The global food system continues to be threatened by climate change, environmental degradation, food insecurity, and hidden hunger. Consequently, both ecosystem- and human health issues will continue or worsen if no sustainable strategies are adopted. In the search for food system transformation, organic is a promising approach to achieve sustainable food systems.

From a food systems perspective organic actors share a value-based ethical vision and follow codified principles that lead to sustainable outcomes. Organic principles are codified in international and national standards and regulations. As a typical cradle-to-cradle approach, organic farming corresponds to the idea of a green technology.

Through documenting real-world examples of organic food system cases worldwide, eleven cases have been selected based on predetermined criteria. This book documents real local food system examples around the globe, namely South-West region, Nigeria; Manyara region, Tanzania; Tamil Nadu, India; Bislig City, the Philippines; Goesan County, South Korea; Mouans-Sartoux, France; Södertälje, Sweden; Cilento, Italy; Quito, Ecuador; Pennsylvania, USA; Wellington, New Zealand.
Tooba Jamil, Lilliana Stefanovic, Sebastian Kretschmer (eds.)

Organic Food System Cases Around The World – A Documentation Project
Dedication to Prof. Dr. Johannes Kahl †

This publication is dedicated to late Prof. Dr. Johannes Kahl, former head of the Department of Organic Food Quality and Food Culture of the University of Kassel, who has been the initiator and inspirer of the case study project.
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<tbody>
<tr>
<td>AB</td>
<td>Agriculture Biologique</td>
</tr>
<tr>
<td>AFAB</td>
<td>French Association of Organic farming</td>
</tr>
<tr>
<td>Agence BIO</td>
<td>French Agency for Development and Promotion of Organic Farming</td>
</tr>
<tr>
<td>AGRUPAR</td>
<td>Proyecto de Agricultura Urbana Participativa</td>
</tr>
<tr>
<td>AIAB</td>
<td>Italian Association for Organic Agriculture</td>
</tr>
<tr>
<td>ALGOA</td>
<td>Asian Local Governments for Organic Agriculture</td>
</tr>
<tr>
<td>AMAP</td>
<td>Association pour le Maintien de l'Agriculture Paysanne</td>
</tr>
<tr>
<td>APCA</td>
<td>Assemblée Permanente des Chambres d'Agriculture/ Permanent Assembly of Chambers of Agriculture</td>
</tr>
<tr>
<td>ARF</td>
<td>Alternativodlarnas Riksförbund/ National Association of Alternative Farmers</td>
</tr>
<tr>
<td>ATA</td>
<td>Agricultural Transformation Agenda</td>
</tr>
<tr>
<td>BERAS</td>
<td>Building Ecological Regenerative Agriculture and Societies</td>
</tr>
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<td>BISCOCOMACO</td>
<td>Bislig City Organic Consolidators and Marketing Cooperative</td>
</tr>
<tr>
<td>CBARES</td>
<td>Chungcheongbuk-do Agricultural Research and Extension Services</td>
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<tr>
<td>CCAS</td>
<td>Centre Communal d'Action Sociale/ Municipal Social Action Center</td>
</tr>
<tr>
<td>CCF</td>
<td>Cahier de Charges Français</td>
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<tr>
<td>CCFB</td>
<td>Chester County Food Bank</td>
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<tr>
<td>COAFC</td>
<td>City Organic Agri-Fishery Complex</td>
</tr>
<tr>
<td>COBS</td>
<td>Community Organic Box Scheme</td>
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<td>Acronym</td>
<td>Full Form</td>
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<tr>
<td>CRAFT</td>
<td>Collaboration Regional Alliance for Farmers Training</td>
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<td>CREA</td>
<td>Council for Agricultural Research and Agricultural Economic Analysis</td>
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<tr>
<td>CSA</td>
<td>Community Supported Agriculture</td>
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<tr>
<td>DA</td>
<td>Bislig City’s Department of Agriculture</td>
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<tr>
<td>DGA</td>
<td>Dairy Grazing Apprenticeship</td>
</tr>
<tr>
<td>DU</td>
<td>Diplôme Universitaire/University diploma</td>
</tr>
<tr>
<td>DVA</td>
<td>Diversified Vegetable Apprenticeship</td>
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<tr>
<td>EAOPS</td>
<td>East African Organic Product Standards</td>
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<tr>
<td>EOAII</td>
<td>Ecological Agricultural Project Initiative</td>
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<tr>
<td>ERA</td>
<td>Ecological Regenerative Agriculture</td>
</tr>
<tr>
<td>ERDF</td>
<td>European Regional Development Fund</td>
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<td>EU</td>
<td>European Union</td>
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<td>Euro-EducATES</td>
<td>Teaching Agroecology in the Transitory Period and its Consequences for the Agricultural Knowledge Systems</td>
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<tr>
<td>FAAP</td>
<td>Familles A l’Alimentation Positive/ The Challenge</td>
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<td>FAO</td>
<td>Food and Agriculture Organization</td>
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<tr>
<td>FARA</td>
<td>Forum for Agricultural Research in Africa</td>
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<td>FCS</td>
<td>Foster Children’s Scheme</td>
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<td>FiBL</td>
<td>Research Institute of Organic Agriculture</td>
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<tr>
<td>FMARD</td>
<td>Federal Ministry of Agriculture and Rural Development</td>
</tr>
<tr>
<td>FNAB</td>
<td>Federation Nationale d’Agriculture Biologique/ National Federation of Organic Agriculture</td>
</tr>
<tr>
<td>FS</td>
<td>Food System</td>
</tr>
<tr>
<td>FUNAAB</td>
<td>Federal University of Agriculture, Abeokuta</td>
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</tbody>
</table>
GABO  Groupement d'Agriculture Biologique de l'Ouest
GAP  Good Agricultural Practice
GDP  Gross Domestic Product
GEDD  Gestion de l'Environnement et Développement Durable/ Management of the environment and sustainable development
GHGs  Greenhouse Gases
GMO  Genetically Modified Organism
GPP  Green Public Procurement
IDEASS  Innovation for Development and South-South Cooperation
IFOAM  International Federation of Organic Agriculture Movements
IMF  International Monetary Fund
IN.N.E.R  International Network of Eco-Regions
INAO  Institut national de l'origine et de la qualité/ National Institute of Origin and Quality
INFORMAS  International Network for Food and Obesity/NCFs Research, Monitoring and Action Support
INOAGEC  Institute of Organic Agriculture and Green Economy
INRA  Institut National de la Recherche Agronomique/National Institute of Agricultural Research
IPCC  Intergovernmental Panel on Climate Change
ISA  Institute for Solidarity in Asia
ISOFAR  International Society of Organic Agriculture Research
ISS  Inba Seva Sangam
ITAB     Technical Institute of Organic Farming
JVS      Les Jardins de la Valée de la Siagne/ The Gardens of the Siagne Valley
KOSIS    Korean Statistical Information Service
KREI     Korea Rural Economic Institute
KTH      Royal Institute of Technology
KWFs     Kimberton Whole Foods
LA       Local Administration
LASU     Lagos State University
LGA      Local Government Area
LGU      Local Government Unit
LOACC    League of Organic Agriculture for Component Cities
LOAMC-Ph League of Organic Agriculture for the Municipalities and Cities in the Philippines
LOAM-Ph  League of Organic Agriculture for Municipalities in the Philippines
LVS      Laurel Valley Soils
MAFISCO  Mangagoy Fishermen Multi-purpose Cooperative
MASIPAG  Magsasaka at Siyentipiko para sa Pag-unlad ng Agrikultura
MCE      La Maison du Commerce Equitable/ The Fair Trade Centre
MEAD     Maison d’Education à l’Alimentation Durable/ Centre for Sustainable Food Education
MiPAAF   Ministero delle Politiche Agricole, Alimentari e Forestali/ Ministry of Agricultural, Food and Forestry Policies
MOFI     Manyara Organic Farming Initiative
MPI  Ministry of Primary Industries
N&P  Nature et Progrès
NAPQMS  National Agricultural Products Quality Management Service
NCC  National Coordinating Committee
NCD  Non-Communicable Diseases
NGO  Non-Governmental Organizations
NICERT  Nigeria Certification body
NNR  Nordic Nutrient Recommendations
NOAN  Association of Organic Agriculture Practitioners of Nigeria
NOAP  National Organic Action Program
NOP  National Organic Program
NOS  National Organic Standards
NOSB  National Organic Standard Board
NSAC  National Sustainable Agriculture Coalition
OAPTIN  Organic Agriculture Project in Tertiary Institutions in Nigeria
OCA  Organic Consumers Association
OECD  Organization for Economic Co-operation and Development
OFNZ  OrganicFarmNZ
OFPA  Organic Foods Production Act
OFS  Organic Food System
OFSP  Organic Food System Program
OMRI  Organic Materials Review Institute
OTA  Organic Trade Association
PASA  Pennsylvania Association of Sustainable Agriculture
xx
<table>
<thead>
<tr>
<th>Abbreviation</th>
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<tbody>
<tr>
<td>PELUM</td>
<td>Participatory Ecological Land Use Management Tanzania</td>
</tr>
<tr>
<td>PGS</td>
<td>Participatory Guarantee System</td>
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<tr>
<td>PNCVDA</td>
<td>Valle di Diano e Alburni/ <em>National Park of Cilento</em></td>
</tr>
<tr>
<td>PNNS</td>
<td>Programme National Nutrition Santé/ <em>National Programme Nutrition Health</em></td>
</tr>
<tr>
<td>PSA</td>
<td>Philippines Statistic Authority</td>
</tr>
<tr>
<td>QMD</td>
<td>Quito Metropolitan District</td>
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<tr>
<td>SARE</td>
<td>Sustainable Agriculture Research and Education</td>
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<td>SAWES</td>
<td>SAmenWERking Sevapur</td>
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<td>SDGs</td>
<td>Sustainable Development Goals</td>
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<td>SFS</td>
<td>Sustainable Food System</td>
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<td>SFSP</td>
<td>Sustainable Food System Program</td>
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<td>SHA</td>
<td>Soil and Health Association</td>
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<td>SHGs</td>
<td>Self Help Groups</td>
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<td>SIDA</td>
<td>Swedish International Development Cooperation Agency</td>
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<td>SINAB</td>
<td>National Information System on Organic Agriculture</td>
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<td>SME</td>
<td>Subject Matter Experts</td>
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<td>SMU</td>
<td>Saemaul Undong/ New Village Movement</td>
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<td>SOFIA</td>
<td>Small Farmers Empowerment Programme</td>
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<td>TABO</td>
<td>Organic Food Market</td>
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<td>TanCert</td>
<td>Tanzania Organic Certification Association</td>
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<tr>
<td>TCCIA</td>
<td>Tanzania Chamber of Commerce, Industry and Agriculture</td>
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<tr>
<td>TPC</td>
<td>Third-Party Certification</td>
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<tr>
<td>UAA</td>
<td>Usable Agricultural Area</td>
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<tr>
<td>UN</td>
<td>United Nations</td>
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<td>Acronym</td>
<td>Full Name</td>
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<tr>
<td>UN-10YFP</td>
<td>United Nations 10 Year Framework of Programs</td>
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<tr>
<td>UNESCO</td>
<td>United Nations Educational, Scientific and Cultural Organization</td>
</tr>
<tr>
<td>URBACT</td>
<td>Urban Development Network Programme</td>
</tr>
<tr>
<td>USDA</td>
<td>United States Department of Agriculture</td>
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<tr>
<td>WDC</td>
<td>White Dog Cafe</td>
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<tr>
<td>WELP</td>
<td>Work, Earn and Learn Programme</td>
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<td>WTO</td>
<td>World Trade Organizations</td>
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<td>WWC</td>
<td>Weavers Way Cooperativ</td>
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1. Overview
(Tooba Jamil)

The global food system (FS) continues to be threatened by climate change, environmental erosion, food insecurity, and hidden hunger (Godfray et al., 2010; Hendrickson & Heffernan, 2002; Nelson et al., 2010). Consequently, environmental degradation and human health issues will continue or worsen if no sustainable strategies are adopted (Gladek et al., 2016; Horrigan et al., 2002; Liu et al., 2015; Risku-Norja & Mikkola, 2009). The international community and scientists have adverted the crucial need to address these challenges by providing equal and sustained food security without surpassing planetary boundaries. It is essential to rethink and transform the whole FS with sustainability as a beacon (FAO, 2017; Meybeck & Redfern, 2016; Moomaw et al., 2012).

On September 25-27, 2015, the United Nations (UN) member countries came up with a UN Agenda 2030 for Sustainable Development, enacted in January 2016 to be achieved by 2030 (Palmer, 2015). This schedule is an action plan for people, planet, and prosperity addressed through seventeen essential elements. The essential element of the Agenda are the 17 Sustainable Development Goals (SDGs) that are subdivided into 169 targets in line with the new universal agenda. The SDGs call for a significant transformation in agriculture and FSs to end hunger, achieve food security, and improve nutrition by 2030. This call is evidenced in the SDGs 2 and 12, namely “end hunger, achieve food security, improve nutrition, and promote sustainable agriculture” and “ensure sustainable consumption and production patterns”, respectively. The global FS should be reshaped to be more productive, more inclusive of poor and marginalized populations, environmentally
sustainable and resilient, and able to deliver healthy and nutritious diets to all (FAO, 2018a).

In the search for a concrete pathway to FS transformation, organic seems to offer a promising approach to achieve Sustainable Food Systems (SFSs). Organic principles are codified in international and national standards and regulations (Niggli, 2015). The standards are mandatory for organic farms during processing and distribution to protect the misuse of organic food production, processing, and distribution (Willer & Lernoud, 2015). OFSs can be considered as an alternative model (Strassner et al., 2015; Kahl et al., 2016) as they offer “an alternative approach towards sustainability” (Schader et al., 2014).

Through the assessment and evaluation of the Organic Food System (OFS), various analytical or managerial steps can be taken. We can intervene within the entire OFS to address the SDGs for that organization, such as the International Federation of Organic Agriculture Movements (IFOAM). According to Grant (2015, p. 89), only “through systems approaches, building new partnerships and collaborating across boundaries will be able to handle multifactorial problems and design interventions that ensure positive long-term impacts.” In this regard, the Organic Food System Program (OFSP) is a platform that has more than 80 partners around the world from multidisciplinary fields and is willing to see organic food and farming through a systems lens. The OFSP is working as one of the Core Initiatives of the United Nation 10 Year Framework of Programs (UN-10YFP) for the Sustainable Food Systems Program (SFSP) on sustainable consumption and production. The UN-10YFP-SFSP directly addresses the goal number twelve of the SDGs, namely responsible consumption and production. To achieve UN-10YFP-SFSP expectations, the OFSP has promised eight deliverables. Deliverable six has a core focus to gather examples and case studies of OFSs under varied conditions worldwide. As Kahl et al. 2
(2016) mentioned, examples need to be collected, analyzed, and documented (these steps will turn examples into case studies) to capture an entire picture of the OFS. It is necessary to report the real-world examples of OFS worldwide to establish sustainable production and consumption patterns (OFSP, 2019). This book intends to document the OFS cases describing a transformation over time towards attaining sustainability. The book documents the real examples around the globe, namely South-West region, Nigeria; Manyara region, Tanzania; Tamil Nadu, India; Bislig City, the Philippines; Goesan County, South Korea; Mouans-Sartoux, France; Södertälje, Sweden; Cilento, Italy; Quito, Ecuador; Pennsylvania, USA; Wellington, New Zealand. The location of the case studies is depicted in Figures 1.1 and 1.2.

Figure 1.1: Case Study locations in the Americas and Europe
Source: Own figure
Figure 1.2: Case Study locations in Africa, Asia, and Oceania
Source: Own figure
2. Methodology  
(Lilliana Stefanovic and Tooba Jamil)

2.1 Research Methodology

For documenting the real-world examples of OFS cases worldwide, eleven case studies have been selected based on the predetermined criteria. For instance, food is an integral part of our lifestyle, since every individual relies on the FS to put food on the table (McKenzie, 2016). Furthermore, the primary purpose of the FS is to feed people. Therefore, the OFS should include both production and consumption of food in organic quality. Furthermore, since organic food and farming are essential components of the OFS, organic quality has been an principal boundary for the selection of case studies. The other boundaries include geographical (in terms of geographic location), temporal (in terms of the developmental stages of individual cases under study), jurisdictional (in terms of administrative-regulatory affiliation). Moreover, in an OFS the actors share missioned values in the form of codified principles, which makes the OFS distinguishable from other FSs (Strassner et al. 2015; Kahl 2015). Therefore, organic actors follow the codified principles, which means that the organic guarantee system is another prerequisite for selecting OFS case studies. Finally, to document the OFS examples, the information should be available and accessible. Lack of information accessibility would hinder the process of documentation. Hence, availability and accessibility of information about a case study was considered another important selection criterion.

By studying the literature that attempts to analyze or document specific examples, or cases of various FSs, it becomes apparent that a case study methodology is the fitting approach. Therefore, the following section describes this approach in more detail.
2.2 Case Study Methodology

Case study research is an "empirical inquiry that investigates a contemporary phenomenon in depth and within its real-life context” intended to provide a level of detail and understanding of the case (Yin, 2009). On the other hand, a case study is described by Aaker et al. (2013) as a "comprehensive description and analysis of a single situation." The cases under study are specific, unique representing a bounded system (Stake, 2008). The case study describes the real-life context of the case in which it occurs (Yin, 2009).

The case study in general may be of two types: a single-case study and a multiple-case study (Yin, 2014). A single-case study can be either holistic or embedded (ibid.). The holistic case study design investigates the case as one unit. The embedded single case study design has more than one unit of analysis (ibid.).

Zainal (2007) explains that in a case study research, the researcher seeks to explore, understand and present the participants’ perspectives and also monitor them in their natural setting. Likewise, the single-case study methodology is used to describe unique cases and allows the researcher to examine data within a specific context since each case study has specific and unique attributes (ibid.). In the present project, each OFS case is treated as a single unit, so a single-case study methodology is applied, although the results obtained from single-case study design cannot be used as a generalization for other cases (ibid.). According to Yin (2014), case studies can also be classified by type, namely explanatory, exploratory and descriptive cases. The case studies presented in this edition are a mixture of explanatory and descriptive types. Explanatory because they aimed to investigate a phenomenon, why and how some conditions happened, and
descriptive because they describe the real-life context of the case in which it occurs (Yin, 2009).

For the present OFS cases documentation, a revelatory case as a rationale for using a single-case study has been considered, which allows for studying and observing phenomena previously unreachable to the scientific inquiry (Yin, 2014).

Finally, the single-case study approach enables an extensive study of different steps that make up an OFS giving a more compelling and robust insight into the operations of the entire system (Crowe et al., 2011; Gustafsson, 2017; Yin, 2009). An inductive qualitative research design was chosen because it permitted the in-depth study of the case (Yin, 2011).

To explore and document the OFS case studies, a single-case study approach has been used in each of the documented cases, with a combination of explanatory and descriptive case study types. The approach employed qualitative research methods aiming to inductively describe the OFS using both secondary and primary data (Elo & Kyngas, 2008). The secondary data collection was performed through the analysis of existing literature, reports and internal cases’ records. The primary data was collected using qualitative research methods, namely interviews and observations (Yin, 2011). The qualitative study was conducted mainly based on face-to-face semi-structured interviews as well as exploratory interview via Skype (Yin, 2011). The exploratory interview was conducted with an informant (in some cases more than one) of the case under study and aimed at investigating the developmental stages of a given OFS, its main goals and objectives as well as the key actors involved in the investigated system.

Since the documentation of the OFS case studies aims to contribute to the deliverables of the OFSP, namely to collect and analyze case studies around the world, consistency of methodological standards
was essential. Therefore, on February 8, 2019, a training session was organized for the master students at the Department of Organic Food Quality and Food Culture of the University of Kassel, Germany. They were familiarized with the project’s aims and general methodology. Furthermore, a uniform interview guide to be used for the interviews has been provided. This was done to ensure the uniformity of documentation process. As an additional aid in this regard, a checklist for documenting the case studies has been distributed, which included all the research objectives of the study. The following eleven case studies have hence been prepared as individual master thesis projects by students attending the Master Program “International Food Business and Consumer Studies” at Kassel University.
3. Documentation of the Organic Food System Case in the South-West Region of Nigeria (Oluwatimilehin Sarah Ajekola)

3.1 Background Information of the Region

3.1.1 Geographical Description
The Federal Republic of Nigeria is geographically located on the Gulf of Guinea in West Africa. Nigeria is bounded to the West by Benin, to the East by Cameroon and Niger, and Chad to the North-East and North-West. Nigeria occupies a landmass of about 923,768 square kilometers, including 13,000 square kilometers of water bodies. Nigeria's climatic condition is diverse, with the northern region being arid and equatorial in the central and in the south (CIA, 2019; LOC, 2008).

There are various ecological zones in Nigeria, and they include the semi-arid Sudan zone, Guinea Savannah, and Derived Savannah zone, Forest and Mangrove zone (Matemilola & Elegbede, 2017). The vegetation of the South-West region of Nigeria comprises freshwater swamps and mangrove forests (Faleyimu et al., 2013).

The climate in Nigeria's South-West region is tropical, and it has two seasons, the wet season and the dry season. The South-West monsoon wind from the Atlantic Ocean is associated with the wet season, while the North-East trade wind, lasting from December to February, is associated with the Harmattan period (Faleyimu et al., 2013; Ikemeh, 2013). The average temperature ranges from 30 °C to 34 °C, while the annual rainfall is between 500 and 3550 mm (LOC, 2008).
3.1.2 Demographic Information

Nigeria's population is estimated to be 200 million, making the country the most populous in Africa and the seventh most populous in the world (World Population Review, 2019; CIA, 2019). The country is estimated to have over 300 million people by 2050, making it the fourth populous country in the world (CIA, 2019).

Nigeria has the lowest life expectancy in West Africa, estimated to be 55.4 years; for men, it is 53.7 years and 55.4 years for women. Life expectancy is relatively low due to the country's health issues (CIA, 2019; World Population Review). According to the (CIA 2019), the country's population's median age is 18.3 years, indicating that the country has a young population.
Nigeria is an agrarian state, and the agricultural sector employs over 70% of the active population (Matemilola & Elegbede, 2017). The country is comprised of thirty-six states, including the capital Abuja. Nigeria is grouped into six geopolitical zones: South-West, South-East, North-Central, North-East, North-West, and the South-South. Figure 3.1 above is Nigeria's map, showing the different geopolitical zones and the states in each zone. The exploration of oil is carried out mostly in the South. This limits the agricultural activities carried out in the region. The South-West and South-East have better weather conditions than the North, and there is greater participation in agriculture. Interest in agriculture is currently declining due to most of the region's populace working in other employment opportunities outside of the agricultural sector (Matemilola & Elegbede, 2017).

The South-West region was studied for this project and consists of six states with their demographic information.

**Ekiti State** was created on October 1, 1996, from the Old Ondo, and it has a land area of 6,353 square kilometers. To the South is Kwara and Kogi State; it lies to the East of Osun State and is bounded by Ondo State to the East and South (My destination Nigeria, 2019). Ado-Ekiti is the State's capital, and it comprises 16 local government areas (LGAs). Agriculture is the residents' primary occupation; food and cash crops such as yam, cassava, maize, cocoa, kola nut, plantain are produced (My Guide Nigeria, 2019). Mining of solid minerals, trading and tourism are also economic activities of the State. Ekiti State is referred to as the 'Fountain of Knowledge'. It has a reputation for producing many academicians and professors (My destination Nigeria, 2019).

**Lagos State** is popularly referred to as the Centre of Excellence with 3,474 square kilometers. The capital of Lagos is Ikeja, and the State has 57 LGAs. The State was created on May 27, 1967, and it
was the former capital of Nigeria before the capital was moved to Abuja in 1976 (My destination Nigeria, 2019). Lagos is the leading port in Nigeria and is one of the busiest and largest in Africa. The State consists of four islands: Lagos Island, Victoria Island, Ikoyi, and Iddo (ibid). Lagos is a multi-ethnic and multi-cultural state, although it is predominantly Yoruba speaking. Also, Lagos is popularly referred to as Nigeria's commercial capital (My Guide Nigeria, 2019). Crops like maize, cassava, coconut, cowpea, and vegetables are grown in various LGAs of the State (Federal Republic of Nigeria, 2019).

**Ogun State** is popularly called the Gateway State because of its crucial position as the link by road, rail, air, and sea to other parts of the country. It was created on February 3, 1976 (My Guide Nigeria, 2019) and had 21 LGAs with the state capital in Abeokuta. The landmass is up to 16,409 square kilometers. Ogun State is bordered to the South by Lagos and the Atlantic Ocean, to the North by Oyo and the Osun States, to the East by Ondo State, and to the West by the Republic of Benin (My destination Nigeria, 2019). Agriculture is the State's primary occupation, with 80% of the land used for arable production. The State produces cash crops (kola nut, cocoa, rubber, palm oil) and food crops (rice, maize, yam, cassava) and is the country's primary producer. Solid minerals are also found in the State, while tourist centers like the Olumo Rock, Oyan Dam, and Iwopin Boat Regatta serve as revenue sources for the State.

