered by participants of the dairy business in Hebron largely outweigh their opportunities for expansion. The major constraints are clearly constituted by consequences of the Israeli occupation. Further constraints are related to internal operations of the sector, such as the insufficient degree of vertical coordination between actors.

The findings indicate that trade and economic development in the oPt remain under political and security considerations, which reinforce the dependency of the oPt on Israel and thereby perpetrate the status quo of the occupation.³⁰⁷

My analysis showed that many difficulties experienced by Palestinian farmers and producers are ‘casual constraints’ such as non-tariff barriers and movement and access restrictions that add to high volatility and unpredictability in production and trade and lead to reduced investments in new activities and technologies. The function of these constraints is to manage, but not to resolve the conflict.³⁰⁸ Additionally, they perpetrate and often exacerbate existing economic asymmetries and economic dependence. Additionally, Israel’s arbitrary interpretation of agreements such as the Paris Protocol constrains Palestinian producers’ possibilities for expansion and creating a ceiling on development.³⁰⁹

Furthermore, economic development in the oPt is obstructed by a virtual non-existence of economic autonomy. Especially after the PA’s adoption of a neoliberal course, their policy space to decide on measures that would support domestic private sectors and possibly put Israeli importers at a disadvantage had decreased considerably. The absence of autonomous economic power forecloses Palestinian ability to challenge asymmetric containment.³¹⁰

³⁰⁷ Khalidi (2009).

³⁰⁸ Khalidi (2011): 12.

³⁰⁹ El Hayek, 243.

³¹⁰ Khalidi (2011):17.

In this regard, the

“international community has generally favoured neoliberal economic policy principles and generous funding of a political-economic relation between the Palestinian Authority and Israel that does not challenge prolonged occupation, address its deep impact, or enable Palestinian economic self-determination.”³¹¹

Instead, the absence of economic autonomy leads to normalization and acceptance of the status quo as permanent. These findings indicate that success of the Palestinian political economy and the struggle for national liberation and sovereignty are inherently interdependent.³¹²

In order to realize the new development approach discussed in the introduction, a lot needs to be done. Most importantly, academic analysis based on foundational research and more deep-reaching investigation of the various Palestinian sub-sectors and their possibilities and constraints to seizing the opportunities that they do have can play a key role in achieving the rethinking proposed in this thesis. More analysis is needed of the undesirable effects generated by the asymmetrically large amount of economic power given to Israel in the Protocol.³¹³ Focus needs to shift away from a nominal bilateralism that actually masks a unilateralism driven by the prerequisites of occupation.³¹⁴

Moreover, there are various areas with regard to dairying that merit further research. In order to understand their influence on the dynamics of the system, investigation of socio-economic and policy factors is needed, most usefully done with interdisciplinary approaches.³¹⁵

Limitations

There are a few limitations with regard to my thesis. Due to time and resource constraints, the number of interviews with farmers and dairy producers I was able to carry out was rather small. Therefore, the results of the case study can only serve as indications and are, by themselves, not suitable to draw far-reaching conclusions from. Also, snowball sampling used as the main research methodology may result in selection bias. Further, it may be argued that this thesis is biased because of its emphasis on the Palestinian perspective.

³¹¹ Khalidi (2009): 22-23, 27.

³¹² Hanieh, 122.

³¹³ Arnon and Weinblatt, 303.

³¹⁴ Khalidi (2009): 28.

³¹⁵ Devendra, 110.

Recommendations

This study's findings may be employed for a few recommendations. They are especially relevant for development and aid-organizations and address the need to decrease (asymmetrical) dependency on imports while boosting domestic production of dairy products to diminish the current supply and demand gap. A long-term strategy based on training and extension services aimed at sustainable results should be the foremost priority. The impact of land use restrictions and water shortages could be reduced by a shift towards dairy cattle farms with intermediate or large-scale intensive systems, which exhibit relatively high profits, proficiency and better vertical coordination with processing facilities than sheep farms. This is also indicated by PCBS figures reporting a strong rising trend in milk production and possible shift in consumer preference towards cow dairy between the year 2000 and 2007.³¹⁶ Domestically grown feed is needed, too, but may be unfeasible under current resource constraints. Regarding implementation of such policies, it is likely that certain notions of self-sufficiency, economic sovereignty and protectionism suggested in this paper cause donors and aid agencies as well as the PA to profess little enthusiasm for this new approach, given their current focus on neoliberal development thinking.³¹⁷

³¹⁶ Madi, Amer et al., "The Impact of Closure and High Food Prices on Performance of Imported Staple Foods and Vegetable and Fruits Market in the oPt," Report for the United Nations World Food Programme (2009): 220.