**Ondo State** is the country's sunshine state formed from the former Western State on February 3, 1976, with Akure as its capital and has 19 LGAs (My Guide Nigeria, 2019). The land area is 15,500 square kilometers (6,000 square miles), and the State is bordered to the North by Ekiti and Kogi States, East by Edo State, and the West by Oyo Ogun, and in the South by the Atlantic Ocean. The State's occupation is farming, trading, crafting, fishing, and public service (My destination Nigeria, 2019).
Osun State has its capital as Osogbo; the State was formed on August 27, 1991, from Oyo State and comprised 30 LGAs (My Guide Nigeria, 2019). The land area is approximately 14,875 square kilometers. The State bounds Kwara to the North, Ekiti and Ondo State to the East, Ogun State to the South, and Oyo State to the West. The State is popularly called the State of the Living Spring and has an agricultural economic profile. The State is blessed with many streams and rivers, which serve as a tourist attraction and fulfills the State's water needs.

The Pacesetter (Oyo State) was created on February 3, 1976, with its capital in Ibadan. 33 LGAs are in this State, the land area is 28,454 square kilometers, Ogun State is situated in the South, and partly to the West, Kwara State to the North is bounded by Osun State to the East. Oyo State is the third most populous area in Nigeria (My Guide Nigeria, 2019). The State's climatic condition favors crop cultivation such as maize, cassava, yam, and many others (My destination Nigeria, 2019).

3.1.3 Economy

Nigeria has the largest Economy in sub-Saharan Africa, relying heavily on oil as the revenue source (Akinkunmi, 2017). The Economy is regarded as a middle-income, mixed economy, and emerging market with expanding financial, telecommunications, and entertainment sector (Edo & Ikelegbe, 2014). The dependence on crude oil for so long had its benefits years ago during military rule and into the early 2000s. The world is evolving and reducing the use of petroleum and gasoline. This evolution has caused specific structural deficits in the Nigerian Economy, the largest buyer of crude oil for the past five years, leading to the fall in foreign reserves and affecting its currency and foreign exchange (ibid.).
In 1961, the Nigerian agricultural sector accounted for the total global exportation of 42% shelled groundnuts, 27% palm oil, and 18% cocoa and was also the largest exporter of cotton. Agriculture contributed significantly to the country's gross domestic product (GDP), but all these are now past due to the sector's neglect (Nwankpa, 2017). Figure 3.2 below shows the GDP of the Nigerian Economy in the last quarter of 2017 and indicates that the agriculture sector was the major contributor to the country's Economy.

According to Suberu et al. (2015), reliance on a single economy has many effects on the country, but diversification helps prevent economic shock. Two sectors were suggested for diversification; agriculture and mining, and the present government has emphasized improving the agricultural sector. Nigeria is also an emerging market whose expansion depends on its financial service, agriculture sector, communications technology, and the entertainment industry (ibid.). The Economy of Nigeria has experienced various changes before its independence. During the colonial period, the Economy was driven and sustained by agriculture and trade (Akinkunmi, 2017). The global financial crisis in 2008-2009 led to diversification into agriculture, telecommunications, and the services sector to help boost the Economy (CIA, 2019).

According to Oyakhilomen and Zibah (2014), there has been no correlation between economic growth and poverty reduction in Nigeria. The data are stating that the rate of poverty increased from 54% in 2004 to 69% in 2010. It was suggested that in reducing poverty and achieving economic growth, the agricultural sector must be prioritized. Many of the country's populace, especially rural households, depend directly or indirectly on agriculture.
3.1.4 Agricultural History in Nigeria

Before discovering oil, agriculture was the mainstay of Nigeria’s economy, and agriculture contributed to 63.49% of the GDP. Agriculture serves as the source for funding its first national development plan and its independence. The GDP contribution declined progressively from 63% in 1960 to 34% in 1988 (Nwankpa, 2017).

The country's arable land is up to 98.3 million hectares, consisting of 72.2 million cultivatable hectares. Still, only about 34.2 million hectares are cultivated, and 27.1 million are non-cultivable land (Nwankpa, 2017). Nigeria was the leading exporter of certain tree crops (Uma et al., 2014) like cocoa, rubber, oil palm, and the

![GDP by Sector](image-url)

**Figure 3.2: GDP of Nigeria in 2017**
Source: Adapted from Nigeria Data Portal, 2019.
proceeds from these crops were used to create the premier universities (the University of Ibadan, University of Lagos, Obafemi Awolowo University in Ife, University of Nigeria Nsukka and Ahmadu Bello University) of the country (Iyagba & Amesi, 2016). After discovering oil in 1968 and the oil boom in 1970, there has been a significant decline in the agricultural sector and agricultural produce exportation. Instead, Nigeria started importing staple foods resulting in massive pressure on foreign reserves (Nwankpa, 2017). The discovery of oil also led to an influx of a young, rural populace to the urban centers searching for better livelihoods (Uma et al., 2014), continuing harm to the agricultural sector.

The agricultural sector accounts for over 26.8% of the GDP. It provides employment for about two-thirds of the populace, the industry still suffers from various setbacks and has not lived up to its true potential, mostly because of neglect of the sector. Over the years, investment in the industry has been low and basic amenities are insufficient, such as a poor road network, which hinders the transportation of produce from the rural areas to the urban market. The absence of storage amenities contributes to a high level of production waste. These factors and low governmental policies have affected the sector's growth and its inability to cater to the growing population, leading to more importation of food (Nwankpa, 2017; Suberu et al., 2015; Uma et al., 2014).

Nigeria is blessed with fertile soil and should be able to feed its growing population. Still, the result of insufficient food production has led to the subsequent increase in food import bills and the price of food and, in turn, poverty and hunger (Uma et al., 2014).

Table 3.1 below illustrates various programs carried out at different eras to help improve the agricultural sector.
<table>
<thead>
<tr>
<th>Year</th>
<th>Agricultural program</th>
<th>Goals of the program</th>
<th>Government administration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early-mid 1950</td>
<td>Farm settlement</td>
<td>To increase commodity output; Create employment for young school leavers</td>
<td>During the colonial era</td>
</tr>
<tr>
<td>1972</td>
<td>Agricultural Development Projects under which two program were set up: National Accelerated food production program; Nigeria Agricultural and cooperative bank</td>
<td>To organize farmers into productive agriculture by providing modern inputs; Organize workshops for farmers</td>
<td>General Yakubu Gowon</td>
</tr>
<tr>
<td>1976</td>
<td>Operation Feed the Nation; Agricultural Credit Guarantee Scheme Fund</td>
<td>To increase food production in the country; Encourage domestic food production</td>
<td>General Olusegun Obasanjo</td>
</tr>
<tr>
<td>1979</td>
<td>Green Revolution Program</td>
<td>To reduce food importation and also boost crop and fiber production; Encourage all Nigerians involvement in agriculture for commercial and personal consumption</td>
<td>Alhaji Shehu Shagari</td>
</tr>
<tr>
<td>Year</td>
<td>Program Description</td>
<td>Goals</td>
<td>Leader</td>
</tr>
<tr>
<td>----------</td>
<td>--------------------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------</td>
<td>-------------------------</td>
</tr>
<tr>
<td>1983</td>
<td>Back-to-Land program</td>
<td>To improve food availability for the population; Create employment opportunities; Reduce poverty</td>
<td>General Muhammadu Buhari</td>
</tr>
<tr>
<td>1986-1992</td>
<td>Structural Adjustment Programme that includes: Integrated Rural Development; National Fadama Development Project; National Agricultural Land Development Authority</td>
<td>To tackle poverty; Diversification of exports; Promote low-cost irrigation system; Strategic support for land development</td>
<td>General Ibrahim Babangida</td>
</tr>
<tr>
<td>1999-2007</td>
<td>National Economic Empowerment Development Strategy</td>
<td>To restructure the agricultural extension institution; Development of agricultural technology and natural resources management</td>
<td>Chief Olusegun Obasanjo</td>
</tr>
<tr>
<td>2007-2010</td>
<td>Seven-Point Agenda</td>
<td>To enhance agricultural production; Strengthen agribusiness</td>
<td>Alhaji Umaru Musa Yar’adua</td>
</tr>
<tr>
<td>2010-2015</td>
<td>Agricultural Transformation Agenda (ATA)</td>
<td>To add value to agricultural produce; Eliminate corruption in seeds and fertilizer</td>
<td>Goodluck Ebele Jonathan</td>
</tr>
</tbody>
</table>
sector; Encourage rural economic growth

| 2015-2016 | Growth Enhancement Support Scheme, a subsidiary program under ATA; Anchor Borrowers Program | To encourage the development of domestic value chain; Reduce poverty amidst citizens | Alhaji Muhammadu Buhari |

Source: Adapted from Matemilola and Elegbede (2017); Uma et al. (2014); Yusuf et al. (2019)

Several government policies and programs have improved the country's agricultural sector, such as subsidized fertilizers and individual credit facilities. Due to widespread corruption in the Nigerian system, most of these subsidized agrarian inputs are not given to farmers but are sold or hoarded by those in charge (Nwankpa, 2017; Yusuf et al., 2019). Some of these agricultural program goals illustrated in Table 3.1 are not met due to funding, implementation issues, or consistency (new government, new policies) (Uma et al., 2014; Yusuf et al., 2019).

According to a report by the Federal Ministry of Agriculture and Rural Development (FMARD), various challenges affect Nigeria's agricultural sector. Because of a lack of policy framework, policies put forth by different administrations that are not followed through by their successors result in a lack of policy accountability and transparency. Underdevelopment in agricultural technology could improve productivity. Deficient commitment from political offices at the federal and state level, deficiencies in infrastructural facilities, and poor access to financial services by farmers discourage productivity (FMARD, 2016).
3.1.5 Food Environment

According to the Global Panel on Agriculture and Food Systems for Nutrition (2014), the food environment is where different kinds are determining the dietary pattern. Creating an enhanced environment where investment from the private sector into agriculture is supported is one of the goals of the country's current agricultural policy (ibid.).

All the farmers interviewed sell their products at the local market or in the community. Some farmers sell to processors who also serve as retailers and supply institutions like hotels and retail stores. One of the stakeholders interviewed, a part-owner of a restaurant, mentioned that some of the farm produce is used in the restaurant. In one of the farms visited, inputs such as seeds like kale, sour, and sweetsop are sourced locally and internationally. There is particular demand from established consumers that are not within the country. The retailers liaise with farmers within and outside their states of residence. Businesses package products such as tomatoes, vegetables, palm oil, and eggs to the final consumers. The store supplies both local organic products and products imported from other countries.

Mgbenka et al. (2015) mentioned that Eurobridge farm in Ogun State was the first farm to be certified, and the farm produce is for local consumption and export. The farm produce identified in the above literature includes lemongrass tea, ginger, local rice called ofada, red hibiscus, tropical fruits, herbs, spices, mushrooms, cashew, fruit juices, quail, guinea fowl, chicken, cane rats, snails, turmeric, and watermelon. However, this farm was not mentioned by any of the stakeholders visited.

Organic products such as cassava are processed into garri, and oil palm seeds converted into palm oil. Figure 3.3 shows samples of processed products such as palm oil, garri, and honey.
A market could be described as a place or an avenue where exchange occurs, and goods and commodities are exchanged for absolute financial worth (Waheed, 2015). Marketing leads to human needs' satisfaction by providing products in the right format and at a set place and time (Asogwa & Okwoche, 2012). The market channels can be classified into the following:

- Household production
- Direct-to-consumer
- Direct-to-retail
- Branded wholesale (Martinez et al., 2010; Waheed, 2015)

Street food is also one of the ways the demand of the urban population in Nigeria is met, and from studies, there have been concerns about contamination and safety. Street food is an informal food sector in Nigeria and serves as a means of employment (Dipeolu et al., 2007). The different vending sites for street food consist of stalls, roadside stands, pushcarts, and hawkers (Chukuezi, 2010).
Sales outlets in the region vary from retail stores such as supermarkets, stores, and stalls. Farmers are the first consumers of farm produce. All stakeholders interviewed stated that they and their family members consume organic produce. Stakeholders mentioned that not all the classes of food are readily available. Still, they may not have certain fruits or staples that are grown organically.

Produce is mainly sold in traditional markets; a market provides an avenue for selling and buying a commodity (Adekunle, 2011). In the states visited, this is a common practice in the communities. A day is set aside weekly as 'Market Day'; this is when farmers, salesmen, and women take their produce to the market. On such days there is a considerable influx of people due to the variety of products available. In this kind of market, bargaining for prices occurs because, in most cases, prices are not fixed. Figure 3.4 below shows a typical traditional market.

![Figure 3.4: Example of a Traditional Market](source: Adekunle, 2011)
3.1.6 Food Consumption

The most critical staples and commonly consumed foods in Nigeria are cereals. The consumption pattern of various types of foods varies across the regions of the country. The South-East has the highest percentage of processed food consumption, and it decreases progressively to the South-South, South-West, North-West, and North-East while the lowest rate is the North-Central. The protein consumption in the South-West is about 15% of the country's total consumption, making it the third-highest region consuming protein (Akinyele, 2009).

3.1.7 Organic Certification

Certification involves obtaining a documented assurance that products have undergone the required process while adhering strictly to the required standards (IFOAM, 2006a). Certification is needed to back up claims of ‘organic’; these claims are verified either through Third-Party Certification (TPC) or guarantee systems before a label can be assigned (Scialabba, 2007).

Organic farmers' certification in Nigeria is carried out via the Participatory Guarantee System (PGS), but TPC is also available. Third-party organic certification plays a considerable role in the supply chain. The aims include: preventing fraudulent acts, assuring product quality, prompting sales and commerce through the regulation of organic products and sales to final consumers (Home & Nelson, 2015). The cost of TPC serves as a barrier to its wide use, especially for small scale farmers, leading to alternatives such as the PGS.

NICERT (Nigeria Certification body) is a certification and inspection body in Nigeria that partners with ECOCERT. NICERT was founded to help increase local goods produced in compliance with international standards. NICERT is a TPC body confirming that
goods and services conform to set standards, either commercial or legal like GLOBAL G.A.P., UTZ Certified, Fairtrade, ECOCERT, or legal measures such as United States Department of Agriculture (USDA) ORGANIC and JAS (NICERT, 2019).

Certification of organic farmers in Nigeria is carried out majorly via the PGS coordinated by the Association of Organic Practitioners of Nigeria (NOAN). A PGS helps ascertain the quality of organic foods produced in a particular locality and involves both producers and consumers (NOAN, 2019).

The PGS supports several stakeholders' involvement and participation to guarantee organic products' integrity (Home & Nelson, 2015). PGS is rooted in trust, social networks, and the exchange of knowledge. According to IFOAM, PGS has various key elements and features that are universal. The key factors include participants having a shared vision, all members participating, and transparency amidst stakeholders. This system advocates trust in farmers to produce organically. The PGS is a learning avenue for all stakeholders involved. The group's power is in the hands of all, not just a few (horizontality) (IFOAM, 2007).

Under the PGS certification by NOAN, 600.7 hectares in the South-West region are under organic production. About 52 farmers and farmers groups are under the PGS monitored by NOAN across the country. The farm produce ranges from tomatoes, yam, cassava, maize, vegetables, plantain, banana, oil palm, cocoa, pepper, cocoyam, ginger, turmeric, and pawpaw, mainly for local consumption.
3.2 Organizations Involved in the Region’s OFS

3.2.1 NOAN

NOAN, a non-governmental organization, was formerly called the Nigeria Organic Agriculture Network. The organization was founded in 2008 and served as the umbrella body for organic agriculture organizations and stakeholders in Nigeria.

The Association's mission is to coordinate and facilitate the development of sustainable organic agriculture-related activities in Nigeria. Members include farmers, processors, scientists, academicians, exporters, institutions, Non-Governmental Organizations (NGOs), and NOAN serves as a link between the organic agriculture stakeholders in Nigeria and international bodies interested in organic agriculture.

The organizational structure of the association is illustrated in the Figure below. The activities of the organization are classified into six areas managed by various committee members:

- Advocacy
- Capacity Building
- Standards and Certification
- Marketing
- Production and Processing
- Research

In recent times the Association has been actively involved in two significant projects, the Ecological Organic Agriculture Initiative (EOAI) and the Forum for Agricultural Research in Africa (FARA) Innovation project on organic agriculture.
EOAI is an initiative in Africa based on decisions by the Africa Heads of State and Government to incorporate ecological organic agriculture into the national agriculture production system by 2020 through six pillars, which include:

- Research, Training, and Extension
- Information and Communication
- Value chain and Market development
- Networking and Partnership
- Policy and Programme Development
- Institutional Capacity Development

NOAN is the organization responsible for executing the initiative in Nigeria. The EOAI in Nigeria has made a lot of considerable progress (NOAN, 2019).
3.2.2 Organic Farmacy

Organic Farmacy is a registered multipurpose cooperative society situated in Lagos State founded to provide healthy food while conserving natural resources. Members of the cooperative are from diverse fields such as farmers, marketers, nutritionists, academicians, and others. The cooperative seeks to provide quality products, well-cared for crops and livestock, and natural friendliness.
The cooperative operates on certain principles:

- Voluntary, Open Ownership: The cooperative is open to everyone; there are no discriminations in gender, race, social, political, or religious beliefs.

- Democratic Owner Control

- Owner Economic Participation: All members of the cooperative contribute to the system and also enjoy economic benefits.

- Autonomy and Independence

- Education, Training, and Information: Education and training for members of the cooperatives are carried out to improve their development. Educating the general public on the benefits of being a member and partaking in the OFS is also carried out. Cooperation among Cooperatives Concern for the Community (Organic Farmacy, 2019).

3.2.3 Organic Agriculture Project in Tertiary Institutions in Nigeria (OAPTIN)

OAPTIN is an association that started at the Federal University of Agriculture, Abeokuta (FUNAAB), in June 2004. This association is one of the pioneering organizations that has been involved in the growth and development of the organic food sector in Nigeria. The organization was founded to provide an innovative and purposeful way of promoting organic agriculture for safer food and environment in Nigeria. The association is involved in capacity building, strategic research, advocacy, dissemination of information, and building partnerships locally and internationally (OAPTIN, 2019).

In 2009, the Work, Earn and Learn Programme (WELP) started in partnership with the United Kingdom and Coventry University government, United Kingdom. WELP is used to impart knowledge
and skills in organic agriculture, such as production, marketing, record keeping, and customer relations (OAPTIN, 2019). In 2009, twenty-three selected graduate applicants were trained in a seven-week intensive program. Other programs, such as the summer school program for personnel in the Ministry of Agriculture and lecturers, was held in 2010. The summer school is an avenue to train interested persons on organic agriculture basics, emphasizing organic fruits, vegetables, and arable crop production, organic livestock, composting, packaging, and certification (Olaito, 2014).

The association formed a program called the “Community Organic Box Scheme (COBS)” on January 30, 2014, to enable further growth and to sustainably meet the demand for organic produce throughout the year. Members of the Scheme contribute to a token quarterly, and these contributions are used for cultivating one hectare of land growing crops such as organic cassava, yam, and maize. The farm produce is distributed weekly to members participating in the Scheme, while extra produce is sold to staff and students in the university and community members.

3.2.4 Rural Development Program

This department is under the Justice Development and Peace Initiative (JDPI) in Ekiti State, which started in 2001. The organization is a non-profit and deals directly with farmers in the State. The shift to organic agriculture was prompted by soil fertility issues faced by farmers in the State. At the interview time, the department is working with about 1,063 organically inclined persons; they have over five hundred farmers and secondary school students who are members of the organic club. Under this department’s supervision, farmers have created cooperatives and are working towards getting certified via PGS.
Scheduled and unscheduled visits are made to the farms, and trips are made to research institutes to enlighten the farmers. There are internal exchange visits, especially when new farmers join the group. New farmers visit older members' farmlands to learn and then apply their knowledge about their farm practices.

Students in the organic club are grouped into various areas of interest, crop production or animal production, and work in groups. Demonstrations are carried out to enlighten the students, and they are encouraged to practice what they are taught.

### 3.2.5 Institute of Organic Agriculture and Green Economy (INOAGEC)

This Institute was created under the Lagos State University (LASU), the first of its kind in Africa. The Centre started in the 2015/2016 academic session, and accreditation was carried out in 2018.

The Institute's vision is to be one of the leading lights and premier institutions for Organic Agriculture and Green Economic in the nation. The idea will be accomplished by providing training for farmers interested in the OFS, creating jobs, providing entrepreneurial and professional skills to interns with environmental friendliness, reducing poverty, and converting waste to wealth.

The Institute’s mission is to produce environmental and waste-conscious interns in farm practices using hands-on practical training. To provide an environment for students and staff to work harmoniously on the field and develop customized agro-allied products with inputs from organic materials and a low carbon emission production practice.

The Institute held its first training program in February 2017, and it was held for one week. Some organic herbicides have been developing, and further research has been carried out on some
botanical additives, but funding constraints have been an enormous setback.

The LASU Organic Box Scheme is an initiative created to teach any staff interested in learning more about organic farming. Members of this Scheme pay a token and get organic produce such as vegetables, fruits, corn, and sugarcane from the Institute’s farm every week. There are plans to add value to the crop, such as processing the cassava tubers planted into finished products such as garri.

The development in Nigeria's South-West region's organic food sector is further illustrated in Figure 3.6 below.

![Figure 3.6: Developmental Stages of the OFS in the South-West Region](image)

Source: Own figure
4. Documentation of the Organic Food System Case in Manyara Region, Tanzania: Manyara Organic Farming Initiative (MOFI) (Owusu Eunice Afua Abuaa)

4.1 Background Information of the Manyara Region

4.1.1 Geography of the Manyara Region

According to the NBS (2007), Tanzania Mainland is divided into 31 administrative regions, and each region is comprised of districts (rural and urban). In total there are 119 administrative districts and five cities - Dar es Salaam, Mwanza, Mbeya, Tanga and Arusha. The country has 120 ethnic groups with Kiswahili as their official language. However, English is widely spoken (NBS, 2007).

Tanzania is one of Africa’s most ecologically rich countries with a land area of approximately 89 million hectares, of which about 33 million hectares are forest cover comprised of closed forest (MNRT, 1997). It is the largest of the five East African countries (Tanzania, Kenya, Uganda, Rwanda and Burundi) and borders eight countries: Kenya, Uganda, Rwanda, Burundi, Zambia, Malawi, Mozambique and the Democratic Republic of Congo. The government of the United Republic of Tanzania is a unitary republic based on multi-party parliamentary democracy (NBS, 2007). All state authority is exercised and controlled by the governments of the United Republic of Tanzania and the Revolutionary Government of Zanzibar (ibid.). Tanzania’s population was estimated to be 37.6 million in 2004 (World Bank, 2007), with just under half (43%) of the population estimated in 2005 to be aged 14 years or younger (ibid.). According to 2002 statistics, the majority of the country’s population (77%) live in rural areas, with 23% living in urban areas (NBS, 2007).
Manyara region is one of Tanzania’s 31 administrative regions with its regional capital being Babati. The region has a population of 1,425,131 during the national census in 2013 (NBS, 2013). Between 2002-2012, the region’s 3.2% average annual population growth rate was tied for the third-highest in Tanzania and the 22nd most densely populated region with 32 people per kilometer. Lake Manyara is in the Northern part of the region and boarded to the North by the Arusha region, to the Northeast by the Kilimanjaro Region, to the East by the Tanga Region, to the South by the Dodoma Region, to the Southeast by the Morogoro Region, to the Southwest by the Singida Region and to the Northwest by the Simiyu Region. The highest mountain in the Manyara region is the mount Hanag (ibid.).

The region is divided into six districts, namely Babati Rural, Babati Urban, Hanang, Kiteto, Mbulu and the Simanjiro District (NBS, 2013).
4.1.2 Demographic Information

The Manyara region is occupied by people from different ethnic groups and communities, including the Assa people, Gorowa, Kwadza, Mbugwe, Datooga, Maasai, Barabaig, and the largest ethnic group in the region are the people of Iraqw (NBS, 2013).

According to the national sample census of agriculture conducted in 2002/2003 by the NBS in Tanzania, the number of agricultural households in the Manyara region is 67% (NBS, 2003). The area has a literacy rate of about 72%, with the highest literacy rate found in the Babati district. Almost all heads of households in the Manyara region had formal education (NBS, 2007). The majority of households ranked annual crop farming as their most crucial livelihood source, and there is little difference between male and female-headed households. A higher percentage of female-headed
households rely on remittances compared to male-headed households (ibid.).

4.1.3 Economy of the Manyara Region

According to the Tanzania National Food Security Division (2017), the agricultural sector is the mainstay of its economy. It generates 25% of the GDP and contributes 30% of export earnings. Of this amount, livestock production contributes nearly 5%, and fishery slightly more than 1%. The agricultural sector offers livelihoods to over 80% of the population and employs 75% of the total labor force (NBS, 2007).

The residents of the Manyara region are mostly farmers (ibid.). The mining of Tanzanite gems on the Mererani Hills mostly accounts for the region’s economy. Agriculture accounts for the highest percentage of the GDP (Mella et al., 2007). Agricultural income is the primary source of income for the poor, especially in rural areas. Most farmers get their cash income from their annual crop farming (ibid.).

According to the NBS (2013), agricultural growth has varied across food crops, cash crops, and livestock. Within food crops, maize is the most important, accounting for over 20% of total agricultural GDP, followed by a rice paddy, beans, cassava, sorghum, and wheat. The essential export value in cash crops is coffee, cashew, cotton, tobacco, and tea. The current annual average growth rates of export crops, food crops, and livestock have been about 6%, 4%, and 3 %, respectively (NBS, 2013).
Figure 4.2: Household Income Source  
Source: Mella et al., 2007.

Some tourist sites like the Tarangire National Park, which is in the Manyara region, and the Lake Manyara provide some income to the area (ibid.).

The prevalence of income poverty is still high in Tanzania. According to the Household Budget Survey of 2000-2001, the proportion of the population below the national poverty line is 18.9%, and that below the primary national needs poverty line is 35.7%. Since the 1990s, poverty has declined in Tanzania but remains widespread, particularly in rural areas where 39.9% of households are below the basic needs poverty line (NBS, 2013).

According to Mella et al. (2007), poverty levels are highest among households depending on livestock is 59.1%, while the poverty levels of those depending on sales of food crops are 40.6%, those who rely on cash crops is 38.6%, and those who are dependent on sales of livestock products is 33.3%.

The poverty profile further suggests that agricultural production and farm gate prices can significantly impact poverty in Tanzania (Mella et al., 2007). An analysis by Levin and Mbamba (2004) concluded
that the expansion of agricultural production in Tanzania has the most robust employment and income affecting agricultural production growth seems to have an enormous impact on poverty reduction (Sarris & Mantzou, 2005).

4.1.4 Agricultural Background

Agriculture is the backbone of the Tanzanian economy. The country has a dual agricultural economy that includes the smallholder sub-sector and the commercial/large-scale subsector (NBS, 2002; NBS, 2003) Smallholder farmers who dominate the agricultural sector are estimated to be 4.8 million, according to the Agriculture Sample Census in 2002/2003 (ibid.). These farmers use rain-fed agriculture, producing a variety of crops mainly for subsistence purposes. These account for most of the food produced in the country. Smallholder farms using traditional cultivation methods dominate the sector. The main food crops grown in the country are maize, sorghum, millet, cassava, sweet potatoes, bananas, pulses, paddy, and wheat. Cash crops are also grown in Tanzania, the country was once the world’s leading producer of sisal, but synthetic fiber depleted the market. Besides sisal, other cash crops grown are coffee, tea, tobacco, cotton, and cashew nuts. On average, the crop sub-sector contributes about 34.8% of the Agricultural GDP, according to the 2003 Economic Survey (NBS, 2003).

The average size of cultivated land ranges from less than one up to three hectares of land. Eighty-five percent of the crop area is developed by hand, while ten percent of peasants use plows and only five percent use tractors (ibid.). According to the Tanzania National Food Security Division (2017), Tanzania is endowed with 44 million hectares of land suitable for agriculture. However, part of this arable land is only marginally suitable for agricultural production due to various factors, including infertile soils, erosion, land degradation, and drought. Moreover, about 28% of the land is under
protection as forest reserves and wildlife and is inaccessible for agriculture. However, the country has significant potential for irrigated agriculture, with the area suitable for irrigation is estimated to be about 29.4 hectares. Smallholder farmers dominate the agricultural sector with an average farm size of between 0.2 and 2.0 hectares, depending on the location (NBS, 2003). Maize and rice are the most dominant crops in the country; other significant crops include sorghum, millet, wheat, pulses, cassava, potatoes, bananas, plantains, sugar, groundnuts, sesame, coconuts, and soybeans (ibid.).

According to Mella et al. (2007), Tanzania’s climate and growing conditions are favorable for a wide variety of fruit, vegetables, and flowers. The primary fruit potential is in pineapples, passion fruit, citrus fruit, mangoes, peaches, pears, and bananas, while primary vegetables include tomatoes, spinach, cabbage, and okra. Both tropical and non-tropical varieties of flowers are grown. The main staples include maize, sorghum, millet, rice, wheat, pulses, cassava, potatoes, bananas, and plantains. The major export crops include coffee, cotton, cashew nuts, tobacco, sisal, pyrethrum, and tea. The export crop marketing has been liberalized, as has the supply of agricultural inputs and prices (NBS, 2003).

According to NBS (2007), the number of agricultural households in the Manyara region involved in crop production is estimated at 154194. The largest agricultural households are in Babati, followed by Kiteto, Hanag, Simanjiro, and Mbulu. Most of these rural households are involved in crop production and livestock keeping. Out of these agricultural households in Manyara, 98% produce maize during the long rainy season. The average area planted with maize per growing family ranges from 0.7 hectares in Mbulu District to 2.8 hectares in Kiteto District. Kiteto district has the largest planted area of maize (69,186 ha), followed by Babati (35,491 ha), Hanang (35,232 ha), Simanjiro (22,831 ha), and Mbulu (22,818 ha).
The second most important cereal crop in the region is paddy, grown by 1.4% of the total crop growing households during the long rainy season. During this time, the paddy crop is produced in the Babati and Simanjiro districts on 1,823 and 370 hectares, respectively (NBS, 2003).

Sunflower is the most cultivated oilseed crop constituting 91% of the total oilseed production. The production of fruits and vegetables in the region is relatively small, with cabbage, tomatoes, and onions as the most cultivated (ibid.).

According to Mella et al. (2007), in the Manyara region, about 8.1% of the total planted area is fertilized using farmyard manure and compost, and 91.1% is unfertilized. About 95% of the total cultivated area has organic fertilizers applied. Inorganic fertilizer is applied to a small area and represents only 5% of the fertilized area. Mbulu district in the Manyara region has the highest percentage of fertilized cultivated area, followed by Babati, Hanang, Simanjiro, and Kiteto district. These fertilizers are mostly applied to the areas planted with cereals, pulses, oilseeds, roots, tubers during the long rainy season with very little fertilizer applied to cash crops. The Simanjiro district uses inorganic fertilizers on fruits and vegetables (more than other crops), followed by Hanag and Kiteto.

Livestock farming is one of the country's major agricultural activities, contributing to the national food supply, employment, income, recreation, trade, draught power, organic manure, and economic well-being (Mella et al., 2007). The livestock sub-sector supports a large proportion of all household livelihoods and has a vital role in adding value and ensuring national food security (NBS, 2003). About 36% of farm households are engaged in livestock keeping. Animal husbandry is made up by cattle, sheep, goats, and poultry, with cattle ownership, limited to one-third of households and poultry ownership widespread in most households (ICAE, 2015). In 2015,
livestock activities were 7.4% of the National GDP with an annual growth rate of 2.2% (ibid.).

Additionally, the livestock sector contributes to about 30% of the Agricultural GDP. Out of this sector’s contribution to GDP, 40% originates from beef, 30% from milk, and 30% from poultry and small stock production. More than 90% of the country's livestock population is indigenous. These animals are tamed traditionally with low production and productivity but disease resistant and well adapted to the existing environment. Livestock keeping is categorized into two major production systems, intensive and extensive. Although limited in size, this intensive system has been receiving more investment and improvement because of its contribution to the market-oriented economy. The comprehensive approach is agro-pastoralism and pastoralism. Pastoralism is concentrated in the northern savannah plains where climatic and soil conditions do not favor crop production (for instance, parts of Arusha and Manyara). Agro-pastoralism is found in low rainfall areas of the Western Zone (Shinyanga and Tabora) and Central Zone (Dodoma and Singida). Other agro-pastoral characteristics include Lake, Eastern, and Southern Highland Zones (Tanzania National Food Security Division, 2017). Tanzania is currently estimated to have about 14,000 freshwater fishponds scattered across the mainland (NBS, 2013).

The inhabitants of the Manyara region, according to the NBS (2007), have different ways of clearing their lands before planting: bush clearing, burning, hand slashing, or tractor slashing, with hand slashing being most popular with farmers during the long rainy season. This is done annually to help clear the land from the previous season.

During soil preparation in the Manyara region, the most common method is ox-plowing, hand plowing, and tractor plowing (NBS, 40
Inhabitants of the Hanang, Babati, Mbulu, Simanjiro districts have the largest planted area cultivated by oxen, while the Kiteto district's inhabitants cultivate mostly using the hand hoe (ibid.).

4.1.5 Food Environment

According to the Tanzania National Food Security Division (2017), food availability in Tanzania is obtained through individual production (crop, livestock, and fisheries), purchases, food stocks (public, private, and farm retention), trading (import and export) and food aid. The primary source of the food supply in Tanzania is local production. On average, local production accounts for about 95% of food availability in the country. The aggregate national food availability in Tanzania maintains a critical balance between production and consumption (ibid.). The country’s food self-sufficiency measured by the self-sufficiency ratio over four years from 2012/2013 to 2015/2016 is over 100% (ibid.). Although the country is food self-sufficient in most years at the national level, there are variations at the regional, district, and household levels. The government is committed to promoting the agricultural sector to ensure sustainable livelihoods and security (Tanzania National Food Security Division, 2017).

Inadequate livelihood opportunities contribute to household food and nutrition insecurity (ibid.). The deficit of staple foods at the household level is the most pressing food consumption problem. Low production and high food prices contribute to low purchasing power for some households. Food price increase in most assessed areas has been the primary limiting factor to food accessibility (NBS, 2007).

According to the Tanzania National Food Security Division (2017), market conditions function optimally, having all kinds of food grown inside and outside Tanzania districts. Many villages have nearby
markets for both crops and livestock, making it easier to access and purchase food (ibid.). The road network is not a major limiting factor for food accessibility because almost all roads in Tanzania are passable throughout the year, except in a few areas where roads are impassable during the rainy season (ibid.).

4.1.6 Food Consumption Patterns

According to a survey conducted on food consumption patterns in Tanzania by Lukmanji and Tanner (2005), each household's dietary habits is dominated by what is available. The survey revealed that the staples of maize, rice, and cassava are essential food items during the lean season. During the post-harvest season, rice dominates consumption and often replaces the porridge made from maize or cassava. The high dietary bulk properties of maize and rice restrict the quantity of food one can consume at one time and limits nutrient intake (Robson, 1974). Cassava is even bulkier and of lower nutritional quality than maize or rice (Latham, 1978). The increased dietary bulk with low energy density is significant for children's diets (Ljungquist, 1978). The energy density in dietary bulk can be increased by adding fat or oil to the dish (ibid.). However, these items are rarely available. Most of the cashew nuts are sold, and other oil/fat crops like peanuts, sesame are not grown by most households (Zehnder et al., 1986).

According to Longhurst and Payne (2002), green vegetables, especially cassava leaves, are the main relish dish for most households in a lean season. They become very scarce in the post-harvest season and mostly replaced by fresh beans and legumes such as kidney beans, cowpeas, and pigeon peas.

Fish becomes a daily diet item for most families in the post-harvest season. Concentrated energy sources such as fats, oil, and sugar are scarce in both periods (ibid.). Food consumption patterns in
Tanzania vary with the season, according to Longhurst and Payne (2002).

4.1.7 Organic Certification

According to Willer and Lenourd (2018), the organic certification area is more than half (57%) of the total area under organic production. There seems to be a substantial potential for the future of organic agriculture in Tanzania. Mella et al. (2007) revealed that the number of certified farmers is likely to increase as companies continue to invest in organic agriculture in the Manyara region. Organic crops include cotton, coffee, black tea, cocoa, ginger and spices, essential oils (lemongrass), honey, and cashew nuts. Other crops include fresh fruits (citrus, papaya, guava, and mango); dried fruits (banana, pineapple, mango, papaya); herbs and spices (cinnamon, ginger, vanilla, chili, pepper, nutmeg, cardamom, clove, curry, lemongrass) (ibid.). There are also oilseeds (sunflower) and oils (palm oil, sunflower oil), tea (hibiscus tea), vegetables (fresh, mostly peas), and processed vegetables such as garlic and onion powder. A number of these crops have historically been grown organically by default (ibid.).

According to Mella et al. (2007), the NGO ‘Participatory Ecological Land Use Management Tanzania’ (PELUM) organized a meeting in 2002 to initiate standards and certification. After many meetings and stakeholder consultations, the local market standards were first approved in December 2003, followed by Tanzania Organic Certification Association (TanCert) in 2004 (ibid.).

TanCert is the sole body that strives to provide affordable certification services to facilitate the market competitiveness of organic products locally and worldwide (Mella et al., 2007). TanCert certifies organic products with a guaranty sign of ‘HAI’. The standards for the local market differ from that of the export market.
Both are a brief version of the IFOAM principles and basic standards. The standards for local markets consider the specific conditions for organic production in Tanzania and the current stage of its development in the country (ibid.). TanCert also provides training of local inspectors, who are recognized by international certification bodies. The formation of TanCert led to the establishment of the Tanzania Organic Agriculture Movement in June 2005 (ibid.).

According to Mella et al. (2007), Tanzania Organic Agriculture Movement was registered and launched in June 2005. As an umbrella organization for various stakeholders’ initiatives, it aims at providing leadership and coordination in developing and promoting the organic sector in Tanzania. It also facilitates research, training and extension, cooperation and networking among stakeholders, and the development of local market (ibid.).

4.2 Overview of the OFS Case- MOFI

The overview of the MOFI is based on the interview with informants of the case conducted on the 21st February, 2019.

MOFI is a non-profit organization promoting organic farming by improving food security and strengthening land tenure security among poor small-scale organic farmers in the Manyara region (MOFI, 2018).

Tanzania's efforts to start organic farmers associations about 10-15 years ago did not succeed. The participants included many organic farmers who came together to have an organic organization to support and develop organic farming. Some of these farmers are board members of MOFI today.

MOFI was formed by bringing together organic farmers who were spread all over the Manyara region. The organization has been in
existence for over two years. It was registered in the year 2015 but started working in late 2016.

MOFI works at the regional level (Manyara region), with five districts in the Manyara region as their territorial boundary. The organization works at Babati district, Mbulu district, Hanang district, Simanjiro district, and Kiteto district. It has 200 farms in ten villages with 20 farms in each town. The farmers are very dispersed because MOFI wants to have organic development in as many agro-ecological areas as possible in the Manyara region. These farmers are growing maize, pigeon peas, vegetables, honey, sugar cane, and livestock. The farmers use animal manure from livestock and ash to produce fertilizers for the crops. The member's farmers are extension officers, processors, consumers, retailers, and caterers, who are all key actors driving the activities of MOFI. Some produce, process, cook, and sell the organic products they harvest. Even though some farmers are already unofficially processing their products, MOFI has plans to teach farmers how to process the maize they produce into flour. Once they get certified, they will package it and sell it as organic, nutritious maize flour.

To ensure that the organization is working towards achieving its goals, MOFI has a board made up of six men and four women representing the ten groups in MOFI. These board members speak on behalf of the group members during board meetings.

MOFI has no formal certifications but is currently working on getting farmers certified with the PGS until 2019. The organization has adopted and worked with the East African Organic Standards for Products (EAOSP).

After MOFI’s board meeting, MOFI planned to certify its farmers in 2019 with the PGS, certified by IFOAM. MOFI does not have any formal organic markets in the Manyara region for farm products because there is no proper certification. However, the organization
plans to start selling in the nearby towns, which have organic markets, once the certificate is in place.

4.3 Key Foundational Principles of the MOFI

The main motto of MOFI is “KILIMO HAI” which means organic farming, and “VYAKULA ASILI,” which means natural foods (MOFI, 2018). The vision of MOFI is to be the leading organization in regenerative organic food production and sustainable food value chain development in the Northern zone of Tanzania. They will do this by promoting, developing, organizing, and creating sustainable systems for organic food production, processing, and distribution in a pollution-free environment to meet consumer’s health needs through a right-based approach (ibid.). The organization's main objective is to promote and develop initiatives by strengthening the role of small-scale land users and other stakeholders. The organization will enhance land tenure and food security's resilient security using regenerative agriculture towards poverty reduction (ibid.). MOFI wants to achieve its objectives through:

- the organization of training and workshops
- enhancing the use of a right-based approach for strengthening organic farmer groups
- organizing of village community banks
- encouraging certification of the organic products based on the East African Organic Product Standard
- supervising and managing the basic organic farming practices to improve the production of small-scale organic farmers by use of proper techniques on water management and water harvesting in dry land; irrigation and chemical-free organic cultivation of vegetables and other crops; organic meat production of cattle; goats; sheep; poultry keeping; animal health and fodder management; rotation intercropping; mulching
composition and manuring in cereal production; beekeeping; foraging; hygiene extraction and parking (ibid.).

The organization also facilitates the acquisition of land leases to individuals and the community and mainstreaming gender relations, violation of women, and HIV/AIDS as a cross-cutting issue among organic farmers in the Manyara region (MOFI, 2018).

MOFI has adopted the East African Organic Product Standards (EAOPS) that have been approved by IFOAM in the family of standards as the basic principles for operating. The EAOPS covers crop production, livestock production, beekeeping, processing, and labeling (ibid.).

4.4 Organizations Involved

MOFI collaborates and builds partnerships with institutions that have a similar purpose in organic farming and other relevant professional consultancies, research, fundraising for bankable projects locally and internationally and publications for educating and encouraging organic farming practices in the community (MOFI, 2018).

To make the work of MOFI effective towards the achievement of their goals, according to MOFI (2018), the organization collaborates with the following organizations:

- Forum Syd is a cooperative organization with around 140 member organizations from the Swedish civil society. Together they work on human and civil rights and facilitate popular participation around the globe. They have offices in five countries, which helps the organization to provide direct support to local organizations like MOFI. Forum Syd mediates grants from the Swedish International Development Cooperation Agency (SIDA). Forum Syd
advocates for just and sustainable development (MOFI, 2018).

- The Tanzanian Government initiated the Tanzania Chamber of Commerce, Industry and Agriculture (TCCIA) to strengthen Tanzania's private sectors (ibid.).

- The OFSP is a program to take and further develop the OFS as a pilot model and living laboratory for SFSs (OFSP, 2018).

- Building Ecological Regenerative Agriculture and Societies (BERAS) works with agriculture and FSs to feed the world. At the same time, simultaneously strengthen the ecosystem's carrying capacity and preserve biodiversity for future generations. BERAS's primary goal is to transform the agriculture and FSs to be part of the solution instead of causing problems (BERAS, 2015).

- EAOPS is a standard for organic production in East Africa and has been adapted to East Africa conditions. The purpose is to have a single organic standard for organic agriculture production under East African conditions (EAOPS, 2007).

- Hanang District Council (MOFI, 2018).

According to Mella et al. (2007), the first organic garden in Tanzania was started in 1898 in Peramiho, Songea District of Ruvuma. However, it was not until the 1990s that the Tanzanian government launched a campaign to promote organic agriculture and related services. This campaign stimulated donor support and encouraged various initiatives from NGOs and other organizations (ibid.). Presently, many organizations and programs promote organic agriculture in Tanzania, including:
• The Global Service Corps Program
• Meatu Cotton Organic Project (in Meatu)
• Export Promotion of Organic Products from Africa
• Natural Crop Protection in Mgeta-Morogoro District
• Organic vegetable farming in Zanzibar
• Improvement of organic coffee (KNCU)
• Organic Coffee Karatu (Gibbs farm)
• INADES Formation
• Kilimo Hai Tanzania
• Envirocare
• Care Tanzania
• GTZ Organic project
5. Documentation of Organic Food System Case in Tamil Nadu, India: Inba Seva Sangam (ISS) (Rakhee Rachel Rajan)

5.1 Background Information of ISS, Sevapur, Tamil Nadu

5.1.1 Geographic Information

Inba Seva Sangam (ISS) is located in a small village called Sevapur in Karur district in the state of Tamil Nadu. The functional region of ISS is the Kadavur block, which includes 20 panchayats. The area is bounded by Tiruchirappalli district on the East, Namakkal on the North, Dindigul on the South, and Erode on the West. It is the most centrally located region and is 371 km southwest of the capital (Chennai). The area is very suitable for agriculture in labor, soil, biodiversity, and knowledge of the agricultural sector. They receive an annual rainfall of less than 500 mm, and the soil type is sandy loam and clay type.

Moreover, the region is irrigated by the two central water bodies, the Amaravathy and the Cauvery channels. The district has various agricultural products, mainly paddy, millets, pulses, oilseeds, sugarcane, and banana. Apart from agriculture, the land is rich in minerals such as granite, red gravel, brick, clay filling earth, and kankar and has profitable mines. Only 2.38% of the district is under forest cover (Deputy Director of Statistics Karur, 2014).
5.1.2 Demographic Information

The entire district was under the Chola dynasty rule, followed by the Chera Naickers and the British. The region is of historical importance according to Hindu mythology. Due to its central location, it was a significant battleground in historic times. The area had a rich cultural heritage and was prosperous in climate, wealth, and other features. The state's main touristic attractions are the big and old temples, parks, and government museums that portray the region's rich and historical prosperity. The local government structure of Karur district consists of two municipalities and eleven town panchayats. The panchayats are further subdivided into blocks and taluks. The ISS region is a village; Sevapur and Vinobajipuram are under the Kadavur block in the district. The population of the entire district is about 1,064,493, and Sevapur village is 14,145. The rural population is approximately 59.18%, and the urban population is 40.82%. The literacy rate of the district is 75.6% (Directorate of Census Operations, 2011).
5.1.3 Economic Information
Agriculture is the backbone of the economy, with a 33% labor force in the sector. The historic occupation of the people was jewelry making and gem setting. The region has produced enough to feed itself and the other parts of the state. Apart from agriculture, the district is known for its industrial potential. Cement, sugar, paper, and textile are the primary industries in the district. The region also has bus building industries. The community has one state seed farm, which helps supply quality seeds (non-organic), 24 fertilizer wholesaler shops, and 232 fertilizer dealer shops. The region is comprised of 4 large scale, 14 medium scale, and 7710 registered industrial small-scale units as of census 2011. Cottage industries are also quite popular in the region (Directorate of Census Operations, 2011).

5.2 Description of an OFS Case Study ISS, Tamil Nadu, India

5.2.1 Foundation Story (Phase I from 1968-1993)
In the year 1966, at the age of 45, Mother Lea Provo, a Belgium citizen, came to India after her husband's demise. She was inspired by the Gandhian principles and the disciple Shanthi Das, which led to set up the model villages, Sevapur and Vinobajipuram, in Tamil Nadu. Her idea was to empower the weak and oppressed in the society through education and economic growth.

Along with four young Indian men, mother Lea came to Sevapur in the year 1968. The area was a desert-like valley, covered with bushes, stones, and thorns. There were no roads and transport facilities to get to this place, and they had to walk and travel on bullock carts to reach the destination. There was a stream running across the area, and initially, five families settled there. They built small huts and did agriculture for a living.
ISS Sevapur is a voluntary non-governmental, non-religious and political organization established in the year 1968 in Sevapur under the Tamil Nadu Societies Registration Act. The organization is built upon Gandhian principles and is entitled to a joyful service society.

The first general body members of ISS consisted of the following members: Mother Lea as the president, Mr. U. Manikam as the secretary, 5-7 social workers, industrialists, and philanthropists. They served as a team till 1997 (ISS, 2018).

The geographical location of the village Sevapur is in D. Edayapatti Revenue village, Kadavur taluk, Karur district, Tamil Nadu. The village is about 340 acres, and the land is under the Bhoodan–Gramdan Movement, which is a movement that came into action after India's independence. The movement aims at giving land to the poor and oppressed people in the village, thereby providing a better living status. The land was obtained by persuading the landlords and landowners and the governmental Bhoodan board to distribute it to the people in need (ibid.).

ISS's initial start was a difficult task mainly due to the caste system that prevailed in the region. The community's main occupation was agriculture, and a few people were engaged in jobs like handicrafts, carpentry, tailoring, or merchandising. The rainfall in the region was small and unpredictable, which made agriculture more difficult. However, significant portions of the land were owned by the caste Adi Dravidar who are the majority of the population (ibid.).

Fondly called “Mother Lea,” Mrs. Lea Provo started her work in ISS by developing infrastructure in the form of houses, walls, buildings, and land reclamations with the help of funds from abroad and her assets. Mother Lea was able to create employment for the people in the community, and thereby the conditions of the poor and oppressed improved. She was keen on enforcing equality in all aspects and giving freedom to people to express themselves. She
wanted to bring equal rights to all people irrespective of caste, position, and occupation and inspired people to follow the Gandhian principles, the ISS foundation. Some of the landlords were unhappy about this, which led to problems between them. ISS people followed Gandhi’s non-violence principles and suffered for nearly ten months before continuing in peace. The ISS funds came from a project called SAWES in Belgium (also known as Samenwerking Sevapur Corporation). Mother Lea developed this non-profit association for collecting funds for ISS. There was a five-year development plan made by this team and presented to the Belgian government. It was approved, and they received about 75% of the funds from the Belgian government. The remaining funds were sourced by the European friends of mother Lea (Gurusamy, 2010; ISS, 2018).