³¹⁷ Christine Leuenberger and Ahmad El-Atrash, "Building a Neoliberal Palestinian State under Closure: The Economic and Spatial Implications of Walls and Barriers," *Economic Sociology* 16, no. 2 (2015): 21-22; Hanieh, 101.

Bibliography

Primary sources

- Berkes, H. Interview Nr. 1, August 7, 2015.
- Berkes, H. Interview Nr. 2, August 7, 2015.
- Berkes, H. Interview Nr. 3, August 7, 2015.
- Berkes, H. Interview Nr. 4, August 7, 2015.
- Berkes, H. Interview Nr. 5, August 8, 2015.
- Berkes, H. Interview Nr. 6, August 8, 2015.
- Berkes, H. Interview Nr. 7, August 8, 2015.
- Berkes, H. Interview Nr. 8, August 8, 2015.
- Berkes, H. Interview Nr. 9, August 8, 2015.
- Berkes, H. Interview Nr. 10, August 9, 2015.
- Berkes, H. Interview Nr. 11, August 9, 2015.
- Berkes, H. Interview Nr. 12, August 17, 2015.
- Berkes, H. Interview Nr. 13, August 18, 2015.
- Berkes, H. Interview Nr. 14, August 18, 2015.
- Berkes, H. Interview Nr. 15, August 22, 2015.
- Berkes, H. Interview Nr. 16, August 22, 2015.
- Berkes, H. Interview Nr. 17, August 22, 2015.
- Berkes, H. Interview Nr. 18, August 23, 2015.
- Berkes, H. Interview Nr. 19, August 24, 2015.
- Berkes, H. Interview Nr. 20, August 26, 2015.
- Berkes, H. Interview Nr. 21, August 29, 2015.
- Berkes, H. Interview Nr. 22, August 29, 2015.
- Berkes, H. Interview Nr. 23, August 25, 2015.
- Berkes, H. Interview Nr. 24, August 31, 2015.

Secondary sources

- Abdelnour, Samer. "A new model for Palestinian development." *Policy brief* Al- Shabaka (2010).

- Abed, George T. "The Political Economy of Resistance." *Journal of Refugee Studies* 2, no. 1 (1989): 55-63.
- Abu-Madi, Maher O. "Farm-level perspectives regarding irrigation water prices in the Tulkarm district, Palestine." *Agricultural Water Management* 96 (2009): 1344-1350.
- Ahmed, Mohamed A.M., Ehui, Simeon and Assefa, Yemesrach. "Dairy Development in Ethiopia." *EPTD Discussion Paper* No. 123 (2004).
- Alatout, Samer. "Towards a bio-territorial conception of power: Territory, population, and environmental narratives in Palestine and Israel." *Political Geography* 25, (2006): 601-621.
- Albala, Ken. *Food cultures of the world encyclopaedia. Africa and the Middle East, Volume 1* (2011).
- Arnon, A. and Weinblatt, J. "Sovereignty and economic development: The case of Israel and Palestine." *The Economic Journal* 111 (2001): 291-308.
- Arnon, Arie, Avia Spivak, Oren Sussman. "Incomplete Contracts, the Port of Gaza and the Case for Economic Sovereignty." (2000).
- Asadi, Fawzi, Dr. "How Viable Will the Agricultural Economy Be in the New State of Palestine?" *Geo Journal* 21, no. 4 (1990): 375-383.
- Azoulay, Ariella and Adi Ophir. *The One-State Condition: Occupation and Democracy in Israel/Palestine*. Stanford: Stanford University Press, 2013.
- Barbano, D.M., Y. Ma, M.V. Santos. "Influence of Raw Milk Quality on Fluid Milk Shelf Life." *Journal of Dairy Science* 89, Electronic Supplement (2006): 15-19.
- Bernard, H. Russel. "Interviewing I: Unstructured and Semi-Structured." in *Research Methods in Anthropology: Qualitative and Quantitative Approaches*. Alta Mira Press, 2011.
- Biernacki, Patrick and Waldorf, Dan. "Snowball Sampling: Problems and Techniques of Chain Referral Sampling." *Sociological Methods & Research* 10, no. 2 (1981): 141-163.
- Bijman, Jos. "Contract farming in developing countries: an overview." Working paper, Wageningen University (2008).
- Bryman, Alan. "Interviewing in qualitative research" in *Social Research methods*. Oxford University Press, 2012.
- Chambers, Robert and, Gordan R. Conway. "Sustainable rural livelihoods: Practical concepts for the 21st century." IDS Discussion Paper 296 (1991).
- Christian Peacemaker Team. "Palestine: Dairy Farm Demolished." *Signs of the Times* 22, no. 2 (June 30, 2012). Accessed 24 May 2015, <http://www.cpt.org/news/sott/articles/2012/palestine-dairy-farm-demolished>.
- Cobham, David. "Economic aspects of the Israeli-Palestinian conflict: Introduction," *The Economic Journal* 110 (2001): 249-253.