In the year 1977, the village was hit by a cyclone and heavy rain. This weather destroyed the village and all the work. The people had to start from scratch. However, the strong commitment and determination of mother Lea made it all possible (Gurusamy, 2010).

5.2.1.1 Five-Year Development Plan

- To make a self-sufficient village by providing basic amenities for about 140 downtrodden and low-income families
- To create occupation, good values, and spirituality in the people
- To promote love and harmony among the people
- Help in the overall growth of Sevapur (ISS, 2018).
5.2.1.2 Achievements Until 1992

The wasteland in the region was utilized and cultivated. Borewells were dug, and pump sets were provided to the people. Basic amenities for agriculture like seeds and manure were delivered to the people. Each family in the community was given a milking animal. Cottage industries started up and were promoted so that the community members could be employed. All the families in the community were provided pucka houses. The houses were made of bricks and had two rooms, a kitchen, and a bathroom. Every house had a small biogas well for generating electricity for household purposes. Many cottage industries were also set up during that time, such as carpentry, jewelry making, metal repairing, and workshops (Gurusamy, 2010).

5.2.1.3 Infrastructural Development

1. A multipurpose community center was built, and the primary use of this building was yoga practice, camps, and a meeting hall to provide organic meals to the community. It is also used to accommodate inhabitants.
2. A children’s home with a study hall was constructed and is currently used as a hostel for boys. It can accommodate 150 students.
3. A 25-bed health education center was built to give naturopathic treatment to the community. However, currently, it is being used as a hostel for girls. The health education center did not function well due to a lack of good doctors and the region's primary health center.
4. Infrastructure for sericulture and mushroom cultivation was promoted to help create more job opportunities and better economic benefits in the region. Currently, there is a research institute for agriculture-related researches called “Biodyne Research Institute.” This institute is funded by the
Department of Science, Technology, Biotechnology, and India's Government.

5. A dining hall and a shared kitchen was built for boys to have their daily meals. Attached to it is the stock room to store the raw food materials.

6. A cattle shed, and a farmhouse was established in 1968 and is currently Demeter certified.

7. Water and electricity connections are provided to all buildings.

8. Public roads and transport system were improved. ISS established several roads and bridges. ISS constructed good roads of 2 kilometers, a permanent road of 8 kilometers, and 4 kilometers of temporary roads and small bridges.

9. The cooperative milk and leather society was opened for producers and the community.

10. The Tamil Nadu Civil Supply shop was established in Sevapur so that the community could buy the provisions for a cheaper price (Gurusamy, 2010; ISS, 2018).

5.2.1.4 Social Effects of the Community

Back in the 1990s, ISS played a significant role in eliminating the caste system in society. The people were compelled to stay mixed, and every other house had families of a different caste. Peace and harmony among the people could be observed. People were skilled and could do various jobs so that they need not solely depend on agriculture. At times agriculture was complicated due to extreme water scarcity and climate change. There were carpenters, tailors, mechanics, teachers, and drivers in the community. The village has a higher literacy rate after the involvement of the ISS. All the children have a school education, and even adults are literate at a basic level (Gurusamy, 2010).
5.2.1.5 Outreach Services Outside Sevapur

ISS helped the communities overcome their life difficulties after the massive drought of 1975-76. These people were provided with employment and deep wells for their survival. After the cyclone in 1977, 210 houses were constructed in and around the village. Roads, wells, and protective bunds were all provided; Belgium's goods and funds supported the people in times of distress (ISS, 2018).

5.2.1.6 The Second Village Vinobajipuram

This village was created to help the Sri Lankan refugees who were affected in the year 1983. They were given a village with all the necessary amenities to feel at home. The Tamil Nadu government gave 511.11 acres of land near Tharakampetty thaluk. Unlike in Sevapur, these families were also made self-sufficient partially through agriculture and cottage industries. Seventy houses were built here for the people. Sericulture and poultry-keeping were facilitated to give adequate income to community members. A children’s home, a health care center, and a building for shops were constructed as a part of this project (Gurusamy, 2010).

5.2.2 Phase II (1993 to 2018)

In the second phase, the village has a council where people can present and solve their problems. There is a public gathering of the council members twice a week at the Om temple. There is an inter-religious worship area, where people of all religious groups can worship and celebrate festivals. There is a joint celebration on December 25, which is mother Lea’s birthday, at Thiruvalla.

The Annai Lea higher secondary school was established in 2003. The school gives education to orphans, single parents, children of
poor widows, and children whose parents cannot afford their education (Gurusamy, 2010).

Furthermore, to analyze the system's efficient running, ISS council members conducted a strength, weakness, opportunity, and threat (SWOT) analysis. The analysis outcome helped to professionally approach, implement, and solve various ISS activities (ISS, 2018).

5.2.2.1 General Body or Governing Body

After Mother Lea's death, the organization was managed by eminent members from various fields, e.g., Gandhians, academicians, scientists, social workers, and other local representative members. The general members total about 73 to date. There is an executive committee elected by the governing body every three years. The committee conducts the meeting and conducts interactive sessions with the administrative body every three months. The prominent members, the president, vice-president, secretary, and treasurer, meet twice a month to monitor the organization's smooth running. The ISS staff members add up to about 60 members (ISS, 2018).

5.2.2.2 Other Areas of Work for ISS

ISS is involved in various activities focusing on sustainable rural development, e.g., biodynamic agriculture, environment protection activities, health, and education. The most important sectors of work for ISS are women empowerment and food security, environmental, and livelihood protection (Gurusamy, 2010).

5.2.2.3 Important Programs of ISS

Foster Children’s Scheme (FCS): is school education for underprivileged students. The FCS children are also given life-centered education, such as organic farming practices and classes
apart from school education. ISS also strives to achieve good social and cultural values and eradicate social evils such as child marriage, child labor, ignorance of girl children, and others. The FCS program educates 110 boys and 121 girls. Special scrutinization is done to select the deserving children. The FCS children's funds are provided by SAmWEnWErking Sevapur (SAWES) an Association in Belgium, philanthropists from India, and Joe Homan Charitable Trust of England.

Annai Lea Residential Higher Secondary School: is a school that provides proper education up to 12th grade and also gives education on organic and biodynamic agriculture. The government approves Tamil Nadu's school, and the school follows the Tamil Nadu government syllabus.

Eye camps and other health camps: ISS conducts eye camps in collaboration with Aravind Eye Hospital and has led 105 eye camps in various villages around Sevapur.

5.2.2.4 Funds and Support for ISS

The primary funding groups supporting ISS are:

SAWES (Belgium): SAWES Cooperation is an organization founded by mother Lea to collect funds for ISS. The organization continues to support ISS for its sustainable activities for the overall development of the village.

The Joe Homan Charity UK: This charity trust helps underprivileged children get educated and have a better future.

Small Farmers Empowerment Programme (SOFIA) project: The organization was formed in 2002, and the main aim of it is to support and promote organic agriculture, farmers, pedagogical developments, local government bodies, and school children through the Small Farmers Empowerment program.
GLS Future Development (Germany): This foundation mainly promotes biodynamic and organic farming through ISS. The core values and practices of ISS help in getting funds and aids from GLS.

BERAS International: ISS has worked in collaboration with BERAS India since 2014, and it aims to create and develop ecological regenerative agriculture and sustainable food societies. ISS is currently a partner of the United Nations10-year Framework of Programs on Sustainable Consumption and Production, currently a “Core Initiative” of the UN program.

Other funds are obtained from state and central government departments, philanthropists, and other trusts (ISS, 2018).

5.2.3 Phase III (2019 to 2024) A 5-year Development Plan (Future)

A 5-year development plan has been made based on the current situation, needs, and scope for further development.

- ISS aims to get the school affiliated and aids the government in incorporating life-centered education to the school children.

- Spirituality and a natural state are essential aspects of ISS. Activities like yoga, meditation, and an organic way of life are promoted. ISS aims to build a center for yoga and naturopathy in the Kadavur Valley.

- The community helps people who are engaged in the agricultural sector. The farmers are poor and marginally sized landowners. They require employment sources like cottage industry or other small-scale industries connected to agriculture.
• There is no documentation of certain lands, making it very inconvenient for the beneficiary. About 60% of people need to get their lands documented.

• ISS aims to establish a watershed and waste management program for the benefit of the community.

• To enable more connection and cooperation between the local and central governments and the various departments for more employment opportunities.

• To implement more environmental protection activities such as reforestation, conservation of wild plants.

• Although the community is organic, they are unaware of good nutrition and balanced diets. ISS aims to ensure well-balanced diets for the children in the community and promote a green and sustainable diet.

• ISS aims at utilizing natural energy sources and establishing energy parks in the community. They aim at making small-scale industries using natural energy sources, thereby practicing the Gandhian way of life.

ISS always follows peace, strength, and joy, which is their founding principle. The values of mother Lea and other mentors are visible through the journey of ISS (Gurusamy, 2010; ISS, 2018).

5.3 Key Foundational Principles of the ISS
ISS connects the sustainable way of agriculture to the local community, helps in building small to medium sized farms and enhances local food cultivation, production and consumption which contributes to the betterment of factors such as health and environment. To achieve its goals ISS has the following illustrated vision, mission and core values (ISS, 2018).

Mission: To bring about transformation among down-trodden people who are socially, economically, educationally and culturally backward through quality Education and Economic Interventions.

Core Values: Truth, non-violence, selfless service, love, brotherhood, self-reliance, mutual understanding, reverence to all faiths and nature, mutual cooperation, the dignity of manual labor, devotion, dedication, confidence and discipline.

5.4 Organizations that promote and guide organic and bio-dynamic agriculture and support small farmers

SOFIA: SOFIA Sweden supports the small farmer's empowerment project. The project aims to promote organic farming and efficient utilization of the wastelands in the region. Currently, around 275 farmers are engaged in organic agriculture, and about 200 hectares of land are certified organic. The project supports and helps poor farmers to do agriculture sustainably and help them get a better income for a living.

Anna Lea Biodynamic Community College for Farmers and The School of BioDynamic Farming: ISS has been engaged in organic farming since its beginning. The farms are all certified organic by the Indian NPOP standards, and nearly 40 acres are Demeter certified for biodynamic agriculture. A small dairy farm inside the ISS premises is also Demeter certified. Milk, fruit, vegetables, and grains are grown here and are consumed locally by the ISS community. The main cereal crops grown here are paddy and sorghum. ISS aims to make the community independent and agriculturally sufficient.
ISS gives importance to the healing of the earth project, which led to biodynamic agriculture in the region. The school of biodynamic farming aims to train young in biodynamic agriculture. They offer two-year diploma courses wherein the students are given free education, food, and accommodation. The school also provides a one-year certificate course for biodynamic farming.

Partnership with BERAS India to create ecological and regenerative agriculture and societies: BERAS helps implement academic-based research methods on small farms to achieve sustainable growth. BERAS has many local learning centers in the sustainable food society that support and help the small farmers' network, share knowledge, and implement various agriculture practices.

Conserve endangered medicinal plants and environmental wellness: ISS has an herbal garden inside the campus to preserve the plants and make them eco-friendly. The Annai Lea genetic garden is formed to identify, conserve, and preserve plants and endangered species in the nearby hill region. These forest varieties of plants are planted and protected in the garden, and currently, there are about 250 varieties of medicinal and economically significant plants.

Climate change mitigation initiatives: i) Executed watershed management program: As a part of the watershed management, the various water bodies in the immediate areas were analyzed. Proper canals were built to canalize water for the farms on either side of the canals. ii) To economically and educationally improve society's status: This helped the community agriculture based on water availability. The farmers are trained to cultivate crops that require fewer water resources.

Rural women empowerment: Women's empowerment is an essential task of ISS. It promotes Self Help Groups (SHGs) for women in the community to become more independent and self-
reliant. There are about 350 groups with around 4000 women. ISS coordinates and organizes these groups' activities and helps in the proper running of these small organizations. These projects are funded by banks and other government organizations (Gurusamy, 2010; ISS, 2018).
6. Documentation of the Organic Food System Case in Bislig City, Philippines (Pablo Lopez Gallo)

6.1 Background Information on Bislig City

6.1.1 Geographical Description

The Philippines Archipelago lies in the Southeast Asia region. It comprises 7,641 islands, but only approximately 1,000 of its islands are populated; eleven islands make up 95 percent of the Philippine landmass. The country is divided into three central regions: Luzon, Visayas, and Mindanao, where Bislig is located. The Philippines has a tropical climate dominated by a rainy season and a dry season, which can slightly vary among regions.

Administratively, the Philippines has a hierarchy of Local Government Units (LGU). First, the country is divided into 17 regions; each region has approximately four provinces, divided into municipalities and component cities. The cities consist of Barangays, which are the smallest form of local government (Wenstedt & Spencer, 1976).

The City of Bislig lies along the southeastern coast of Mindanao Island, directly facing the Pacific Ocean. It belongs to Region XIII (Caraga region) and is a third-class city in Surigao del Sur. Bislig is located between the latitude 8 degrees 03 minutes and 30 seconds to 8 degrees 18 minutes and 0 seconds north and longitude 126 degrees 11 minutes and 0 seconds to 126 degrees 27 minutes and 0 seconds east. The city is bounded on the north by the Municipality of Hinatuan, on the northwest by the Municipality of Tagbina, on the southeast by the Municipality of Lingig, southwest the Province of Agusan del Sur, and on the northeast by the Pacific Ocean. Bislig is approximately 208 kilometers northeast of Davao City, 152
kilometers south of Tandag City (the provincial capital), and 158 southeasts of Butuan City.

Figure 6.1: Bislig City Location in the Philippines

Bislig City comprises 24 barangays; five are urban barangays comprising Mangagoy, Tabon, Cumawas, Poblacion, and Maharlika. The rest are rural barangays. Eleven of the total barangays are coastal barangays facing Bislig Bay and the Pacific Ocean (Planning Department Bislig City, 2016).
6.1.2 Demographic Information

The population of Bislig City is determined by historical events that strongly influence the region's population synergies. Around 1950, two industries led the economic growth of Bislig City, the Bislig Bay Lumber Company and its sister company Paper Industries Corporation of the Philippines, Inc. In 1970 those companies merged and became one of the biggest paper mills in Asia. The presence of this industrial giant brought favorable economic and demographic growth in the region. However, in 1995, the company started a gradual closure until the total shut down in 2007. This event led to a drop in the population growth in the later years.
Figure 6.3: Bislig City Population Dynamics
Source: Adapted from Philippines Statistics Authority, 2019; Planning Department Bislig City, 2016.

Figure 6.3 is based on the data from the Census of the Philippines Statistic Authority (PSA), the years 1995, 2000, 2007, 2010, and 2015, the later years 2015-2019 is based on projections of the Planning Department. It shows that the total population has considerably decreased since 2007; however, between 2015 and 2018, the projections show stable growth.

The researcher also points out that the local government started the program to strengthen the agricultural sector in 2010. Between the years 2010 and 2015, the urban and total population curve dropped. Still, the rural population increased by 1.25 percent, which is a higher rate than the general population growth rate of 0.59 percent. Having consolidated data for the census of 2020, it would be
possible to establish the effectiveness of the policy in terms of rural population dynamics.

Figure 6.4: Total Population by Age Groups and Sex, Province Surigao del Sur, 2010

Since the PSA does not have categorized information for Bislig City, Figure 6.4 depicts the population by age and sex in the province of Surigao del Sur. It can be noticed that the population is very young; the bulk of the population is between 10 and 25.

6.1.3 Economy

6.1.3.1 Non-Agricultural Main Economic Areas

Aquaculture and aquamarine extraction are dominant due to Bislig City's location. The City faces the Pacific Ocean, and an abundance of aquamarine resources is evident. This activity is culturally rooted in the first settlers on the area documented as fisherfolks (Bislig City Local Government, 2016). The researcher observed that the commodity fish constitutes the principal food protein source for local consumers, which can be obtained at affordable prices compared to the rest of the region. This pricing is crucial as it is the livelihood for many local families. Commonly, the catch surpasses the local
demand, and the excess is sold to nearby markets like Davao City, Butuan, and Cagayan de Oro. Bislig has two wet markets for fish products, one in Mangagoy Barangay and a smaller one in Poblacion Barangay. Moreover, Mangagoy Fishermen Multi-purpose Cooperative (MAFISCO) has a medium-sized fish processing operation. It produces bottled tuna sold not only in the local market but also in the other provinces. Some of their products are illustrated in Figure 6.5. Two private fish processors process 80 tons per day (Department of Agriculture Bislig City, 2017).

![Figure 6.5: MAFISCO Products](image)

Source: Own figure

The second non-agricultural product is coal. Bislig City has a mine that started operating in 1981 under the contract agreement with David M. Consunji, Inc., a well-known holding group in the Philippines. The mine is located in the Barangay Pamaypayan.

Finally, tourism is still a developing sector but is becoming more robust. Bislig City has many touristic spots that attract mainly local visitors. The principal touristic attraction in Bislig City is the Tinuy-an Falls, the widest waterfalls in the Philippines. Additionally, in the last years, Bislig City has hosted many national and international congresses and clusters around the topic of organic agriculture and sustainable development, contributing to the hospitality industry's development.

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6.1.3.2 Agriculture and Forestry

“Agriculture is the driving force of economic development in Bislig City” (Navarro, 2019). Agriculture represents more than half of the population, besides 30% of the people living in rural areas. Another 30% depends on agriculture products, including people working in the market, transporters, consultants, and processors. The former mayor stated that agriculture might not be the most profitable sector, but its development has a broad impact affecting the region's household economy (Navarro, 2019).

The agricultural sector in Bislig City features some comparative advantages. The geographical location facilitates many natural resources, including biodiversity, well-preserved soils, and water sources. (Department of Agriculture, Bislig City, 2017). The weather is relatively stable compared to most countries; this means no dry season and a very pronounced maximum rainfall from November to January. The rain falls seven percent less frequent under the cyclone characteristic due to its location below the typhoon belt (Wenstedt & Spencer, 1976).

Another advantage of the region is a young rural population, which secures labor force availability for future agricultural products. In sum, all those characteristics make the agricultural sector prone to use as a beacon of the regional economy. Figure 6.6 illustrates the relative importance of agriculture and forestry according to the land use in the region and the many regional water bodies.
6.1.3.3 Secondary Economic Sectors

Mangagoy is the most populated barangay in Bislig, with 33,244 inhabitants, representing approximately one-third of the total population. It has many small and medium-sized businesses, for instance, supermarkets, pharmacies, clothing stores, and gasoline
stations. In sum, these small businesses considerably contribute to the local economy.

6.1.4 Agricultural History

Despite the common notion that the Philippines is an agricultural economy, the agricultural sector only accounts for 20% of the aggregate GDP. However, agriculture's importance looms larger when it comes to employment. Thirty-seven percent of the jobs come from this sector. According to estimates, if one considers agro-processing and agricultural inputs manufacturing and trading, the agribusiness sectors, and basic agricultural production, around two-thirds of jobs in the economy arise from agriculture (Habito & Briones, 2005).

Despite the importance of agriculture for the country’s economy, this sector displays the most erratic growth than other sectors (compare Figure 6.7). The considerable growth and dramatic slowdown depict volatile and fluctuating sectors, mainly because of the lack of resilience toward unfavorable weather conditions combined with low overall land productivity.
The Philippines' major agricultural commodities are rice, corn, coconut, sugarcane, bananas, livestock, poultry, fisheries, and forestry. Traditional exports are sugar and coconut; additionally, products such as bananas, coffee, mango, pineapples, and cacao have been growing under the range of non-traditional exports. In parallel, agricultural non-food products such as palm oil and rubber crops have been gaining importance in the rural sector (Habito & Briones, 2005).

Food and Agriculture Organisation (FAO) Philippines report an agricultural employment rate of a stagnant 35% and an average 18% GDP between 2004-2010. Compared with the Asian counterparts of Malaysia, Thailand, and Indonesia, where the agricultural GDP ranges between 9-14%, it indicates a faster expansion of their agriculture to agro-FSs. The number of farmers in the Philippines is approximately 4.8 million, consisting of 90% small producers. There are 1.6 million fisher folks reported.
In terms of the agricultural trade balance, the Philippines end up as a net importer of food. The quantity was close to two million tons annually between 2004 and 2010. The main import is cereals and cereal preparation. This sharp increase is due to rice importations. In 2010, the administration advocated to increase self-sufficiency and started investing in irrigation systems and other farm inputs (FAO, 2012).

The Country Programming Framework Philippines, 2012-2018, was developed by the FAO reporting significant issues that limit the stable growth of the agricultural sector in the Philippines. Those issues are summarized as follows:

- Growth in the agriculture sector is a struggle with the high cost of inputs, inefficient supply chain, inadequate capital investments in infrastructure, irrigation, other public goods, low adoption of technologies, and limited access by small producers to formal credit and financing.
- Too much reliance on traditional crops such as rice, corn, sugarcane, and coconut.
- Vulnerability to extreme impacts of climate change and other environmental hazards.
- Over-delayed implementation of asset reforms.
- Environmental degradation is compounded by weak management of resources, weak enforcement of policies and laws, inadequate control of information systems, and underfunding of most ecological programs, including climate change (FAO, 2012).

**Status of Organic Agriculture in the Country**

The organic agriculture in the Philippines has been principally marked with Republic Act No. 10068, commonly known as the
Philippine Organic Agriculture Act, on April 06, 2010. It regulates and promotes the different organic agriculture movements in the Philippines. Before the regulation was established, a few organic third-party certified producers, natural farmers, non-government and community-based organizations, and private groups pushed for agriculture sector reforms.

In summary, this governmental policy aims to encourage organic agriculture in the country by forming one sub-division in agriculture, which crafted the first national organic agriculture program during 2012-2018. This agricultural subdivision includes annual nationwide organic agriculture festivals and incentives for adopters among their measurements. It is essential to highlight that one of the policy's leading indicators is to reach 5% of the total agricultural land under organic agriculture practices, followed by the labeling issue of only considering TPC as the unique, organic guarantee system (Republic Act NO. 10068. Organic Agriculture Act of 2010 Implementing Rules and Regulations, 2019).

In terms of planted areas under organic agriculture in the Philippines, Research Institute of Organic Agriculture (FiBL) and IFOAM international reported 14,134 hectares of organic rice, 784 hectares of cocoa, 281 hectares of coffee, 15,526 hectares of tropical fruits – mainly bananas and mangos – as well as 111 hectares of different sorts of vegetables (FiBL, 2019). The most significant crop is coconut, with almost 150,000 hectares, the largest worldwide. The Philippines reported 166,000 organic food producers, holding second place in Asia. First place is held by India, with 835,000 organic farmers (FiBL & IFOAM, 2018).
In terms of organic agriculture in Bislig City, data about organic food producers started to be collected by the local administration in 2015. By 2018, it was reported that 20.6% of the total rice farmers, 6.7% of corn, and 20.8% of vegetable farmers are producing under organic standards, none of them certified as organic producers. A total of 232 farmers have been recognized by the local administration as organic farmers, cultivating 136 hectares. Forty pieces of organic agriculture training were conducted in the years...
2016 and 2017, with 1,395 and 443 participants accordingly. Twenty-six organic farmer associations were reported in 2017 (Agriculture Office Bislig City, 2018).

6.1.5 Food Environment and Food Consumption Patterns

Filipino food is shaped by Philippine history, and the society consists of a Malay matrix, with influences from blended cultures. For instance, Chinese and Indian cultures impact the food culture through trade, some Arabian influence through trade and Islamization, Spain and America through colonization. More recently, globalization trends influence today’s Filipino food heritage (Kirshenblatt-Gimblett & Fernandez, 2003).

There is a unique path to understanding Philippine food by examining the process of indigenization, which brought in, adapted, and then subsumed foreign influences into the culture. The most discernible and permanent traces left by foreign cultures in the Philippines are often not recognized as foreign and are so thoroughly absorbed into the native lifestyle. That is indigenization; in the Philippines, the process starts with a foreign element and ends with a dish that can be part of the Philippine cuisine (Decamora, 2017).

Three hundred years of Spanish rule have a strong influence on the food in the Philippines. The Spanish brought their cuisine, and many of these foods were adopted into the Filipino diet. Here is a list of some of them: corn, flour, squash, avocado, sausage, beef, guava, sapodilla (chico fruit), papaya, cabbage, cocoa, potatoes (white), ham, coffee, beer, bread (made from wheat flour), pickles, sardines. The Spanish also introduced forks, spoons, plates, and cups to the Philippines. To this day, forks and spoons are used when eating – but not knives (Hays, 2019).
The typical Philippine diet revolves mainly around local foods, especially vegetables, pork, seafood, and rice and noodles. Filipinos are very familiar with Western foods and fast foods, and today's diet is a mixture of these influences. Westerners familiar with Spanish-influenced cuisine will recognize the Latin-based Menudo-type stews, the Cuban-style pork dishes, the tapas-like appetizers, and Asian and Polynesian ingredients origin (Decamora, 2017).

Most main dishes are stews made with chicken, pork, fish, or seafood. Common spices and flavoring include vinegar, patis (a very salty, fermented fish sauce), bagoong (spicy shrimp paste), banana ketchup, lemon, coconut milk, chilies, bay leaves, and garlic. It has been observed that Filipinos like the sour taste made from a mixture of vinegar and unripe tamarind seeds (Hays, 2019).

Rice is a crucial part of the Filipino diet as an allusive proverb states, “a meal is not a meal without rice” or “rice is power.” A portion of rice is served at every meal, as well as seafood and preserved vegetables. A typical Filipino meal consists of a seafood or meat dish served with soup, vegetables, rice, tea, or coffee. In much of the Philippines, breakfast, lunch, and dinner are the same: Filipino-style rice with meat and vegetables (Hays, 2019).

6.1.6 Organic Certification

During the data collection, there was not a certification system established in Bilic City. Although there is an ongoing process to develop a PGS, organic agriculture's current law in the Philippines allows the third party to be the only valid organic certification (REPUBLIC ACT NO. 10068, 2019). It is doubtful that a plain farmer in Bislig City could financially access a TPC (Tagupa, 2019a). The local administration is currently waiting for an amendment of the current law by making all the pre-settings to facilitate the PGS, which fits better for regional farm characteristics. As the vast
majority of Bislig City farmers are small businesses, they have between one and two hectares (Tagupa, 2019b).

The producers are the PGS core since they evaluate themselves through peer to peer review (IFOAM, 2019). However, In the future establishment of the PGS, there will be other organizations that need to be involved in the development process. The Local Administration (LA) creates legal tools that allow the mobilization of resources by establishing the PGS being included in the governmental agenda. This plan would enable funding and facilitate services like training centers to transport and engage their departments, especially the Department of Agriculture (DA) and nutrition and planning office. The LA plays a second internal controller since it is interested in auditing the policy outcomes and improving where needed.

The NGO MASIPAG is in charge of the fieldwork, grouping, and organizing of training activities for the producers. This organization forms the different stakeholder clusters for the correct establishment of the PGS. Close collaboration between these two organizations is vital for the success of PGS in the region (Tagupa, 2019b).

External entities like IFOAM and League of Organic Agriculture for the Municipalities and Cities in the Philippines (LOAMC-Ph) serve as consultants and connect the OFS to the external world. Thanks to LOAMC-Ph Naturland, Germany has shown interest in auditing the certification process and forming a commercial partnership.

The framework for OFS case studies emphasizes the importance of the guarantee system and the use of this organic food label as the boundary of the case study. The fact that the certification is not established presents a burden. Therefore, the limit has been adapted to cover the organic agriculture program. This decision was made through a practical agroecology approach among food producers covered by the plan.
6.2 Overview of the OFS in Bislig City

The OFS in Bislig City traces back to 2007 with the complete shutdown of PICOP Inc. In previous decades, the company was one of the most prominent players in Asia's paper industry and drove economic development in the region. The closure of PICOP Inc. was attributed to the company's inability to cope with the pressures of globalization.

After this event, Bislig City fell into a crisis. Figure 6.3 depicts the declining population due to migration, with the poverty incidence reaching 45.5% by 2006 in the Caraga region (Mangahas, 2010).

Indeed, the city needed to look for a different economic focus and eventually recovered from the socio-economical damage caused after the closure. In 2010, the newly elected mayor began his mandate with a “scanning of the area” in terms of competitive advantages. Agriculture resulted in a new sector due to the abundance of natural resources like water, biodiversity, well-conserved soils, and mild weather (Navarro, 2019). Despite the emigration phenomenon, the rural population is young and stably growing. The assessment recognized aquaculture and tourism as side economic sectors with potential development.

In the following years, 2012 to 2014, the local administration, with the support of the NGO Institute for Solidarity in Asia (ISA), enforced internal restructuring based on previous assessment results. Both organizations came out with a reformulation of the vision and mission for 2015 to 2020. The past version was aligned with the defunct paper industry.

In early 2015, the city council agreed to pass a legal ordinance for the city mission and vision reformulation and consent to using governmental resources required for the development (Tagupa, 2019b).
In contrast, in 2012, the neighboring municipality Dumingag, Zamboanga del Sur, won the one world award granted by IFOAM and Rapunzel, Germany. This event inspired LA to advocate towards the transformation of agricultural practices in the region. Furthermore, the mayor was an active member of the League of Organic Agriculture for Municipalities in the Philippines (LOAM-Ph). When the organization embraced only municipalities, cities were not included in the model. Nevertheless, the LOAM-Ph fully supported the mayor’s initiative and created further partnerships.

So, once having the legal ordinance in place and the mission, vision, and core values clearly defined, the local administration deployed a set of strategies that pushed Bislig City into the journey toward transforming the FS. The first action was the creation of the City Organic Agri-Fishery Complex (COAFC). The LOAM-Ph officials led the master plan for the research-training center facilities and its protocols in October 2015.

In 2016, Bislig City became part of the Asian Local Government for Organic Agriculture (ALGOA) during the foundational course in South Korea, where the mayor and head departments participated. Additionally, in 2016, the city of Bislig joined and hosted the first assembly of the League of Organic Agriculture for Component Cities (LOACC).

On the way, two significant constraints could compromise the sustainability of the program. The organic farmers had barriers to access the market due to high transportation costs and a lack of differentiation between organic and conventional products. In response to that, the local government implemented two strategies. The first constraint was the organic farmers market (TABO) in a different location than the conventional fresh market. Also, Bislig City Organic Consolidators and Marketing Cooperative (BISCOCOMACO), the cooperative for organic products with a price
incentive for organic rice and accessible transportation for farmers. The second constraint was the program's continuity during the next mayor's term; hence, the multi-sectoral government coalition was created to keep the program parameters continuous.

At the beginning of 2017, Bislig City held the LOAM-Ph general assembly. During the event, the institutional framework was modified due to cities' incorporation in the organizational model. This model became the LOAMC-Ph league of Organic Agriculture for Municipalities and Cities in the Philippines. In the same year, Bislig City started a sisterhood partnership with Kisarazu, Japan.

Bislig was gaining a reputation among the local Asian government and the organic agriculture sector. In May 2017, during the second Organic Asia Congress in Xichong County, Nanchong City, China, Bislig City was announced as the third Organic Asia Congress host who was confirmed after additional audits in the later months.

To speed up organic agriculture's knowledge diffusion among the rural communities and barangays where the LA created the Barangay Organic Agriculture Workers' strategy. Their legal ordinance was formed in late 2017. Facing the reality that enrolment in agriculture from a young was very low, the LA launched a scholarship program to foster high school and senior pupils' enrollment in organic agriculture courses.

One of the most important events in establishing the OFS in Bislig City was the Organic Asia Congress in September 2018. This international Congress gave many reluctant farmers a reason to join the organic agriculture program and allowed other stakeholders to support LA projects. The event was one of the most representative IFOAM Asia annual events, and it brought together advocates and practitioners from Asia and all over the world. “Hosting such a prestigious event was a challenge for all the preparation that is needed especially for a developing city like Bislig” (Navarro, 2019).
At the beginning of 2019, there was a shakeup because of the LA elections, which ended the mayor’s term and created a new majority from a different party. The most representative event that year was the general assembly of the LOAMC-Ph held in June 2019. Figure 6.10 illustrates the most anticipated events in a temporary parallel line that influences the establishment of an OFS in Bislig City.

![Figure 6.10: Parallel timeline Establishment of the OFS](source: Adapted from Bislig City Local Government, 2016; LOAMC-Ph, 2019; Tagupa, 2019b)

### 6.3 Key Foundational Principals

The reflection of the OFS principals in Bislig City is connected to the foundational principles of organizations that contribute to the FS's transition. The LA started the organic agriculture program in 2015, and it is considered an influential actor in the FS. Furthermore, the vision of the LA was aligned with the organic agriculture principles.
Table 6.1: Bislig City Former LA Vision, Mission and Core Values

<table>
<thead>
<tr>
<th>Vision</th>
<th>The model city for organic agriculture in the Philippines by the year 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mission</td>
<td>To improve the quality of life of every Bisligonian by providing excellent services and facilitation economic opportunities in a God-centered, life respecting and environmental loving governance with an empowered citizenry.</td>
</tr>
<tr>
<td>Core Values</td>
<td>Integrity, Courage, Accountability, Resilience and Sustainability</td>
</tr>
</tbody>
</table>

Source: Adapted from Planning Department Bislig City, 2016.

Although the local FS's transition was not an isolated initiative of the LA, it is essential to consider how external organizations influenced the change using inspirational and formational processes. LOAMC-Ph, ALGOA, and IFOAM Asia played an important role in printing Bislig’s FS's foundational principles. Those entities aimed to transmit their values in the training, consultations, and interactions with the local administration. Hence, those values are indirectly rooted in the OFS in Bislig City.

ALGOA, as the daughter organization of IFOAM Asia, shares the same values. IFOAM, as the umbrella of the organic world, proposes the following principles as a beacon for diverse organic agriculture movements.

Table 6.2: Foundational Principles LOAMC-Ph, ALGOA and IFOAM

<table>
<thead>
<tr>
<th>LOAMC-Ph</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vision</td>
</tr>
</tbody>
</table>
Mission: Lead the promotion of sustainable organic agriculture programs in the country, through the help and participation of the general membership.

ALGOA & IFOAM key principals

<table>
<thead>
<tr>
<th>Health</th>
<th>Organic Agriculture should sustain and enhance the health of soil, plant, animal, human and planet as one and indivisible</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ecology</td>
<td>Organic Agriculture should be based on living ecological systems and cycles, work with them, emulate them and help sustain them.</td>
</tr>
<tr>
<td>Fairness</td>
<td>Organic Agriculture should build on relationships that ensure fairness with regard to the common environment and life opportunities.</td>
</tr>
<tr>
<td>Care</td>
<td>Organic Agriculture should be managed in a precautionary and responsible manner to protect the health and well-being of current and future generations and the environment</td>
</tr>
</tbody>
</table>

Source: Adapted from IFOAM, 2019; LOAMC-Ph, 2019.

6.4 Key Organizations Involved

A more illustrative description of Bislig’s FS elements was created to fit the critical organizations into three categories: internal organizations, external organizations, and farmers. This last category could also pertain to internal organizations; however, it was considered a separate group for simplicity.

Table 6.3: Key organizations divided into categories

<table>
<thead>
<tr>
<th>Internal organizations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local Administration</td>
</tr>
<tr>
<td>Mayor’s office</td>
</tr>
<tr>
<td>Schools</td>
</tr>
</tbody>
</table>
6.4.1 Internal Organizations

The internal organizations are considered recognized institutions that mainly operate within the territorial boundaries of Bislig City, and their performance is directly linked with the FS. The key organizations are listed below:

The local administration: This is the foremost organization in this case study as the organic agriculture program's leading promoter. The governmental body, like other city administrations, has many branches. All of them are related to the food system due to the vision and mission they share. Only a few departments can be considered critical and influential organizations of the FS: The Mayor's office, the DA, COAFC, and TABO. The functions of those organizations are directly linked to the OFS.

The Mayor's office: This sub-organization is composed of the Mayor as the chief executive with other department heads. The office has many duties, among them, relationship building with different administrative departments. This office plans, assesses, and controls the policies and other strategies to reach governmental agenda goals. This office serves as the first connection with external organizations.

DA: This department is principally responsible for the local agricultural sector's regulatory affairs and development. To do so,
the DA provides technical assistance for farmers to improve their skills, develop capacity, distribute subsidized agricultural inputs, and control investments of the LA, such as irrigation systems, seeds, fertilizer, and livestock distribution.

Moreover, this department carries out internal statistics, like livestock inventories, planted area, number of farmers, and other relevant sector information. The veterinary office is also part of the DA.

COAFC: This is an educational training and research center for organic agriculture. It has a 27.5 hectares demonstration farm with a great variety of crops. Coconut, fruit trees, cacao, bananas, pineapples, corn, and rice are the dominant crops. However, there also vegetables, herbs, root crops, and mushrooms. COAFC also has eight ponds for aquaculture, free-range poultry, swine, goats, sheep, and three carabaos for the hard work. In terms of facilities, the COAFC has a rice mill, vermicompost area, waste-based biofertilizer production, feed mill, transformation, and a food research center, dorms, classrooms, and a conference room.

The COAFC has different training and education programs for the local community. It offers recent graduate students, farmers, farmer communities, future trainers, agricultural technicians, and non-agricultural citizens like military forces or government employees. These organizations are also frequently chosen as a venue for seminars on organic agriculture by external entities. Those education programs are backed academically by the LOAMC, which also advises and controls new technology implementation.

Regarding research, the COAFC conducts projects in bio-fertilizer development, sourced by the city market waste, creating a circular economy concept. The COAFC produces different biofertilizer types used to meet various crops' nutritional needs while keeping to the organic standards. It also has projects for developing agricultural
techniques for local crops to increase climate change resilience. Creating and transforming organic food processing areas allows for the innovation of food products and improves the existing products' characteristics.

This organization is essential to the organic agriculture program in the city. As the LA proposed to become a model city for organic agriculture, the training center was one of the central pillars. COAFC is acknowledged and designated as the Organic Education and Social Innovation Institute of IFOAM Asia and was recognized in 2019. It added a social perspective for broad community inclusion and is dedicated to alleviating the lives of Bisligonians using sustainable farming (City of Bislig, 2018).

Although the LA fully funds this organization, the governing body comprises representatives from various sectors, not only public ones. For this analysis, the COAFC is not exclusively part of the LA and has been considered part of the stakeholder education group.

TABO: In response to the limited access of existing organic food producers, the local administration started a smaller market in the city hall every Friday. With approximately 50 square meters and eight to ten stands, organic farmers are encouraged to display both their agricultural products and processed food.
Other organizations play an essential role in the OFS, apart from the local administration, as critical organizations and stakeholders in the OFS in Bislig City.

Multi-Sectorial Government Coalition: This non-governmental organization is in charge of complying with the community interests outside of the changing majority. The mayor’s claims play a crucial role in the continuity of the organic agriculture program. The program's sustainability would be highly compromised if the incoming mayor’s interests pointed in a different direction. To secure a successful transition of implemented policies, influential sectors of the civil society joined to create this organization, which was instituted in 2017. The multi-sectoral government coalition comprises members of the church, the department of education, teachers, a food processor, representatives of the city chamber of commerce, the local government interior, and rural women's organizations (City of Bislig, 2018).

BISCOCOMACO: This cooperative seeks to consolidate a stable market for organic products. Thus, it displays a marketing strategy for reaching markets and getting new customers outside of Bislig City.

Figure 6.11: TABO Organic Market Bislig City
Source: Own figure
The cooperative buys and picks up organic farmers' products directly and searches for sale after that. Furthermore, the organization offers a price incentive for organic rice granted by the local administration. The cooperative is independent of the LA; however, they work closely together. This cooperative is highly engaged with the multi-sectoral government coalition since the cooperative representatives also participate in the multi-stakeholder organization.

Food Market Bislig City: This organization is out of organic food boundaries. Since it generally sells conventional agricultural products, there is no physical distinction between traditional and organic produce. Nevertheless, it plays a vital role in the OFS because the market is the principal food provider of the Bisligonians, and sometimes organic farmers sell their products there.

The food market is divided into three parts. The wet market is where the meat and fish are sold. This part of the market displays an immense variety of sea products. The scene is filled with enormous tuna and shrimp, anchovy, sardines, mackerel, scad, shad, and milkfish, crabs, pulps, oysters, and exotic products are readily available. There is also a small section with chicken and pork products and a smaller section for beef.

On the other side of the market, the new market section is divided into two subsections: the fruit section with tropical varieties like pineapples, watermelons, mangos, bananas, and guava, papayas, oranges, lemons, and other local fruit varieties. There is also the vegetable and root section with cassava, potato, ginger, garlic, onions, and carrots, vegetables like eggplant, ampalaya, string beans, okra squash, cauliflower, cabbage, chayote, and bell pepper.

The final part of the market has processed food, including local specialties like rice cake, sticky rice, cooked cassava, grilled bananas, banana chips, and coconut sugar.
6.4.2 External Organizations

The category of external organizations encompasses all those entities, either governmental or non-governmental, which operate outside the territorial boundaries considered in this case study. These are critical organizations because they influence the FS’s transformation or work closely with the local FS.

ISA: This organization supports the local administration in rebuilding the internal governance structures and implementing a PGS. This system results in the reformulation of the local administration's vision and mission, which is aligned with the transformation of the FS. ISA is an NGO founded in 2001, working closely with national government agencies, LGU, and hospitals to spur growth in the country through consulting to establish the PGS, training, and related events (ISA, 2019).

IFOAM: This organization traces back to 1974. It is currently the umbrella organization for the organic world, uniting a diverse range of stakeholders contributing to the organic vision. This organization has three functions. First, it facilitates capacity development for sustainable production. Second, it raises awareness through campaigning and acting as a resource center for organic communications. IFOAM also hosts and promotes numerous events. Finally, regarding policy and guarantee, the federation advocates and supports creating a favorable policy environment. It raises awareness for integrating truly sustainable agriculture into policies dealing with food security, climate change, and biodiversity.

As is typical for such an international organization, it is divided into regional branches, and the sectional work with Bislig City is IFOAM Asia (IFOAM International, 2019).

ALGOA: IFOAM Asia initiated this organization in 2013. As a daughter organization, it aims to foster dialogue and cooperation
among Asian local governments to develop organic agriculture and related industries. ALGOA has conducted the training of crucial Bislig governmental officials on organic agriculture, and it is continuously exchanging information regarding best practices and innovation on organic agriculture (AGLOA, 2019).

LOAMC-Ph: This was created after a series of events that involved international recognition of some municipalities in the Philippines to develop sustainable agriculture and social inclusion. The concept is to have organizations that encourage LGU to introduce more sustainable governmental management through organic agriculture. Consequently, the LOAM-Ph was funded and was initially created for municipalities. Subsequently, cities and provinces were included.

Seven municipalities pioneered the league, and now it has expanded into 120 municipalities and cities all over the Philippines. Today, the project's general objective is to bridge leadership and governance in asset-based sustainable organic agriculture through the municipal or town management team. This team comprises the local chief executives and their respective municipal agriculturists, municipal organic focal persons, and municipal planning development coordinators.

The capacitation runs one year, focused on developing and implementing the Family Farms Investment Master Plans and upscaled the Municipal-Wide Investment Master Plans experience (LOAMC-Ph, 2019).

In Bislig City, LOAMC-Ph has been a vital component of the FS engine. It has facilitated the first contact of Bislig with external organizations like ALGOA and IFOAM. Similarly, the league was a supporter of the LA in the transitions of the OFS by improving the organic agriculture education system, training the governmental personnel, monitoring and evaluating the policies and investments,
marketing services, climate resilience research, and innovation services.

It has been observed that the relationship between LOAMCP-Ph and Bislig City has been reciprocal. On the one hand, Bislig City's community has benefited from the entity's support through the LA policy. On the other hand, Bislig City is the first component city in implementing the organic agriculture program. Therefore, the LOAMC-Ph has learned from its experience on this transformational path. The success of the implementation policy serves as inspiration for other municipalities to join LOAMC-Ph.

Magsasaka at Siyentipiko para sa Pag-unlad ng Agrikultura (MASIPAG): This organization is a farmer-led network of people and organizations, NGOs, and scientists are working toward the sustainable use and management of biodiversity through farmer control of genetic and biological resources, agricultural production, and associated knowledge. The NGO has been working on preserving the agricultural biodiversity among farmer communities by contributing to community empowerment. It also supports the organic agriculture movement and has established rice seed banks in some Bislig farmer communities.

6.4.3 Description of the Farm and Farmer Characteristics in Bislig City

This category of farmers or food producers is analyzed. The category does not contain any sub-unit or specific organization; it represents the bulk of food producers and the case study.

By 2015, the Bislig City Agriculture Office reported 1,974 farmers and 1,740 fisherfolks (Agriculture Office Bislig City, 2018). On average, the farm size is approximately two hectares in Bislig City (Tagupa, 2019b), which is smaller than the average size in the region of Caraga, namely 2.6 hectares (Philippines Statistics
The bulk of the farmers is between 35 and 44 years old, and the average household size is 5.2 people. Despite gender, distribution is relatively balanced 53.6% female, and 46.4% male (Bachmann & Wright, 2009), and 90% of farmers or agricultural operators are male (Philippines Statistics Authority, 2019). On the national level, approximately 12% of the community have no education, and 18% have reached tertiary education. The rest of the population has an elementary or high school level education (Bachmann & Wright, 2009). At the national level, farmers work six to seven hours per day, and 75% can afford additional laborers. However, some rely more on communal labor schemes, such as the Bayanihan (Bachmann & Wright, 2009). Table 6.2 depicts the average crop of the farm area of farmers, along with the Philippines.

During data collection, it has been observed that farmers belong to farmer communities within the barangays. Those communities bring advantages that facilitate the life of the farmers and their families. A farm with 0.7 to 1.2 hectares does not represent enough income to sustain an entire family with all its expenses, especially considering environmental factors compounded by ongoing price fluctuations for agricultural commodities and increasing input costs. It has been observed that the farmer or community members collaborate with inland labor in the communal labor scheme of Bayanihan. Additionally, the community has a food sharing principle that benefits families, especially during a shortage.

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The livelihood of farmer families produces net agriculture income. The family food value has increased due to the additional food the family gets from the community. The profit from agricultural produce, namely rice, bananas, or coconut, belong to the farmer. In the end, the household benefits from being in a farming community, both for the food the family could receive or the lower expenses due to the communal labor scheme.

Additionally, it is quite difficult for the local administration to designate subsidy inputs for each small farmer. However, those subsidy inputs have a more significant impact on the farmer community. For example, one Carabao is more effective if used among the farmer’s community instead of only a single farmer utilizing it and carrying its full cost. Crop diversity and capacity building turn positive when used in the farmer community and do not rely solely on the farmer.

Today, the number of farmer communities in Bislig City is not reported. The LA recognizes them, and culturally they could have a name or sort of identification. However, precise information like the number of farmers, type of crops, and the area farmed is still lacking.
Table 6.4: Land Distribution of Organic Farms in the Philippines.

<table>
<thead>
<tr>
<th>Land use</th>
<th>1 (ha) Plot</th>
<th>2 (ha) Plot</th>
<th>3 (ha) plot</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rice</td>
<td>85%</td>
<td>34%</td>
<td>28%</td>
</tr>
<tr>
<td>Other crops</td>
<td>6%</td>
<td>24%</td>
<td>30%</td>
</tr>
<tr>
<td>Pastures</td>
<td>-</td>
<td>3%</td>
<td>5%</td>
</tr>
<tr>
<td>Forest</td>
<td>-</td>
<td>1%</td>
<td>6%</td>
</tr>
<tr>
<td>Fallow</td>
<td>0.6%</td>
<td>3%</td>
<td>2%</td>
</tr>
<tr>
<td>Others</td>
<td>8%</td>
<td>34%</td>
<td>28%</td>
</tr>
</tbody>
</table>

Source: Adapted from Bachmann and Wright, 2009.
7. Documentation of the Organic Food System Case in Goesan County, South Korea (Min Hee Kim)

7.1 Background Information of Goesan County

7.1.1 Geography of Goesan County

According to Shin (2016), Goesan County, located in the center of South Korea (part of North Chungcheong Province), is an area within two hours of connecting with Seoul Special City. Following Figure 7.1, the size of Goesan county is 842.4 km². It consists of one town (Goesan-eup) and ten townships (Buljeong-myeon, Cheongcheon-myeon, Cheongan-myeon, Chilseong-myeon, Gammul-myeon, Jangyeon-myeon, Mungwang-myeon, Sari-myeon, Sosu-myeon, Yeonpung-myeon) (ibid.).

More than 70% of Goesan county is forested, and the average altitude above the sea level is about 250 m (Shin, 2016). There are many mountains and a few plains. Consequently, agricultural production is not as productive as in other regions as there are more fields than rice paddy fields (ibid.). Goesan County representative agricultural products include red chili peppers, corns, pickled cabbages, ginsengs, apples, Korean beef, dried persimmons, potatoes, and honey (Goesan County Office Website, 2017).
Figure 7.1: Map of Goesan County
Source: Adapted from Goesan County Office Website, 2017.