- Cohen, Nissim and Arieli, Tamar. "Field research in conflict environments: Methodological challenges and snowball sampling." *Journal of Peace Research* 48, no. 4 (2011): 423-435.
- Coxhead, Ian, Shively, Gerald and Shuai, Xiaobing. "Development policies, resource constraints, and agricultural expansion on the Philippine land frontier." *Environment and Development Economics* 0, no.2 (2002): 341-363.
- Devendra, C. "Smallholder dairy production systems in developing countries: Characteristics, potential and opportunities for improvement, Review." *Asian-Australasian Journal of Animal Sciences* 14, no. 1 (2001): 104-113.
- DMS Development and Management solutions. "Updating the master plan of the milk chain in Rwanda." Ministry of agriculture and animal resources (2009).
- El Hayek, Vincent. "Palestinian Economic Development: Israeli Actions in Light of the 1994 Paris Protocol and International Economic Law." *Minnesota Journal of International Law* 24, no. 2 (2015): 223-244.
- Elmusa, Sharif S. and Mahmud El-Jaafari. "Power and Trade: The Israeli-Palestinian Economic Protocol." *Journal of Palestine Studies* 24, no. 2 (1995): 14-32.
- Fischer, Stanley, Alonso-Gamo, Patricia, von Allmen, Ulric Erickson. "Economic developments in the West Bank and Gaza since Oslo." *The Economic Journal* 111 (2001): 254-275.
- Fredericksen, Harald D. "Water: Israeli strategy, implications for peace and the viability of Palestine." Macro Center Working Papers, Paper 9 (2004).
- George, Alexander L. and Andrew Bennett. *Case studies and theory development in the social sciences*. MIT Press, 2004.
- Godlewski, Andrew C. "'Damming' the Peace Process: Water Politics and its Impact on the Israeli-Palestinian Conflict." *Journal of Muslim Minority Affairs* 30, no.2 (2010): 153-166.
- Gulati, Ashok, Minot, Nicholas, Delgado, Chris, Bora, Saswati. "Growth in high-value agriculture in Asia and the emergence of vertical links with farmers." Paper presented at the workshop "Linking Small-Scale Producers to Markets: Old and New Challenges." The World Bank, 15 December 2005.
- Hanafi, Sari. "Explaining spacio-cide in the Palestinian territory: Colonization, separation, and state of exception." *Current Sociology* 61, no.2 (2012): 190 –205.
- Hanieh, Adam. "Class and State in the West Bank: Neoliberalism under occupation" in *Lineages of Revolt: Issues of Contemporary Capitalism in the Middle East*. Chicago: Haymarket Books, 2013.
- IFAD. "Promoting Market Access for the rural poor in order to achieve the millennium development goals," (2003).
- Israel Ministry of Foreign Affairs. "Declaration of Principles, 13 Sep 1993" (2013). Accessed on January 13, 2016.

<http://www.mfa.gov.il/mfa/foreignpolicy/peace/guide/pages/declaration%20of%20principles.aspx>.

Israel Ministry of Foreign Affairs. "The Israeli-Palestinian interim agreement, 28 Sep 1995" (2013). Accessed on January 13, 2016.

<http://www.mfa.gov.il/mfa/foreignpolicy/peace/guide/pages/the%20israeli-palestinian%20interim%20agreement.aspx>.

Khalidi, Raja and Sobhi Samour. "Neoliberalism as liberation: the statehood program and the remaking of the Palestinian national movement." *Journal of Palestine Studies* Vol. 40, no. 2 (2011): 6-25.

Khalidi, Raja J. and Sahar Taghdisi-Rad. "The economic dimensions of prolonged occupation: continuity and change in Israeli policy towards the Palestinian economy." United Nations Conference on Trade and Development – UNCTAD (2009).

Khalidi, Raja. *The Arab Economy in Israel: The Dynamics of a Region's Development*. London, Sydney, and New York: Croom Helm, 1988.

Land Research Centre. "Geopolitical situations In Hebron Governorate Palestine," Arab Studies Society (2006).

Larsen, Marianne A. "Beyond binaries: a way forward for comparative education." *Revista Española de Educación Comparada* 6 (2012).

Leuenberger, Christine and Ahmad El-Atrash. "Building a Neoliberal Palestinian State under Closure: The Economic and Spatial Implications of Walls and Barriers." *Economic Sociology* 16, no. 2 (2015): 21-22.

Madi, Amer, Hassan Abu Hassan, Nabil Al-Ghool, Omar Abu Ghosh. "The Impact of Closure and High Food Prices on Performance of Imported Staple Foods and Vegetable and Fruits Market in the oPt." Report for the United Nations World Food Programme (2009).

Maitah, Mansoor, Hodrab, Rami, Malec, Karel, Abu Shanab, Sawsan. "Exploring the Determinants of Consumer Behaviour in West Bank towards Domestic and Imported Dairy Products." *Acta Univ. Agric. Silvic. Mendelianae Brun.* 63, no.1 (2015): 355-368.

Mappery. "West Bank Map." Accessed January 18, 2016. <http://www.mappery.com/map-of/West-Bank-Map>.

Muhammad, Andrew and Ellene Kebede. "The Emergence of an Agro-Energy Sector: Is Agriculture Importing Instability from the Oil Sector?" *Choices* 24, no. 1. Agricultural & Applied Economics Association (2009).

Mukaaya, Eddie. "Dairy sector urged to invest in UHT production." *The new times Rwanda*. December 30, 2008. Accessed January 25, 2016, <http://www.newtimes.co.rw/section/article/2008-12-30/6473>.

Naqib, F. M. "Economic Aspects of the Palestinian–Israeli Conflict: The collapse of the Oslo Accord." *Journal of International Development* 15 (2003): 499–512.

- Naser, Marwan. "Ahead for Developing Visions and Strategies of the Occupied Palestinian Territories (OPT)." BRISMES Annual conference (2012).
- Noy, Chaim. "Sampling Knowledge: The Hermeneutics of Snowball Sampling in Qualitative Research." *International Journal of Social Research Methodology* 11, no. 4 (2008): 327-344.
- OECD – Organization for Economic Co-operation and Development. "Regional Development" (2015). Accessed May 25, 2015, <http://www.oecd.org/gov/regional-policy/regionaldevelopment.htm>.
- Palestinian Central Bureau of Statistics. "Agricultural statistics, 2000/2001" (2002).
- Palmquist, D.L., A. Denise Beaulieu, D.M. Barbano. "Feed and Animal Factors Influencing Milk Fat Composition." *Journal of Dairy Science* 76, no.6 (1993): 1753–1771.
- PCBS. "Agricultural Census 2010, Final Results – Hebron Governorate." (2012).
- PCBS. "Establishment Census 2012" (2015).
- PCBS. "Hebron Governorate Statistical Yearbook" (2011).
- PCBS. "Livestock Survey 2013, Main Results" (2014).
- PCBS. "West Bank Southern Governorates Statistical Yearbook, 2013" (2014).
- Pedersen, Jon, Randall, Sara and Khawaja, Marwan (eds.). "Growing Fast: The Palestinian Population in the West Bank and Gaza Strip." *Fafo-report* 353 (2001).
- Rivlin, Paul. "Trade Potential in the Middle East: Some Optimistic Findings." *Middle East Review of International Affairs* 4, no. 1 (2000): 56-66.
- Roy, Sara. "De-development Revisited: Palestinian Economy and Society since Oslo," *Journal of Palestine Studies* 28, no. 3 (1999): 64-82.
- Samara, Adel. "Globalization, the Palestinian Economy, and the 'Peace Process.'" *Social Justice: a Journal of Crime, Conflict and World Order* 27, no. 4 (2000).
- Sayigh, Yusif A. "The Palestinian Economy under Occupation: Dependency and Pauperization." *Journal of Palestine Studies* 15, no. 4 (1986): 46- 67.
- Seidman, Irving. "Technique isn't everything, but a lot" in *Interviewing as Qualitative Research*. Teachers College Press, 2005.
- Shachar, Gilad and Orestes Vasquez. "Israel Grain and feed Annual." USDA Foreign Agricultural Service (2015).
- TechnoServe Inc. and Oxfam. "A Roadmap for Agribusiness Development in the Occupied Palestinian Territories: An analysis of the Vegetables & Herbs, Dairy, and Sheep & Goats subsectors." UK Department for International Development (DFID) (2011).
- Vaggi, Gianni and Sara Baroud. "Asymmetries and Economic Interaction between Israel and Palestine." (2005).