Differences in agricultural specialties exist depending on the township (Goesan County Office Website, 2017). Goesan-eup is located in Goesan County's heart and specializes in pickled cabbage, apples, chili peppers, and Cheongcheon-myeon are similar (ibid.). Gammul-myeon and Cheongan-myeon mainly cultivate potatoes, shiitake mushrooms, and ginseng (ibid.). In Chilseong-myeon and Jangyeon-myeon, waxy corn, grains, apples, peppers, and pickled cabbage are produced (ibid.). Mungwang-myeon introduced pickled cabbage in South Korea and has chili pepper and waxy corns (ibid.). Yeonpung-myeon, Sari-myeon, apple, Korean beef, and persimmon are the main crops (ibid.). Tobacco, rice, and pickled cabbage are primarily grown and processed in Sosu-myeon (ibid.). In Buljung-myeon, fruit trees and peppers are mainly grown (ibid.).
7.1.2 Demographic Information of Goesan County

According to the Korean Statistical Information Service (KOSIS) conducted in 2018, the total population of Goesan County is 39,133 (excluding foreign registrations), of which 11,407 are farm households. The average age of the people of Goesan County is 52.5 years. The proportion of the elderly aged 65 and over is 11,898, 30.93% (ibid.). The elderly make up 76.5% of single households (ibid.). Furthermore, the growth rate is continuously at a rate of 0.45% (ibid.). Goesan County has a relatively aging population.

South Korea is composed of a single ethnic group (Ha, 2018). However, the influx of foreigners to South Korea is increasing due to marriages and businesses (ibid.). The concept of multicultural families has grown due to international marriage in modern society (ibid.). Goesan County is also included in this trend (Chungbuk-do, 2018). There is a total of 800 registered foreigners in Goesan, 510 males and 290 females (ibid.). This group consists of 214 Chinese, 164 Vietnamese, 40 Filipinos, 10 Pakistani, 6 Bangladeshi, 1 Canadian, and 291 foreigners from other countries (ibid.). These are foreigners looking for work and those who have migrated due to marriage (ibid.).

South Korea has the highest literacy rate, close to 100%: 99.2% for men and 96.6% for women (Malejane & Diraditsile, 2019). Most South Koreans can read their native language (ibid.). Therefore, there is not a problem communicating information through paperwork (ibid.). Approximately 2% of South Koreans cannot read Korean, but they can receive free Korean Language lessons at the county office or the village community (Goesan County Office Website, 2017).
7.1.3 The Economy of Goesan County

According to Chen (2016), Korea's total population is 50,329,699, which is 0.70% of the world's population. In 2013, South Korea accounted for 2.45% of global GDP of the world's GDP, with a total GDP of $1,305,604,961,393 and the GDP per capita of $25,997.88 (ibid.). The total amount of exports amounts to $1,292,923 million, of which 3% of the global export and import and per GDP, it is 102.77% (ibid.). The total land area is 97,466 km², of which the arable land amounts to 1,495,800 hectares (ibid.). Total freshwater is 25.47 billion m³ (ibid.). As shown in Figure 7.2a, 2.34% of the real GDP is assumed from agriculture, 38.41% from industry, and 59.25% in services (ibid.).

According to 2010 (Figure 7.2b), agriculture makes up 6.6% of the total labor force, 6.60%, 17% for industry, and 76.40% for service (ibid.). South Korea's economy is based on the secondary and tertiary sectors rather than the primary sector (ibid.). This means that agriculture is not an essential industry in South Korea (ibid.).

![Figure 7.2: (a) % of GDP in 2013 and (b) % of Labor Force in 2010](Source: Adapted from Chen, 2016.)

There are various industries in Goesan County: mining, accommodations and restaurants, wholesale and retail, construction, electricity, gas supply business, water and sewage treatment industry, telecommunications industry, service industry, and health
industry (Chungbuk-do, 2018). Goesan County’s population has a large number of people in the service industry and agriculture-related industries (ibid.).

There were 2,818 establishments with 13,628 employees in Goesan County (Chungbuk-do, 2018). Based on these findings, 21 businesses and 185 employees were found to be in agriculture, forestry, and fishing; 340 firms and 3,788 workers were employed in the manufacturing industry. The transportation and storage industry had a total of 202 businesses and 418 laborers (ibid.).

Compared to 6.6% of South Korea's workforce, Goesan County is highly dependent upon agriculture. The total agricultural and non-agricultural area in Goesan County is 84,216 hectares, of which rice fields are 5,814 hectares, arable fields are 7,550 hectares, forests are 62,267 hectares, orchards are 270 hectares, and 371 hectares are dedicated to vegetable production (Goesan County Office Website, 2017). The total population of Goesan County is 39,854, and 11,649 are involved in agricultural activities, which is 29% of the population (ibid.). The total number of family units add up to 20,577, and 24% (5,094) of these units are engaged in farming.

In 1948, Korea was freed from Japanese colonial rule after 35 years (Jo & Walker, 2013). Korea was divided into the Republic of Korea (South Korea) and the Democratic People's Republic of Korea (North Korea) following the Korean War of 1950-53 (ibid.). This action led to the collapse of economic and social infrastructure, with absolute poverty rates exceeding 60-70% (ibid.).

With the emergence of a military president 'Jung Hee, Park' in South Korea in 1960, the economic changes that followed were based on martial law (Jo & Walker, 2013). In the early 1970s, President Park reorganized the rural areas left through the rural development movement called the 'Saemaul Undong/ New Village Movement' (SMU), which increased the yield of food crops significantly.
(Douglass, 2013). The SMU created a tremendous economic growth called the Miracle of the Han River, which led to a sharp drop in poverty rates in the early 1990s, which dropped to 1.4% in 1992 (Jo & Walker, 2013).

In 1997, however, the South Korean economy collapsed due to the Asian Financial Crisis of 1997, and the International Monetary Fund (IMF) declared Korea's economy bankrupt (Ku, 2004). As a result, the unemployment rate continued to increase, and the total poverty rate rose to 7.9% in 2000 (Jo & Walker, 2013; Ku, 2004). As of 2018, Korea's total employment rate was 60.7%, and the employment rate in Goesan County was 64.8% (Lee, 2019). However, the unemployment rate was 3.8% across South Korea and 2.1% in Goesan County (ibid.). In 2016, The relative poverty rate was 50% in Korea and the median income was 19.5%. However, the relative elderly poverty rate was at 65.5%, 15.5% higher than the average poverty rate (ibid.). In other words, South Korea's absolute poverty rate has declined, but its relative poverty rate is high.

Various forms of support are underway to decrease poverty. Local supercenters are created at the national level to promote the self-sufficiency of beneficiaries and subordinates (Lee, 2019). The Minister of Employment and Labor declared the provision of social services and jobs to vulnerable groups and strived to improve the quality of life of residents through social enterprises (ibid.). As of 2019, there were 249 local support centers nationwide and 2,643 certified social enterprises (ibid.). Goesan County has one local self-support center and three certified social enterprises (ibid.). Food banks and food markets are a form of welfare that supply surplus food and household goods from food manufacturers, distribution companies, and individuals to support low-income families, the elderly living alone, and the disabled (ibid.). In 2018, there were 470 total food banks and 129 local food banks. There are two food banks
and one food market in Goesan (ibid.). On average, the food banks in Goesan County supply 455 food items per year (ibid.).

7.1.4 Agricultural Background in South Korea

The Japanese imperial government caused land reforms through the Japanese colonial era (1910-1945), which led to the loss of large-scale landowners (Chung, 2006). As a result, South Korea has only existed with tenant farming and is still farming with less than one hectare of land per farmer (ibid.). Rice is the staple food in South Korea (Lee et al., 2005). Therefore, most producers choose to grow rice and produce other crops to supplement the remaining farmlands (Muller, 2014). However, the consumption of rice has currently decreased considerably. Therefore, the cultivation and production of other vegetable crops, dairy, and meat products have increased significantly in Korea and generate more farmers' income than rice (Neszmelyi, 2016).

Kimchi is an essential part of the Korean diet and economy (Cho, 2006). Thus, the cultivation of Chinese cabbage, garlic, and red pepper is necessary (ibid.). South Korea is highly dependent on imports due to adverse weather conditions (Lee et al., 2005). Luckily, Chinese cabbage grows all year round in any weather conditions, meeting market demand (ibid.).

In South Korea, vegetables and fruit are cash crops for producers (Neszmelyi, 2016). Various fruits, including tangerines, apples, Asian pears, strawberries, persimmons, and peaches, are cultivated (ibid.). The main cash crop in South Korea is ginseng. Korean ginseng accounts for more than 99% of the world's ginseng production (Baeg & So, 2013). Ginseng is also a healthy, functional food exported overseas in various processed forms to increase income (ibid.).
Livestock is not mainstream in South Korea. However, through the 1970s SMU, the livestock industry expanded as quickly as agriculture (Neszmelyi, 2016). In particular, the livestock industry's inefficient livestock farming system has disappeared, and production has increased due to more extensive scale and modern production (ibid.). As Koreans' economic conditions improved and Koreans' eating patterns changed, beef, cows, pigs, and poultry also increased in the diet (ibid.).

According to the Goesan County Office Website (2017), grain crops, vegetables, fruits, and livestock are mainly produced in Goesan County. The highest yield crop is rice, followed by corn, potatoes, and soybeans (ibid.). Korea has specialties like red pepper, pickled cabbage, ginseng, waxy corn, apples, and Korean beef (ibid.). Chinese cabbage is the most prolific crop, followed by cucumbers, tomatoes, watermelons, peppers, and garlic (ibid.). The main fruits grown are apples, but peaches, persimmons, pears, with grapes grown on a smaller scale (ibid.). Livestock includes poultry, pigs, cattle, and cows (ibid.). The County directly operates an online shopping mall called ‘Goesan Jangter/Goesan Marketplace’ where direct transactions with consumers are made.

As of 2014, South Korea's average GDP per capita was $27,398, while South Korean farmers' GDP per capita was $12,593, 45% of the national average (Jang 2017). In other words, agriculture in South Korea is still in developing countries (ibid.). The rural society was also reorganized through SMU, but city-centered development is still active, resulting in a difference in income between urban and rural communities (ibid.). For this reason, women's social participation has increased in rural areas (Lim & Song, 2010).

The South Korean rural area is a mixture of traditional and modern norms (Lim & Song, 2010). Agricultural work is mainly centered on men; however, house chores and parenting are female-orientated
(ibid.). Nonetheless, as women's social participation has expanded in modern society, so did women's role in rural areas (ibid.). Unfortunately, women's inequality in agricultural societies is worse than in urban areas (ibid.). The rural regions of South Korea are patriarchal, and men create external networks in rural communities (ibid.). However, women are building internal networks centered on communication; thus, most peasant societies in Korea remain in the form of cooperatives (Lim & Song, 2010; Neszmelyi, 2016). The sense of community in the countryside has been disappearing now, more than in the past (ibid.).

In South Korea, if the global competitiveness of organic agriculture in the FS is achieved, the agricultural and fishery food industry can serve as a new solution to the pending problems (Lee & Hwang, 2012).

7.1.5 Food Environment in South Korea

As of 2015, the self-sufficiency rate of grain in South Korea was 23.8%, lower than the world average (Jang, 2017). In South Korea, only two varieties of rice (self-sufficiency 101.0%) and potatoes (self-sufficiency 94.6%) are locally produced, which meet market demand (ibid.). All other grains are imported (Choi, 2015). Notably, wheat and corn have a self-sufficiency rate of less than 1% (Jang, 2017). International dependence is a severe issue.

Due to climate change, South Korea's agriculture is directly affected by the production and import of significant grains (Won et al., 2019). Rice is the most critical crop in South Korea (Lee et al., 2005). However, South Korea's climate cannot produce a rice harvest three times a year like Southeast Asia. Rice can only be harvested once in South Korea (ibid.). Therefore, the amount of rice that can be produced is limited according to the Representative Concentration Pathways 8.5 scenario provided in the Intergovernmental Panel on
Climate Change Fifth Assessment Report (Won et al., 2019). It is expected that the rice self-sufficiency rate in South Korea will be 55% in 2050 if greenhouse gases (GHGs) emissions increase continuously (ibid.).

Because of changes in eating habits, reduced rice consumption has increased the economic hardship of producers (Lee, 2018). At the national level, the South Korean government provides various ways to protect farmers (ibid.). First of all, governmental efforts are being made to stabilize farmers' lives using subsidies (ibid.). Moreover, the government protects farmers' income sources through substantial rice import restrictions (ibid.). Due to the World Trade Organizations (WTO) obligations, the South Korean Government was forced to remove the restricted rice imports (Neszmelyi, 2016). To overcome these limitations, the South Korean government has been pioneering new channels through agricultural export support programs since the late 2000s (ibid.). The government organizes and manages associations and helps develop products to avoid excessive competition for various agricultural products (ibid.). It also promotes exports through multiple programs throughout the supply chain (Lee, 2018).

Right after the Korean War, South Korea received food aid from the United States. However, after the SMU, South Korea no longer received food aid because of the economic growth it experienced (Muller, 2014). After the economic growth, household polarisation increased after the 1997 financial crisis (Kim & Oh, 2015). Household food security was at 88.7% in 2012 (ibid.). Nevertheless, as people's income increased and lifestyle changed, there was growing anxiety about food and nutrition (Kim & Oh, 2015). Nonetheless, food insecurity (11.7%) was higher in households with children (ibid.). Of household's food insecurity, 10.2% was transitory, and 1.5% was chronic (ibid.). The portion of
the elderly group (65 years old or older) who were food insecure amounted to 21.6%, approximately twice as high as the average (ibid.). Single households sustained 28.5% food insecurity in 2015 (ibid.). Most food-insecure families skipped breakfast but bought cheap instant and junk foods (ibid.).

7.1.6 Food Consumption Patterns in South Korea

Unlike other countries, South Korean meals mainly consist of rice, guk (soup), banchan (side dishes), and kimchi in one sitting, as shown in Figure 7.3 (Lee & Cho, 2010). Various food groups are used to prepare side dishes and soup (ibid.). These typical meals include diverse food groups: high levels of grains, vegetables, and legumes, medium to high levels of fish and seaweed, and medium to low levels of meat (Kim et al., 2020).

![Figure 7.3: Model of One Meal (3-Chup Bansang)](source)

Rice (including brown rice) is an essential part of the meal. Usually, 59.1% of consumers procure it once every 2-3 months (Lee et al., 2018). When buying rice, people check the information regarding production region (20.6%), price (18%), country of origin (17.4%), and varieties of rice (15.9%) (ibid.). The lower the household age,
the higher the proportion of the organic certification mark was found in purchases. The higher the household age, the higher the ratio of price. However, as a result of consumption intentions for imported rice, 56.7% of Koreans said they would not eat (ibid.). 44.2% consumed white rice, followed by multi-grains with rice (30.2%) and white rice with brown rice (21.1%). The purchased grains were sticky rice (24.2%), black beans (21.4%), mixed grains (15.6%), black rice (8.6%). With barley, the proportion of consumption decreases with age (Lee et al., 2018).

82.3% of households bought vegetables more than once a week. The more members in a family, the higher the household income, and the higher the householder's education level, the more vegetables were purchased (2-3 times a week). When consumers were buying vegetables, freshness (37.6%), country of origin (15%), and price (13.9%) were the most important criteria for purchase. The higher the household's income level, the more organic certification and origin were considered. (Lee et al., 2018)

According to Lee et al. (2018), 47.5% of kimchi is from family or relatives, and 42.0% are made in-house. The ratio of "receiving or buying kimchi directly from family and relatives" is 92.8% for household owners under 30, while it makes up 17.1% for household owners in their 70s or older (ibid.). According to Lee et al. (2018), consumers in South Korea acquire kimchi once every 2-3 months (40.8%) and 2-3 times a year (39.1%). When delivering kimchi, 33.3% of consumers prefer less than 2-4 kg (ibid.).

Seafood is consumed in the following order: fish, seaweed, dried fish, shellfish, mollusks (Lee et al., 2018). The serving of fish is collected once every two weeks (35.3%), seaweed is collected once a month (30.5%), while shellfish, dried fish and mollusks were collected less than once a month (44%, 44.2%, and 38.2% respectively)(ibid.). 60.3% of consumers buy the trimmed form at
the point of purchase. When purchasing seafood, consumers check freshness (37.6%), country of origin (16.5%), and appearance (14.0%) (ibid.). In modern society, meat consumption has increased more than seafood consumption. Inland consumers also reported that they consume more meat (ibid.).

In terms of meat consumption, South Korean consumers check freshness (31.7%), country of origin (17.6%), and price (13.8%) (Lee et al., 2018). The most commonly consumed meat at the household level is pork (71.9%), beef (13.6%) and chicken (10.2%) (ibid.). Adolescents had a higher preference for chicken (27.8%) than beef (21.8%). On average 97% purchase meat from domestic producers, thus, reducing the share of imported food (Lee et al., 2018).

With fruit, 75.3% of households buy fruit more than once a week or get it from acquaintances, and 0.8% of people do not purchase fruit. 1.2% of single-person households do not consume fruit at all (ibid.). When buying fruit, people value freshness (37.0%) and price (12.8%). As income levels rise, the proportion of origins tends to increase. Adult householders prefer apples (20.1%) and watermelons (16.1%). Fruit preference varied with age groups: people in their 70s prefer apples, watermelons, and melons, in their 60s pears and tomatoes, in their 40-50s peaches, in their 20-30s grapes and tangerines, and adolescents preferred strawberries and apples. (Lee et al., 2018).

According to the Korea Rural Economic Institute (KREI) (2018), consumer interest in organic products increased as their interest in health improved. However, consumers' interest in whether the ingredients were domestic products appeared to be more critical (Lee et al., 2018). 55.1% of South Koreans purchase organic foods, and 44.9% of them do not pay for organic food. 69.2% of households in metropolitan areas have a higher purchase rate than other
regions, higher household incomes, and education. Younger householders buy more organic foods (ibid.).

7.1.7 Organic Agriculture in South Korea

South Korean organic agriculture has been developed through the private sector since the 1970s (Jee, 2013). The pioneer agriculture society "Jung-nong" started organic agriculture in 1976 under the influence of the Japanese organic society "Ue-nong" (ibid.). "Jung-nong" society aims for all agricultural land to move away from chemical pollution to organic agriculture, which preserves the natural environment and ecosystem order (Kim, 2014). Korean organic agriculture was initiated to remediate polluted and chemicals soils (ibid.). In other words, organic agriculture in South Korea began as a treatment for contaminated soils (ibid.).

Organic agriculture did not deal only with agricultural sectors, but the movement linked producers and consumers through 'Hansalim' and 'Heuksalim' in the mid of 1980s (Chang, 2014; Lee, 2014). The South Korean representative of the organic agriculture institutes is 'Hansalim' and 'Heuksalim' (ibid.). These two organizations are distributed all over South Korea and Goesan (Chang, 2014; Lee, 1995; Lee, 2014). Not only is it involved in organic agriculture, but it also is involved in the distribution process, which has made South Korea's organic agriculture prosperous and stable (ibid.).

Based on these associations, the organic agriculture movement has been in development since the mid-1970s. The direct trade of organic products has been active since the late 1980s (Jung, 2006). Furthermore, the South Korean government has implemented organic agriculture policies since 1994 (ibid.). The 'Direct Eco-Friendly Payment System' was implemented in 1998; it raised interest by establishing the 'Five-Year Eco-Friendly Agriculture 5-year Plan' every five years since 2001 (ibid.). Due to a ban on the
WTO's agricultural subsidies, the Korean government has used organic agriculture to protect the producers (Jung, 2006).

The organic agriculture in South Korea has developed by solidifying governmental support and the organic certification system. However, in the beginning, the South Korean certification system had problems (ibid.). The concept of pesticide-free and low pesticide use was not well established, which confused both producers and consumers and slowed down organic agriculture. Therefore, the government replaced certification schemes with certification bodies through 'The fourth Five-Year Plan for Fostering Eco-friendly Agriculture' in 2016 (Kim, 2017).

The government's efforts are changing the way consumers perceive organic agriculture. When the certification system is strengthened, South Korean consumers will have confidence in buying organic products and are willing to pay the premium price. Consumers relate certification to food safety (Jung & Han, 2019).

7.1.8 Organic Certifications in South Korea

Environmentally friendly developments have become more critical globally since the mid-1990s. The South Korean government has also developed and fostered eco-friendly agriculture (Kim, 2017). South Korea's eco-friendly agricultural product certification system was introduced in 1999 (Jung & Moon, 2013).

There are four types of labeling: 'organic,' 'transitional organic,' 'chemicals-free,' and 'low-chemicals' (Jung & Moon, 2013). The South Korean government integrated 'switching organic' into 'organic' to reduce consumer confusion in 2007 (ibid.). For this reason, the credibility of organic agricultural products has decreased (ibid.). The government recognized that the differentiation between conventional agricultural products and organic agricultural products was not done effectively (Jung &
Moon, 2013; Kim, 2017). Therefore, the 'low-chemical' certification was abolished in 2015 (Kim, 2017).

The South Korean government introduced the Good Agricultural Practices (GAPs) certification to compensate for these weaknesses (Jeon, 2015; Kim, 2017). There are differences in certification standards and significant commodities for organic certification and eco-friendly agricultural products and GAP (Jung & Moon, 2013; Ministry of Government Legislation, 2019). Organic and environmentally friendly products limit pesticides and fertilizers at the production stage. Still, GAP ensures the proper use of pesticides and fertilizers and includes agricultural products and cultivation guidelines (ibid.). It also focuses on agrarian quality control (Jung & Moon, 2013).

According to National Agricultural Products Quality Management Service (NAPQMS), in 2017, the current organic certification was divided into four types of labels: Organic, Non-Pesticide, Non-Antibiotic, and Organic Processed Food, as displayed in Table 7.1.

Table 7.1: Labelling by Types of Organic Certifications (crops and livestock)

<table>
<thead>
<tr>
<th>Organic</th>
<th>Non-Pesticide</th>
<th>Non-Antibiotic</th>
<th>Organic Processed Food</th>
</tr>
</thead>
<tbody>
<tr>
<td>유기농 (ORGANIC)</td>
<td>농림축산식품부</td>
<td></td>
<td>농림축산식품부</td>
</tr>
<tr>
<td>무농약 (NONPESTICIDE)</td>
<td>농림축산식품부</td>
<td></td>
<td>농림축산식품부</td>
</tr>
<tr>
<td>무항생제 (NONANTIBIOTIC)</td>
<td>농림축산식품부</td>
<td></td>
<td>농림축산식품부</td>
</tr>
<tr>
<td>유기가공식품 (ORGANIC)</td>
<td>농림축산식품부</td>
<td></td>
<td>농림축산식품부</td>
</tr>
</tbody>
</table>


Organic certification includes organic crops and organic livestock (NAPQMS, 2017). Organic products are produced without the use of organic synthetic pesticides and chemical fertilizers (ibid.). The
transition period should also be considered when certifying products (ibid.). Perennial crops are considered organic after the third year of harvest and annual crops after two years. In organic livestock products, livestock should comply with the certification standards and be supplied with organic feed (ibid.).

Non-Pesticide agricultural products and non-antibiotic products mean that no organic synthetic pesticides and chemical fertilizers are used, or one-third of the recommended amount is used (NAPQMS, 2017). Additionally, non-antibiotic livestock products mean livestock products that meet the certification standards while feeding conventional feed without antibiotics, antimicrobial, and hormones (ibid.).

Organic processed food labels are only issued when all eight certification criteria are met (Ministry of Government Legislation, 2019). These eight standards are: 1) General requirements, 2) Processed raw materials, 3) Processing methods, 4) Pest and pathogen management, 5) Washing and disinfection, packaging, 6) Organic raw materials and 7) Transport of processed food and Transport and 8) ensuring documentation, documentation, and access (ibid.).

According to the Ministry of Oceans and Fisheries (NFPQMS, 2017), four labels, similar to organic agricultural and livestock products, in the organic certification of fishery products. The Non-Pesticide products' label is an alternative to the Non-Activator label. Certified organic aquatic products are related to edible marine products produced (NFPQMS, 2017). The organic processed food label covers the manufacturing, processing, and distributing organic seafood as raw materials or materials (ibid.). Non-antibiotic aquatic products include seawater aquaculture fisheries (ibid.). Non-activator marine products include gim, wakame, hijiki, and kombu (ibid.).
Table 7.2: Labelling by Types of Organic Certifications (aquatic products)

<table>
<thead>
<tr>
<th>Organic</th>
<th>Non-Activator</th>
<th>Non-Antibiotic</th>
<th>Organic Processed Food</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1" alt="Organic" /></td>
<td><img src="image2" alt="Non-Activator" /></td>
<td><img src="image3" alt="Non-Antibiotic" /></td>
<td><img src="image4" alt="Organic Processed Food" /></td>
</tr>
</tbody>
</table>


### 7.2 Overview of the OFS Case: Goesan County

South Korea began its organic movement in the 1970-80s. 'Hansalim' is one of the organizations that led the movement. 'Hansalim' is located in Goesan since the 1980s, and producers following the campaign eventually gathered naturally in Goesan, located 2 hours away from the metropolitan area (Seoul) and has a naturally clean environment. In 2000, the government actively promoted organic agriculture, invested in it earnestly, and encouraged farmers to participate. Since 2007, Goesan County has been working to ensure government support legally through the agricultural upbringing ordinance. As of 2020, there is a planned revision to the law written in 2007, accounting for current trends. Goesan County was the first to introduce the concept of 'Organic Public Management' in South Korea. 'Organic Public Management' is still in its infancy but is managed by the County office responsible for the FS production elements. This concept gives the government control over the OFS. It protects organic producers and their products, allowing them to focus on production without worrying about marketing their goods or the market. Due to these reasons, in 2012, Goesan has been declared an organic County with national policy support and the county head.
There are several organizations in Goesan OFS. There are an agricultural policy section and a team of experts supporting the county level organic industry. The agricultural policy division consists of thirty government officers, and the organic industry team consists of six public officials: the government supports international trade activities and organic agriculture. Additionally, the Goesan Organic Farmers Association (=Union) lead Goesan's organic agriculture. The Goesan Organic Farmers Association (=Union) comprises farmers who practice organic agriculture in Goesan. The subsidiaries, such as 'Hansalim' and 'Heuksalim,' also belong to Goesan Organic Farmers Association (=Union). The Nunbisan Village was the first to start the organic industry in 1969 in Goesan County. Currently, several other villages practice organic agriculture in Goesan.