World Bank. "Sector Note April 2009: West Bank and Gaza - Assessment of Restrictions on Palestinian Water Sector Development" (2009).

World Bank. "West Bank and Gaza: Area C and the future of the Palestinian economy," (2013).

World Bank. "West Bank and Gaza: The Economic Effects of Restricted Access to Land in the West Bank." Washington, DC: The World Bank Group (2008).

World Bank. "World Development Report 2008: Agriculture for Development." (2007).

World Bank. "World Development Report 2014: Risk and Opportunity: Managing Risk for Development" (2014).

Annex 1

Interview guide for farmers

1. What is your name and age? What is your marital status?
2. How many members does your household have (all the people living in the house)?
3. In which year did you (or your parents) start the farm?
4. Who of your family members is involved in the farm work? Do you have employees?
5. How many donums of land do you have? Did you buy more land in the last 5 years?
What is on the land you own? Like olives, vegetables, or food for the sheep/goats/cows? If you grow feed, what kind of feed? For how many months of feeding is it sufficient? Do you sell it to other farmers? What is the percentage of the sheep feed you grow, and of that which you buy? Where do you buy the feed from? What kind of feed is it? How much does it cost per ton/kilo? Access difficulties? Price changes in recent years for land and feed?
6. Does your farm produce any other kind of goods besides dairy? Which? Sold or for family consumption only?
7. How many sheep/goats/cows do you have? Female or male sheep?
8. How many litres of milk does your farm produce per month? How many months per year do you have milk? Do your sheep give birth one time per year, or two times? (lactation periods) Have you tried to increase the litres of milk that you get from the sheep, by breeding, maybe? (explain breeding)
9. What do you do with the milk, do you sell it directly or do you process it first to cheese etc.? Which products do you make from the milk? Who is making the cheese etc.? Where do you sell the milk to? To your neighbours, or the market?
10. Do you or your family contribute in any other form to the family income than by working on the farm? Do you have any other job? (Paid labour on other farms, jobs in the city etc.) Is the farm profitable enough to support your family?
11. Would you like to buy more animals? If so, how many/which ones? If you buy more sheep, do you thus increase the herd size? Or do you sell/lose about the same amount of animals?
12. Do your animals reproduce? How many lambs do you get per year? How many of them do you keep? Do you sell female or male sheep? How many sheep usually stay, per year, of the new ones? At which point are the lambs sold?
13. The wool from the sheep, do you do anything with it, sell it e.g.?

14. Would you like to buy more land in the future? How much? Where? If not, why not?
Do you think it will be easy? Or difficult? (Institutional/informal/economic obstacles)
Would you consider taking a loan for it? What would you do with additional land?
Could you buy land from another farmer, who goes out of business?
15. Have you ever considered building a new stable maybe, somewhere on your land e.g.?
16. Your land, is it somewhere near the settlements? Do you experience any problems regarding settlements, occupation, attacks etc? How do you deal with such risks?
17. Do you have machinery, like a milking machine, one for making butter or yoghurt etc.? Do you want to buy any machinery in the future? Which? Obstacles?
18. Where does the water come from that you give to the animals? Do you have a well on your land? Is there a constant supply of water or are there shortages sometimes? How do you deal with shortages? Do you have a tank to store the water? How much is the water from the municipality per m³? Price changes in recent years?
19. How about medicine and doctor for the animals? Do you have a vet, who comes sometimes to look after the animals? In which cases does the vet from the government come? Do you have to pay for that, when they come by themselves?
20. Is it easy to sell the products, the cheese and laban etc.? Where/ to whom do you sell them? Do you have a constant demand for your products? Is it difficult or easy to find buyers for your milk? Do you have a (long-term) contract with a dairy company? How satisfied are you with the price you receive for the products?
21. Do you get any support from the Hebron municipality, the governorate or the state? Or from NGOs?
22. Do you sometimes get help from other farmers, e.g. when the sheep give birth or so? (Farm help in busy periods, financial support, social support...)
23. What do you think about the importance of farming for the economy of Palestine? Is it good for the development of the region?
24. In your opinion, is the farming sector growing or decreasing in Palestine/Hebron?
25. Do you have any idea how to encourage young people to work in the farming sector?
What about those young people, who inherit it from their parents/grandparents, do they stay in the business?
26. How does your experience of being a farmer differ from that of your father/grandfather?
27. What would you say is the main difficulty in farming for you?
28. What is the most satisfying aspect of working with the sheep, what do you like most?

29. Are there any other items you consider important for me to learn about that I have not mentioned?
30. Recommendations to whom I should talk?

Interview guide for factory owners

1. When did you or the previous owner/father start this factory?
2. What obstacles did you encounter in building this factory? – license, land, building permission etc.
3. How many people work in your factory?
4. Do you have your own stables? How many? Where in the West Bank? How many cows? Only cows or also goats or sheep? Why/ why not?
5. How many litres of milk does your farm produce? (What is the monthly average amount of milk (l) per animal sort that your farm produces?)
6. Do you import any feed, milk products or ingredients you use in your products from abroad/Israel/Jordan?
7. How easy or difficult is it for you to have a steady flow of all the inputs you need for your production line?
8. How satisfied are you with the input prices? Have they changed during the last 5 years?
9. Would you say that your factory has increased during the last two years in size, production output, labour force, profit...?
10. To whom/where do you sell your products? Do you also export abroad?
11. What are your plans for the future with this company? Would you like to increase its size/hire more labour/buy more cows/ have more stables?
12. Do you expect any obstacles for this? Which ones?
13. Do you think there will be more factories like this one in the future?
14. Do you get support from the government in any way? Building license, money...
15. What is your general opinion on farming in Palestine? Is there potential for growth? For which kind of farmers?

Interview questions for water department of Hebron municipality

1. What is the price of water per m³ in Hebron (city)
 - if delivered by network
 - different price for farmers
 - if delivered by tank
 - different price for farmers
2. People who are not connected to the network, can they choose how often to get a tank?
3. Is there a maximum amount of water they get per month?
4. Have the prices for water changed during the last 5 years?
5. Is the water price the same for the whole governorate of Hebron? How do prices differ from other parts of the West Bank? If differ, reasons?
6. Which area does the network cover? Is it in all municipalities/villages of the Hebron governorate?
7. Is the municipality or governorate working on extending the network at the moment? To which areas?
8. Regarding water (distribution), do you work together with NGO's/UN/US Aid?
9. Where do you get the water from? Springs? Israel?
10. Do you have shortages of water sometimes? When? What are the reasons?
11. Do you work on reducing those shortages? How?

Interview questions for office representative Ministry of Agriculture

1. How do you define farmers?
2. How many sheep, goats and cows are there in the Hebron governorate?
3. Which support and/or extension services do you offer to farmers?
4. Which animal diseases occur in the Palestinian territories and against which are animals vaccinated?
5. Do farmers have to pay for vaccinations?
6. When did you start using ear clips for animals and for which reasons?
7. Aside from diseases, are there any other (health) issues affecting animals?