The state manages organic certification in South Korea. Tests are carried out to ensure high levels of organic certification. For farmers who are new to organic agriculture, the first crop must be inspected by the agency. Three hundred twenty pesticides in the products are analyzed and scrutinized per one crop and certified as pesticide-free if they are not detected in the first examination. After pesticide-free certification, the pesticide-free accreditation has to be maintained for three years before the crop is certified with the organic labels. Crops are inspected several times a year, and the soil is examined once a year. The inspection cost for each crop is 200,000 Won (148.44 Euros), and the land-related inspection costs 400,000 Won (296.87 Euros). Since inspection costs are high, farmers cannot pay for the costs; therefore, the government supports them.

Approximately 4-5% of organic agriculture is practiced in South Korea. Most of the organic agriculture farms only cultivate rice. Goesan, however, grows more varieties of organic crops than any other region. Because there are relatively few plains and mountains
around Goesan, waxy corns, and chili peppers are the main crop. Goesan also has specialties like pickled Chinese cabbage, ginseng, apples, and beef. Organic production in the Goesan OFS is minimal; therefore, the export of organic products is limited. It is difficult for consumers to continue organic agriculture due to a lack of awareness. The consumption of organic food is a new concept, and this trend is likely to continue in the future. Goesan's government office is involved in the organic food service business. It provides organic meals to schools in Goesan and other provinces, but the local organic agriculture sector cannot produce food to meet the demand of the organic market.

In 2015, Goesan County launched the '2015 Goesan Organic Expo' and the 'ALGOA summits.' During this period, the 'Goesan Organic 3.0 Declaration' was announced, making Goesan an international County and an organic county. After this, Goesan County made the 'ALGOA summits' a place of knowledge exchange with Asian provinces and related OFS stakeholders. Goesan County Office plans to host an organic expo in 2022.

7.3 Key Foundational Principles of Goesan County Organic Agriculture

The South Korean government manages all cities, provinces, and counties according to the South Korean organic agriculture foundational principles (Lim et al., 2018). The South Korean organic agricultural industry began to be politicized by government intervention in the 2000s (ibid.). The government plans and implements an 'Eco-friendly Agriculture Promotion Ordinance' every five years to meet the Codex Alimentarius standards since 2001 (ibid.). The 'Fourth Five-Years Eco-friendly Agriculture Promotion Ordinance (2016-2020)' was launched in 2016 (KMAFRA, 2016). After providing a basic framework of the South Korean government's ordinance, each province has modified and uses the
revised framework to suit its province's situation (ibid.). Goesan County belongs to North Chungcheong Province; therefore, Goesan County follows North Chungcheong Province's motto, vision, and goals.

According to Chungcheongbuk-do Agricultural Research and Extension Services (CBARES, 2016), the main motto of North Chungcheong Province is 'by realizing organic creation agriculture, Chungbuk Realisation of Organic Specialised Provenance.' The Eco-friendly Agriculture Promotion Ordinance's vision is to foster sustainable and eco-friendly agriculture based on the people's trust (KMAFRA, 2016). There are three main goals (CBARES, 2016). First, the percentage of the organic and non-pesticide farmlands was set to increase in area by 7% and 20% by 2020, respectively (ibid.). CBARES set a reduction in productivity and minimized operating costs to less than 10% (ibid.). Lastly, CBARES establishes a goal to increase farmer income by 20% by improving organic agricultural products (ibid.). CBARES (2016) has set the following directions to achieve its objectives.

- development of safe organic agricultural products
  production methods, practical technology, and organic materials
- timely input and proper practices for organic agriculture
  income industries
- fostering elite farmers who specialize in working with the leadership
- stabilization of organic products through trust between producers and consumers

Additionally, the head of Goesan County has made two commitments to solidify organic agriculture. The promises are made in two detailed pledges: 'Organic Public Management System' and
'Natural Cycle Acceleration Industry Acceleration' (Goesan County Office Website, 2017). 'Organic Public Management System' is a commitment to increase farmer income by reliably supporting farmers in producing and distributing organic produce and strengthening organic produce's competitiveness in Goesan County (ibid.). 'Natural Cycle Industry Acceleration' is a commitment to foster the competitiveness of the agricultural and animal husbandry industries. This creates natural cycle-based agriculture and promotes the conservation of the natural environment and the sustainable livestock industry by reusing livestock manure (ibid.).

7.4 Related Organic Agricultural Organizations in Goesan County

Gossan is a traditional agriculture region famous for its beautiful natural scenery and clean areas (Chungbuk Provincial Office, 2013). Based on this environmental background, Goesan is where farmers spontaneously practice organic farming (ibid.). As an eco-friendly organic farming complex in Goesan County, organic agriculture began in the 1970s, focusing on rural development (ibid.). Thus, Goesan County has more organic partnerships than other counties: universities, farming associations, private industry, and research institutes (ibid.). Correspondingly, Goesan County was declared the first organic farming county in South Korea on January 2, 2012. This continues the long term goal of preserving natural ecosystems, producing safe foods, using sustainable agriculture principles, and maintaining cooperative relationships between consumers and producers through the practice of organic agriculture (Kim, 2014). According to the Chungbuk Provincial Office (2013), Goesan Organic County works with the following organizations to effectively achieve its goals:

- 'Hansalim' - established in 1986 to revive the collapsing rural community and produce food that respects life. 'Hansalim' is
still playing an essential role in implementing sustainable regional circular agriculture. In Goesan and other regions, farmers, processors, producers, and consumer unions promote campaigns that all focus on food, agriculture, and lifesaving (Hansalim Website 2016a).

- ‘Heuksalim’ - a social enterprise that started with soil research in 1991 to promote organic agriculture and conduct various research and publications. 'Heuksalim' is currently actively organizing indigenous seed research, making eco-friendly agricultural materials, distribution (including school canteens), and urban farming exchanges (Heuksalim Website, 2014).

- 'Heukasarang’ - a community formed in 2001 around Gammul-myeon (township), an organic community where producers co-produce and co-ship from 46 farms (102 Members). The main production items are corn and broccoli (Yoon 2015). 'iCOOP' - one of the consumer cooperatives committed to building an infrastructure for sustainable production and consumption of green products. 'iCOOP' not only provides various activities to consumers but also contributes to job creation and the local economy in rural communities (iCOOP Website, 2018).

- ‘Nunbisan Village' - the oldest community in Goesan, with a community of 20 members. In 1968, Father Clyde Davis, from the USA Merinol Ministries, initiated the "Goesan Livestock Speculation Cooperation" to raise cattle to avoid poverty. It currently operates a laying hen farm (Hansalim Website 2020).

- 'University of Jungwon' organizes joint research teams specializing in organic food research, agricultural product processing, breeding, and seed research to promote
organic farming research and conduct collaborative research. Through the use of research equipment, Goesan has led various international exchange projects related to organic farming (Chungbuk Provincial Office 2013).

- 'Goesan Organic Farmers Association (Union),' with over 500 members, is the most extensive farmer's organization in Goesan. It is involved in producing and selling Goesan's organic produce and delivering it to school canteens (Kim, 2019).

Thanks to these organizations, Goesan County's position as an organic agriculture county was firmly established (Chang 2018). This led to the creation of the 2015 Goesan World Organic Industry Expo and ALGOA (ibid.). The 2015 Goesan World Organic Industry Expo was a one-time industry fair. It was carried out with the support and participation of the International Society of Organic Agriculture Research (ISOFAR) and the IFOAM (ibid.). There was a one-time end to organic agriculture activities in Goesan, where ALGOA was organized with IFOAM Asia and several municipalities in Asia (ibid.). Since it is an ALGOA in Goesan, the first president represented Goesan by a vote of member states (ibid.). ALGOA contributes to organic by organizing the Asia Organic Congress and the Organic Youth Forum (ibid.). Furthermore, the Goesan County office holds an annual ALGOA Summit, separate from the Asian Organic Congress, to share each member state's best practices and visit Goesan and the organic farmlands in South Korea (ibid.).
EUROPE

8. Documentation of the Organic Food System in Mouans-Sartoux, France (Françoise Umarishavu)

8.1 Case Study Background

8.1.1 Geographical Description of Mouans-Sartoux

Mouans-Sartoux is a city with 13.52 km² and approximately 10,500 inhabitants, located in south-eastern France. France stretches from the Mediterranean Sea to the English Channel and the Atlantic Ocean, sharing land boundaries with eight countries: Andorra, Belgium, Germany, Italy, Luxembourg, Monaco, Spain, and Switzerland. Mouans-Sartoux is situated in Alpes-Maritimes of the Provence-Alpes-Côte d'Azur region, in Mougins's township part of the Grasse district. Mouans-Sartoux is at the center of a tripped agglomeration of Grasse-Cannes-Antibes of over 450,000 inhabitants. The residents are called ‘Les Mouansois’. Similar to the whole of France, the language spoken in this region is French. Due to severe geographical limitations, this aggregation is not able to grow and expand towards its periphery. Therefore, its development exercises put strong pressure on municipalities situated in the center of this triangle. Mouans-Sartoux is hindered by this stress, more intensively in terms of agriculture, forestry, and land conservation (URBACT, 2018). Despite this challenge, the city has been built around a clear mission of “living better together” in a healthy and preserved environment through innovative projects leading to sustainability (Sempels et al., 2013).
8.1.2 Organic agricultural sector in France

Organic farming first appeared in France in the early 1950s after developing in Austria, Germany, Switzerland, and England (Morin, 2010; Leroux, 2015). In the early 1960s, which were characterized by consciousness about the consequences of pesticides and intensive farming on health and the environment (Carson, 2002; Lockeretz et al., 2007), France was made a pioneer country following the implementation of organic agriculture. This era was characterized by the birth of groups and associations were created in favor of organic agriculture, especially the Groupement d'Agriculture Biologique de l'Ouest (GABO), created in 1958 and later, in 1961, which became the French Association of Organic Farming (AFAB). In 1964, independent commercial groups also began to emerge. The main groups were the Lemaire-Boucher Company (which was engaged in supplying inputs to producers) and the Nature et Progrès (N&P), an association open for organic farming methods (Leroux, 2015; Morin, 2010).
Projects for raising awareness and the consciousness of environmental preservation and the desire for a new life quality spread from 1968. It was stimulated by the rejection of the consumer society's protest movements and the productivity-focused economy (Leroux, 2015; Lockeretz et al., 2007). In the following years, since 1970, with a context of awareness of the limits of the planet's resources and the oil crises, the concepts of accreditation and control guidelines were developed to ensure a defined quality for the consumer. Through the N&P Association's influence, the IFOAM was created in 1972. The FNAB (Federation Nationale d'Agriculture Biologique/National Federation of Organic Agriculture) was created in 1978 by organic farmers. Pressure from the N&P also pushed the official recognition of organic agriculture in the Agricultural Orientation Act of 1980, supplemented by the next one in 1988. The Agriculture Biologique (AB) logo was created, and the first organic guidelines were approved this decade. Since the 1990s, France has continued structuring its organic agricultural sector, harmonizing it with the European Regulations (Morin, 2010). According to IFOAM (2018), in addition to the FNAB, other critical institutions for organic agriculture in France are Synabio (the National Union of Organic Companies serving the organic farming sector), Assemblée Permanente des Chambres d'Agriculture/Permanent Assembly of Chambers of Agriculture (APCA), Coop de France/the Federation of Agricultural Cooperatives, the Technical Institute of Organic Farming (ITAB), and French Agency for Development and Promotion of Organic Farming (Agence BIO).

According to Agence BIO's recent report, 2 million hectares, representing 7.5% of the French arable land, are farmed organically (Agencebio, 2019), increasing from 6.5% in 2018 and 1.3% in 1999 (ibid.; FAO, 2002). The central products are potatoes, cabbage, lentils, pumpkins, lettuce, and artichokes. The main fruits are
chestnuts, cider apples, apples, apricots, plums, almonds, kiwifruit, and cherries (ibid.).

The number of operators has grown from 36,945 in 2012 to 61,768 in 2019 (producers: 13%, manufacturers: 12% and distributors: 41%), and 9.5% of French farms are 100% certified organic (Agencebio, 2019; IFOAM, 2012). In the regional classification of French organic operators, Provence-Alpes-Côte d'Azur, where Mouans-Sartoux lies, ranks 5th in France with 5,471 organic operators (the 4th with 3,552 producers) (Agencebio, 2019).

8.1.3 Agricultural History in Mouans-Sartoux

From the 19th century to the late 1950s, Mouans-Sartoux was a small rural farming village. Olive trees, vineyards, chickpeas, and wheat, which were cultivated between the olive trees and silkworm, constituted this region's economy. Farmers also gained some income from dairy cows and sheep farming (Sempels et al., 2013). At the end of the 19th century, Grasse, the world's perfume capital, was booming. The cultivation of perfume plants then developed throughout the Grasse region, including Mouans-Sartoux. From then on, more flowers were grown: centifolia rose, jasmine, tuberose, narcissus, daffodil, geranium rosa, etc. The olive trees were even cut down for the benefit of the perfume plants plantation (ibid.).

In the territory of Mouans-Sartoux, jasmine became the primary plant, to the extent that the smell of jasmine bathed the entire commune, and the inhabitants of Mouans-Sartoux used to walk through the farms to smell its odor. In the second half of the twentieth century, coastal tourism developed, and agriculture declined. The perfume started to be produced with synthetic ingredients. Market garden agriculture was introduced. Consequently, the terraces were destroyed in favor of setting up
market garden agriculture. Farmers had more and more difficulties living within this form of farming. Conscious of this weakness, real estate developers suggested purchasing the land to meet the growing housing needs. The construction made the soil sterile, changed the landscape, and promoted the emission of GHGs. The turning point in history was in 1965. At this time, a project to build public housing was introduced. The purpose was to avoid disproportionate urbanization and sustain the soil by restoring a rich natural heritage made of extensive woodland, farmland, and terraces that testify to agricultural activity.

Mouans-Sartouix is now a well-known example of a local OFS in France. High expectations and more initiatives in favor of local organic are increasing and are supported by local authorities. In this city, all nursery children, students, and administrative employees eat 100% organic food from canteens and restaurants (Sempels et al., 2013). This initiative was achieved by creating a municipal organic farm, which provides 80% of the vegetables served in the schools' catering. The municipal organic farm project aimed for food self-sufficiency with a view to sustainability, preservation of land for future generations, and limiting the distance of transport and the supply of organic food (Bréger & Méa, 2018). This farm started operating in 2011 on a plot of 4 hectares and was later extended to 6 hectares in 2015. The objective was to produce on this land the 24 tons of vegetables consumed annually by the 1,200 meals served per day through in-school catering (Mundler et al., 2014). Three integrated kitchens have been installed in the municipal schools, allowing complete control and the use of fresh and quality products. Known for having been backed by Gilles Perole, the Deputy Mayor of Education in Mouans-Sartouix, this project is administratively attached to green spaces' service under the Environment Department Director (Bréger & Méa, 2018).
In addition to the food production function, this project has an educational role: school children come to make observations and are associated with the sowing, planting, and harvesting under the responsibility of teachers (Mundler et al., 2014). The purpose of this project is not commercial. Surpluses are given to the local grocery. The land is also organically certified with Ecocert (Sempels et al., 2013). Mouans-Sartoux is one of the French cities whose organic consumption culture is now flourishing (Sempels et al., 2013). The goal is to move towards 100% organic.

8.1.4 Food Consumption Pattern

In France, organic farming products are part of their daily lives: 82% of French people have faith and are interested in purchasing organic products. 85% of French people find it essential to develop the organic agricultural sector, and 16% regularly consume organic products daily (Agencebio, 2018).

Bréger (2018) has illustrated the societal expectations of French consumers regarding sustainable and local food consumption: 57% of French consumers of organic products modify their eating behaviors (purchases, culinary preparations); 62% buy more fresh produce; 66% buy more seasonal products, and 53% avoid loss and waste. Around 85% of French people revealed that they are interested in purchasing products from local, organic farming. Proximity remains a significant factor in buying decisions, as 46% of French people want more organic products from their local traders (Bréger & Méa, 2018).

8.1.5 Organic Certification

After introducing organic certification in 1985, a green-white logo of AB was established. The AB label's accreditation is owned by the Ministry in charge of Agriculture and complies with the European Union (EU) regulations (EC 834/2007) for organic food.
Management of the AB label is guaranteed by Agence BIO and the Institut national de l'origine et de la qualité/ National Institute of Origin and Quality (INAO) is responsible for protecting the AB label. For certification purposes, the AB label is used on organic agricultural products: foods containing at least 95% of ingredients from organic agricultural origin, livestock and pet feed (ibid.). The European logo is also used, and it ensures the respect of the regulation EC 834/2007 for organic agriculture of the EU. The European logo is applied on products that (1) contain 100% of its ingredients from the organic production method, or in processed products at least 95% organic agricultural products, if the remaining share is not available in organic and is accredited; (2) comply with the rules of the official control and certification system, and (3) present the name of the producer, manufacturer or distributor and the registration number of the certification body.

The European logo became mandatory from July 1, 2010, causing modifications to the national regulations. Cahier de Charges Français (CCF), which was associated with the AB label, was also subject to those modifications. These modifications’ main objective was to simplify the harmonization of EU members’ regulations and facilitate trade (ibid.). This led several organic organizations (Biocoop, FNAB, Bio Consom'actors, Pronatura, etc.) to move towards the launch of a private label in spring 2010: Bio Cohérence. Organic certification is a precondition for Bio Cohérence, but the main principle of Bio Cohérence is more than a production method. In Bio Cohérence, organic farming is a societal movement that encompasses the economic and social domains: creation and maintenance of jobs and proximity and fairness of the exchanges, from the producer to the consumer (Biocohérence, n.d.). The Meilleur Produit Bio/The Best Organic product is another distinctive organic label in France. Since 2013, the Meilleur Produit Bio logo has been awarded by a jury of 100 consumers. It certifies not only
that a product is organic, but it also has a distinctive superior quality and effectiveness. It is only awarded to products that score at least 16 out of 20 in the consumers' jury (Bio à la une, n.d.).

According to Agencebio (2019), more than 89% of the French consume organic at least occasionally. As organic consumers continue to increase, organic labels continue to emerge with different requirements. The most renowned TPC bodies operating in France are Groupe Ecocert, Certipaq Bio, Bureau Veritas, Certified, Certis, Alpes contrôles, and Qualified.

France is known for one of the oldest PGS, the N&P. Some producers choose only the PGS for certification. In France, those producers are not allowed to display the AB logo, which explains why 75% of N&P farmers are doubly certified (IFOAM, n.d.). In addition to Bio Cohérence and N&P, Demeter, known for its biodynamic principles and the Bio-Equitable & Solidaire, has also invaded the French market and is preferred by actors who want to go beyond organic (ibid.; Agencebio, 2019). In Mouans-Sartoux, the most used organic labels are N&P, Demeter, BioCohérence, and Ecocert, which complies with the AB requirements and EU label. A comparison between those labels is illustrated in the table 8.1.

Table 8.1: The Most Used Organic Labels in Mouans-Sartoux, France

<table>
<thead>
<tr>
<th>Label</th>
<th>Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Coexistence organic and non-organic</strong></td>
</tr>
<tr>
<td></td>
<td>Allowed for different animal</td>
</tr>
<tr>
<td></td>
<td>Not allowed, Farm 100% organic</td>
</tr>
<tr>
<td></td>
<td>Not allowed, limitation of</td>
</tr>
<tr>
<td></td>
<td>Not allowed</td>
</tr>
</tbody>
</table>

129
<table>
<thead>
<tr>
<th></th>
<th>species and plant varieties</th>
<th>risks of contamination</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Products manufacturing</strong></td>
<td>Worldwide 100% or 95% organic</td>
<td>100% N&amp;P</td>
</tr>
<tr>
<td></td>
<td></td>
<td>At least 90% Demeter &amp; 10% organic</td>
</tr>
<tr>
<td><strong>Origin of ingredients</strong></td>
<td>Worldwide</td>
<td>100% from France</td>
</tr>
<tr>
<td><strong>Heated greenhouse</strong></td>
<td>Allowed</td>
<td>Not allowed</td>
</tr>
<tr>
<td><strong>Animal welfare</strong></td>
<td>Min. space and outdoor time, animals fed a diet without pesticides but that does not necessarily come from the exploitation</td>
<td>Reinforced measures: living spaces, transport times, slaughter conditions and feeds, total ban of Genetically Modified Organism (GMO) traces</td>
</tr>
<tr>
<td><strong>GMOs</strong></td>
<td>Not allowed, accidental threshold tolerated up to 0.9% GMO</td>
<td>Total ban of GMOs traces</td>
</tr>
</tbody>
</table>

Source: Adapted from Agencebio, 2019; Bio à la une, n.d.; IFOAM, n.d.

### 8.2 Overview of the OFS of the Mouans-Sartoux

Organic farming has been practiced for a long time in Pays de Grasse, the region where Mouans-Sartoux belongs. About 50 years
ago, a small number of producers were already practicing organic farming. The first three families: the family Federzoni was trained by the Oulmond family, who was already in organic market gardening, after its introduction in the village by Pierre Fabre. The organic practices were already in place before their disappearance after World War II. In 1964, when the Lemaire-Boucher company began to emerge, the company’s bread known as ‘Le Pain le Maire’ was introduced to the market in Mouans-Sartoux. This bread was validated by agricultural producer organizations that guarantee products are healthy. Consumers started to understand the relationship between health and the food they consume.

The former Mayor of Mouans-Sartoux, Mr. André Aschieri, had long ago become aware of health and environmental issues around food. This Mayor, who also became a Member of Parliament representing a part of the National Assembly territory, had met experts from all over Europe who had shown him their work in the scientific field (MEAD, n.d.–a).

There were already reflections on production modes and how the food was produced, processed, and consumed. Later on, the trigger became the mad cow crisis in 1998, when it was realized that eating meat from a sick animal can potentially lead to human illness or death. In the middle of the mad cow crisis (1999), the city decided to introduce organic beef to guarantee the sanitary quality of the products (ibid.). Animal protein cannot be entirely avoided; it has been found that it makes sense to do something about the production process. Simultaneously, to improve both the health of animals and the health of humans and reduce environmental impacts, the municipality team headed by Mayor André Aschieri conducted a reflection on the relationship between food, health, and the environment to raise awareness in Mouans-Sartoux. In 2005, Mouans-Sartoux became a member of Programme National Nutrition Santé/ National Programme Nutrition Health (PNNS), a
public health plan launched in 2001 that aimed at improving the health status of the population through reducing rates of obesity and overweight as well as enhancing dietary practices and nutritional intake, especially for vulnerable people. One year later, in 2006, the city launched the program ‘Eat well, move well is good for you’, a program to encourage the public to adopt a lifestyle of eating well and increasing their physical activity in their daily life. During the same year, the Municipality revised school menus to integrate seasonality. In 2008, bread and flour went organic (9.6%) (ibid.). This same year was the beginning of the ‘Opération un fruit à la récré/ Operation One Fruit at Recess’, a program which aimed at raising awareness among children in priority neighborhoods about nutritional balance. One fruit per week was distributed on the morning break for fundamental schools or at breakfast time for kindergartens. The Municipality also conducted a feasibility study to create its organic agricultural farm.

In January 2009, apples, salads, and dairy products became organic within the schools, representing 23% of organic menu products. In the same year, the objectives of the Grenelle Environment were exceeded. The Grenelle Environment Forum was a series of political meetings organized in France in September and December 2007. The aim was to make long-term decisions on the environment and sustainable development, in particular, to restore biodiversity through the establishment of a green and blue grid and regional ecological coherence scheme while reducing GHG emissions and improving energy efficiency (Whiteside et al., 2010). At the beginning of 2010, the symbolic bar of 50% organic was crossed with the introduction of potatoes, carrots, pasta, cereals, and compotes (a type of dessert made of whole or pieces of fruit in sugar syrup). The same year, an experimental culture was initiated on the Municipality organic farm, which gave good results, permitting the official establishment of a 4-hectare plot one year
later. One staff member was hired to work on the farm under the Municipality contract. The farm was later expanded to 6 hectares in 2015 (ibid.). In 2010, the first weighing of leftover food in school canteens was launched, causing a 75% reduction of food waste in 2011. By the end of 2011, whole vegetables and part of the grocery store (73.6%) turned organic (ibid.). In 2012, Mouans-Sartoux became the first city in France with more than 10,000 inhabitants to serve 100% organic products in school restaurants. At this time, 80% of organic vegetables were coming from its organic farm. The Municipality's agricultural surfaces were tripled, from 40 to 112 hectares, and the Observatory Committee of Sustainable Restoration was created. This committee, still active today, associates several actors and partners who meet on the occasion of one or two steering committees per year. Its ambition is to precisely follow the policy's effects on the territory and the behaviors (MEAD, n.d.–b). The year 2012 was characterized by many achievements in terms of converting towards organic.

The same year, the association ‘Les Jardins Familiaux/ Family Gardens‘ was created by the Municipality. This association, made of 20 members, grows organically on a domestic scale. The following year, 2013, the city became a founding member of the Club des Territoires Un Plus Bio (an association that intends to respond to collectives’ need to act together and include the quality of nutrition and health topics the organic). During this same year, the Municipality of Mouans-Sartoux received the first prize of the ‘Trophy of Eco-Maires for sustainable organic Restauration/ Trophy of Eco-Mayor for sustainable organic Restoration’. This Eco-Mayor Trophy has been awarded for 28 years to local authorities for their innovation and outstanding environmental protection and sustainable development (Les Eco Maires, n.d.). This trophy was followed by acquiring the level 3 organic label for school kitchens by Ecocert in 2014. Following all city awareness activities, 85% of the parents changed
their eating habits to organic in 2014. During this same year, the Municipality reflected on creating aid for the installation of organic farmers. The first farmer was supported to install his organic farm with financial assistance up to a maximum of 12,000 euros, mainly allocated for watering. Beneficiaries were asked to be responsible for water consumption to only what the plant needs and, at the same time, grow organically. Since 2016, the city has achieved the plan of using 100% of vegetables served in school catering from its organic farm. The preservation project for vegetables was also started to prevent waste and losses. The same year was remarkable for creating the ‘Maison d'Education à l'Alimentation Durable/Centre for Sustainable Food Education’ (MEAD). The MEAD was launched in October 2016 after realizing that, beyond the school canteens project, the surveys conducted with the families showed that only 85% of them said they had changed their eating habits. MEAD was needed to support this drive in the whole population. The goal was to expand the scope of action and not be limited to canteens, and therefore free activities to all citizens. This provided good results, as 13% of the families interviewed a few months later (2018) confirmed having converted to 100% organic food consumption.

To broaden its sustainable food education scope, the Municipality of Mouans-Sartoux, together with an association called ‘Un Plus Bio’, launched a training program in 2017. The plan was made explicitly for collective territorial agents. This training program is called ‘Diplôme Universitaire/University diploma’ (DU) (Université Côte d'Azur, n.d.; MEAD, n.d.–c). So far, Mouans-Sartoux is exemplary through its acceptable practices. That is why, since 2018, the city has been one of the Union's territories of the Urban Development Network Programme (URBACT). Via its Agri-Urban European program, the URBACT network aims to create a network of experience-sharing across Europe. (MEAD, n.d.–a; MEAD, n.d.–
The developmental stages of Mouans-Sartoux OFS are summarised in the table 8.2.

Table 8.2: Developmental Stages of the Mouans-Sartoux OFS

<table>
<thead>
<tr>
<th>Year/Period</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>1937</td>
<td>Organic practices in Mouans-Sartoux’s agriculture</td>
</tr>
<tr>
<td>1940s</td>
<td>Disappearance of organic practices and introduction of intensive agriculture after the World War II</td>
</tr>
<tr>
<td>1960s</td>
<td>Organic farming practices by Families Federsoni and Oulmond</td>
</tr>
<tr>
<td></td>
<td>Introduction of organic market gardening by Pierre Fabre</td>
</tr>
<tr>
<td></td>
<td>Market conquest of Pain Lemaire (Bread) in France and Mouans-Sartoux</td>
</tr>
<tr>
<td>1998</td>
<td>Mad cow crisis (Trigger)</td>
</tr>
<tr>
<td>1999</td>
<td>The former Mayor André Aschieri, with the Municipality team, initiated a reflection on the relationship between food, health and the environment and rose awareness in Mouans-Sartoux</td>
</tr>
<tr>
<td>2000s</td>
<td>4% organic (meat): Choice of a municipal catering, one kitchen per school</td>
</tr>
<tr>
<td>2005</td>
<td>Mouans-Sartoux becomes one of PNNS</td>
</tr>
<tr>
<td>2006</td>
<td>Launch of the program ‘Eat well, move well is good for you’ and revision of menus to integrate seasonality</td>
</tr>
<tr>
<td>2008</td>
<td>Feasibility study to create an organic agricultural farm; Beginning of the ‘opération un fruit à la récré/operation one fruit at recess’; Bread and flour went organic (9.6%)</td>
</tr>
<tr>
<td>Year</td>
<td>Events</td>
</tr>
<tr>
<td>------</td>
<td>--------</td>
</tr>
<tr>
<td>2009</td>
<td>23% of bio: (Apples, salads and dairy products) objectives of the Grenelle of the environment exceeded</td>
</tr>
<tr>
<td>2010</td>
<td>The figurative bar of 50% organic was crossed with the introduction of potatoes, carrots, pasta, cereals and compotes; Experimental culture on agricultural management—first weighing of leftover food</td>
</tr>
<tr>
<td>2011</td>
<td>Establishment of a 4-hectare municipality organic farm; Hiring the farmer under municipal contract; 73.6% organic: the whole vegetables and part of the grocery store; Setting up differentiated portions at the self-service; 75% reduction in food waste</td>
</tr>
<tr>
<td>2012</td>
<td>100% organic in school canteens; 80% of organic vegetables coming from the organic farm of the Municipality; Municipality's agricultural surfaces, creation of the Observatory of Sustainable Restoration; Creation of the association ‘Jardins Familiaux/ Family Gardens’; Agricultural land has tripled in Mouans-Sartoux: from 40 to 112 Hectares</td>
</tr>
<tr>
<td>2013</td>
<td>The city becomes a founding member of the Club des Territoires Un Plus Bio; The city receives the first prize of the Trophy of Eco-Mayor for sustainable organic restoration</td>
</tr>
<tr>
<td>2014</td>
<td>85% of parents changed their eating habits to organic; Reflexion creating an aid for the installation of organic farmers; Organic label ‘for school kitchens’ level 3 by Ecocert</td>
</tr>
<tr>
<td>Year</td>
<td>Event Description</td>
</tr>
<tr>
<td>------</td>
<td>-------------------</td>
</tr>
<tr>
<td>2015</td>
<td>Extension of the Municipality organic farm from 4 to 6 hectares; 2015 Mouans-Sartoux signing the manifesto for organic, local, healthy and fair collective catering, ‘When canteens rebel’</td>
</tr>
<tr>
<td>2016</td>
<td>2016 Vegetable Preservation Experience; Creation of the MEAD; 100% of vegetables served in school catering comes from the Municipality farm</td>
</tr>
<tr>
<td>2017</td>
<td>Launch of Diplôme Universitaire program, the ‘sustainable food project manager’</td>
</tr>
<tr>
<td>2018</td>
<td>Launch on January 25th of the European Club ‘Organic Food Territories’ in Mouans-Sartoux, with Un Plus Bio; 13% more families eat 100% organic</td>
</tr>
</tbody>
</table>

Source: Adapted from MEAD, n.d.–d.

8.3 Mission Statement and Principles of the Mouans-Sartoux OFS

The Mouans-Sartoux OFS is a territorial food project administered by a municipal council of elected officials. This team has been striving since the beginning to drive policies that consider the needs of today's inhabitants and future generations. The mission is to disseminate and share the experiences of Mouans-Sartoux, in terms of acceptable practices that have been implemented. The project is headed by the vice mayor's office in charge of education through the MEAD. The purpose of MEAD is to structure and promote food self-sufficiency on the territory, allowing each inhabitant to eat healthy food irrespective of their income while taking care of the environment for future generations. MEAD is built on five central pillars:

1) Producing: Strengthening local, organic agriculture by promoting the conversion of farmers.
2) Processing: Create a collective processing laboratory for use by farmers and the Municipality farm to ensure the farms' economic viability and provide food to the communal restaurant for the whole year-round.

3) Education: Develop education and awareness about sustainable food issues for all stakeholders, including families, visitors, elected officials, technicians, students, researchers.

4) Research: Document the food project, analyze success factors, and experiment with new ways through the support of scientific research.

5) Disseminate or share the experience: promote the project, disseminate the results to all, and share the experiences and methodological tools. MEAD (n.d.–d)

8.4 Structure and Components of Mouans-Sartoux OFS

Through the researcher's lens and based on different sources as listed in both the previous and following paragraphs, the Mouans-Sartoux OFS comprises the following main components: producers, processors, distributors, consumers, waste management services, social inclusion services, awareness, education, and research services.

8.4.1 Producers

The category of producers is divided into two groups: municipality established and private producers. The Municipal organic farm of Haute-Combe is located a few steps from the city center in Mouans-Sartoux. Established on six hectares, one farmer managed the farm under the Municipality contract and controlled by Ecocert. This farm produces about 25 tons of different vegetables each year and provides 100% of the organic vegetables needed for school restaurants (MEAD, n.d.–d).
Among the producers contributing to the organic food flow in Mouans-Sartoux, the association "Les Jardins de la Vallée de la Siagne/ The Gardens of the Siagne Valley" (JVS) is engaged in organic market gardening and seedling production. The JVS association started in 1998 and integrated 30 employees working in organic gardening and seeding through economic activity. The State, the Ministry of Employment, the Regional Council, and the local communities approve the reintegration project. The project allows people to pursue an activity while working on their professional project, which is not necessarily linked to organic farming. In Mouans-Sartoux, the chosen economic activity is organic farming and the production of young organic seedlings. This association's organic vegetables are sold every week in solidarity baskets to adherents (approximately 76), local organic stores, and supermarkets. About a hundred baskets are distributed per week. The most cultivated plants are salad greens, peppers, spinach, lettuce, tomatoes, and herbs (JVS, n.d.).

On the other side of the JVS, another association, ‘Les Jardins Familiaux/ Family Gardens’, produces a domestic scale. About 20 plots are cultivated by residents adhering to the association's guidelines. Members live in apartments and, therefore, have no access to an open-air garden. Each member grows their way, under the guiding principle of not applying chemicals. The agreement is signed between the association and the town hall. Examples of the cultivated crops are onions, artichokes, peppers, salads, cucumbers, raspberries, tomatoes, beans, peas, beans, carrots, cabbage, and corn (MEAD, n.d.–d).
Figure 8.2: Structure and Components of Mouans-Sartoux OFS
8.4.2 Processors

So far, in the Alpes Maritimes department to which Mouans-Sartoux belongs, there are not many processing factories. The Municipality has a project to create a processing plant for transforming vegetables and canning. Since 2016, the Municipality started an experimental project of freezing vegetables from the municipal farm to provide vegetables during the winter (MEAD, n.d.–d).

8.4.3 Distributors

8.4.3.1 Association pour le Maintien d'une Agriculture Paysanne (AMAP)

The AMAP for the Maintenance of a Peasant Agriculture, is known in France to support small, local farmers. It is a partnership between producers and consumers. Consumers pay in advance, allowing producers to know how much food is needed, adapting to the number of registered consumers. In Mouans-Sartoux, this association has nearly 20 registered producers proposing different organic agricultural food products every week. AMAP members meet each Wednesday between 6 pm and 7 pm. Each producer prepares food baskets according to what they can harvest, in various quantities and varieties. Organic market gardeners, members of the AMAP in Mouans-Sartoux, propose vegetable baskets made of some of the following products: Chard, carrots, scallion, celery, cabbages, broccoli, squash, pumpkins, spinach, fennel, corn salad, turnips, onions, sweet potatoes, leeks, radish, artichokes, aubergines, beets, onions, cucumbers, zucchini, beans, melons, peas, peppers, radish, and tomatoes. Most of the mushrooms, strawberries, raspberries, and figs are supplied by farmers from the neighboring Commune of Tignet. Organic eggs and chickens are provided at the AMAP market by farmers from the neighboring Commune of Callas. More of the fruits come from
Tignet, Cheval-Blanc (cherries, peaches, nectarines, plums, apricots, figs, grapes, pears, apples, crates, grapes, and peaches), Barcillonnette (different apples), Golfe-Juan (clementines, lemons, bitter oranges) and Valgrana (Cuneo) in Italy (multi-fruits, different varieties of apples). Farmers from Valderoure supply veal, and some organic bread comes irregularly from Cubans. Some flours (from wheat, buckwheat, corn, chickpea, polenta, or cornmeal) and legumes (chickpea, green lentils) are supplied from Frejus. Cheese, faisselles, natural yogurts, and raw milk are provided from Sainte Luce and Péone. Trout is provided by a fish farmer from Cheiron (AMAP, n.d.).

8.4.3.2 Suppliers of Organic Food to School Canteens

Organic and local vegetables are 100% provided by the municipal farm. In case it is necessary, they are supplemented by Naturdis, an organic wholesaler in Grasse. The same supplier delivers fruit, groceries, meat, dairy products, and eggs. Deloye Marée supplies fresh fish and a wholesaler in Saint-Jeannet, a commune in the Alpes-Maritimes department situated approximately 42 km from Mouans-Sartoux. Honeybee products are provided by several small beekeepers in the Alpes Maritimes, especially from the cities Saint-Vallier-de-Thiey, Vidauban, and Guillaumes, approximately 21 km, 65 km, and 110 km away from Mouans-Sartoux. A private Baker in Mouans-Sartoux provides organic bread. La Maison du Commerce Equitable/ The Fair-Trade Centre (MCE) supplies scarce products and certain spices, whereas Pomona supplies frozen foods. In total, 70% of the organic food is locally provided to the school canteens, while the remaining 30% of organic products come from outside Mouans-Sartoux, but not more than a 200-kilometer range.

The criteria for selecting suppliers is not only based on prices; only 30% depends on the price, but the first 40% is allocated to quality (maturation diversity and traceability). The other 30% is given to
environmental importance (production, packaging, transport, and education). The tender always considers the possibilities to visit farms or the processing workshops to introduce pupils and their parents to the world of organic farming, the evolution of agriculture, and the discovery of flavor. These actions reinforce the pedagogical activities and allow local operators to enter the market without invading the right to free European competition (MEAD, n.d.–d).

8.4.3.3 BIOCOOP

Biocoop is a leader in organic food distribution across France, well-known for its fair-trade products and a wide choice of eco-products and cosmetics. It brings together 600 organic stores around a common goal: developing organic farming in a spirit of equity and cooperation. Biocoop is also more than just a network of retailers; it also influences society's choices and shares its project with other actors, such as employees, consumers, producers, and partners. Biocoop has a biological, local, and solidarity catering response to social and commercial catering in France. Its role is to promote organic and local catering. Thus, Biocoop catering builds partnerships with local producer groups wherever possible in France and the desire to complement the local offer rather than supplant it. Biocoop's stakeholders in Mouans-Sartoux belong to the Biocoop Mougins (BIOCOOP, n.d.).

8.4.4 Consumers

Actors under the consumers' category are mainly Municipality schools, kindergartens, and private households. Mouans-Sartoux has three schools with approximately 985 pupils and four kindergartens with around 160 children. About 1,200 organic meals are served per day, as 96.1% of the stakeholders participate in the municipal school lunch program (MEAD, 2018; Mouans-Sartoux, n.d.).
8.4.5 Waste Management and Social Services

8.4.5.1 Epicerie Boomerang

The Epicerie Boomerang is a private grocery store selling all the daily products in bulk to reduce the environmental impacts of packaging and quantities on demand to reduce household food waste. The store was created in January 2016 with a work philosophy to provide local and organic products as close as possible to the place of sale to reduce transportation. They sell organic products, but they work with the least likely environmental impact as they work on coherence. The grocery incorporates a social aspect by working with an association of people in job reintegration. Together with the association, Epicerie Boomerang creates recipes using fruits and vegetables that are not available in surrounding shops (Épicerie Boomerang, n.d.).

![Boomerang Grocery, Selling in Bulk](image)

*Figure 8.3: Boomerang Grocery, Selling in Bulk*
*Source: Umarishavu, 2019.*

„Bocaux lavés gratuits à votre disposition: Free washed jars at your disposal“. To discourage the use of packaging which may harm the environment, the Boomerang Grocery shop offers free jars to its clients. The jars are marked with possible traces of allergens to alert the customers.
8.4.5.2 Epicerie Sociale Solidaire

The Epicerie Sociale Solidaire-Epicerie du Square/ Solidarity Social Grocery store operates under the Centre Communal d’Action Sociale/Municipal Social Action Center (CCAS). The grocery is run from the donations of supermarkets. Food products close to the expiration date are collected from the bigger supermarkets and sold to marginalized people without jobs for a discounted price. Each product has a reduction of 70-90% compared to the market price. This reduction is made to prevent food waste and to be in harmony with the principle of sharing, friendliness, and solidarity. To join the grocery store, a customer must live in Mouans-Sartoux and meet certain conditions. Different types of food products are collected: organic, non-organic, and red label food, which are not organic but have some superior quality. The members come once a week to order food. They have the freedom to choose products while considering the importance of a balanced diet. Epicerie du Square is a pleasant space offering the possibility of sitting down, having coffee or tea, and meeting and exchanging views and advice. A grocery store is also a place for education. Different activities and workshops on cooking, sewing, and budget management
assistance are provided throughout the year. Adherents of this association also work voluntarily at the solidarity gardens, which produce organic vegetables. These organic vegetables are also distributed to the members through social grocery solidarity (Épicerie sociale ville de Mouans-Sartoux, n.d.).

Figure 8.5: Epicerie Sociale Solidaire

8.4.6 Initiatives and Organizations Engaged in Raising Awareness

8.4.6.1 Un Plus Bio

The association Un Plus Bio was born in 2002 to boost organic and sustainable food in collective catering. The association is a pioneer in the development of FSs throughout France. The association has partnered with the Municipality of Mouans-Sartoux to launch different programs promoting OFSs in the territory (Un Plus Bio, n.d.).
8.4.6.2 MCE

MCE was founded in 1901. It is an association that promotes fair trade across the globe. In Mouans-Sartoux, the association began in 2004. The association is a non-profit organization promoting small producers of the global South. Producers meet in cooperatives, and traders from northern countries buy through purchasing sites with fewer intermediaries. The price must be agreed upon by both parties. In the MCE shop, 95% of products sold are both fair and organic certified. The rest are produced under the same organic conditions but are only fair-trade certified to avoid surplus costs for organic certification. MCE promotes local fair trade where small producers in Mouans-Sartoux produce local and organic under the international Fair-Trade conditions, especially for eggs, flour, and compotes. Volunteers run the shop, and the association is involved in different awareness activities to educate citizens. Awareness activities are organized, such as zero-waste campaigns, demonstrations, and conferences on different issues facing sustainable development (Carson, 2002).

8.4.6.3 Défi Familles A l’Alimentation Positive (FAAP)

The Défi Familles A l'Alimentation Positive/The Challenge Families with Positive Diet (FAAP) is a movement to demonstrate in a friendly way that people can have tasty, organic, and local foods without increasing their food budget. Supported by the organic producers’ network, the project’s methodology is working in teams of a dozen households and increasing the local organic products’ consumption while keeping the budget unchanged and having fun. The program partakers take advantage of a free accompaniment through farm visits, exchanges with a dietician-nutritionist, cooking classes, gardening, tips, tricks to afford organic. (Défi des Familles À Alimentation Positive, n.d.).
8.4.6.4 Festivals

For more than 30 years, the Municipality of Mouans-Sartoux has organized a big festival called ‘Le Grand Festival du Livre de Mouans-Sartoux/The Grand Festival of Livre of Mouans-Sartoux’. At this great festival, welcoming more than 50,000 people, different actors in sustainable development, such as scholars, authors, and philosophers, are invited, and sustainable food is among the addressed topics. Each year in October, different Mouans-Sartoux OFS showcase their activities to the participants, which increases awareness (http://www.lefestivaldulivre.fr).

Mouans-Sartoux is also part of a regional festival, "Le Festival du Miel/The Honey Festival," which has been organized for 25 years. The festival welcomes professional beekeepers, farmers, and the public, which is an excellent opportunity to understand the place of the bee and pollination around the pollination ecosystem. The Mouans-Sartoux Honey Festival is celebrated every year on the last Sunday of April (Les fêtes du miel, n.d.).

For 30 years, Mouans-Sartoux has been part of Marché Gourmand, which does not focus mainly on organic products. It works on a short circuit and recreates the link between the producer and the consumer directly without an intermediary. The Marché Gourmand takes place every year on the first Sunday of September. The objectives are to rediscover the pleasure of taste and quality products, get to know the middle and high-country producers, and renew agricultural meetings. They do this by mixing the cuisine made on the spot and restoring the direct relationship between products and regional specialties. For a full day, a market is created where all the exhibitors are the producers and only sell their products, and processed products such as jams produced with their fruit (Manifestations culturelles ville de Mouans-Sartoux, n.d.).
8.4.7 Research and Academic Institutions

In the framework of developing and strengthening its OFS, Mouans-Sartoux, through its MEAD, works in partnership with different research institutes and academic institutions. The city partners of the Institut National de la Recherche Agronomique / National Institute of Agricultural Research (INRA) work on different research activities taking Mouans-Sartoux as an example of exemplar achievements in sustainable food culture. Through the DU training program, Mouans-Sartoux is in partnership with the University of Nice Côte-d'Azur. The program was co-created by both the city and the University, specifically for Territorial Collective agents. The DU training program’s mission is to establish a methodology using the diffusion of principles and practices to the collectives who are coming to learn about the food policy of Mouans-Sartoux. This training program, also known as the ‘sustainable food project manager’, is not in the same system as a Bachelor’s, Masters’s, or Ph.D. degree. It is a diploma from the establishment, which has some flexibility concerning the number of hours and the level of requirements to be admitted. The University chooses the number of hours, dispensation, the target audience, and the level required to enter the program. As such, the DU addresses people who already have a bachelor’s degree. It came through the initiative of Mouans-Sartoux, because the city is very committed to sustainable food and the development of organic food, specifically in the canteens, but also in sensitizing the public. The University of Nice also gathers a certain number of candidates from the Master program Gestion de l'Environnement et Développement Durable / Management of the environment and sustainable development (GEDD) as part of their project work. Mouans-Sartoux cooperates with the Lascaux food law research program, managed by the University of Nantes, to advance local and sustainable collective catering in the territories. Mouans-Sartoux serves as an excellent example for Nantes
University researchers, and they participate in the knowledge transfer through the DU program.

Since 2012, when Mouans-Sartoux created the Observatory of its sustainable school catering, the city has partnered with the Skema Global Business School at the neighboring campus, Sophia-Antipolis. Master students of this school participate in the MEAD work to get local experience and translate it into the entrepreneurial field (Université Côte d'Azur, n.d.; MEAD, 2018).

8.4.8 Networks

As for networks, Mouans-Sartoux, together with the association Un Plus Bio, founded a European Club, ‘Organic Food Territories’, which aims at connecting European territories that make sustainable food a pillar of agricultural, economic, social, and public health development.

Mouans-Sartoux is also a member of the URBACT, a network of experience-sharing across the EU Member States. URBACT is the first territorial cooperation program to promote integrated and sustainable urban development. It has a transfer network, The BioCanteens, which aims to develop sustainable school catering in seven European cities, using them as a lever for the policy development to integrate food, agriculture, and citizens' health protection, and the environment. In the same framework, Mouans-Sartoux, via BioCanteens, has set up a local action group by bringing together local and regional actors like Agribio 06 (Group of Organic Farmers of the Alpes-Maritimes), Communauté d’Agglomération du Pays de Grasse, producers, retailers, parent’s associations, and students to transfer the acceptable practices of Mouans-Sartoux in the field of collective catering in schools to other committed European cities. The partner cities are: Mouans-Sartoux in France, Rosignano-Marittimo in Italy, Troyan in Bulgaria, Pays
des Condruses in Belgium, Trikala in Greece, Vaslui in Romania, and Torres Vedras in Portugal (MEAD, n.d.-d; URBACT, 2018).

8.5 Future plans for the Mouans-Sartoux OFS

The Mouans-Sartoux OFS is a sustainable food project that focuses on collective catering starting from the Municipal schools. The current objective is to expand this food culture to the whole territory to achieve 100% organic food consumption in all families and households. Since the city still faces the challenge of organic food valorization for a shelf-life extension, the city has created one processing plant for transforming vegetables and canning. The trial has already been put in place in school canteens to store vegetables until the following season. However, the goal is to enact it on a larger scale to benefit a significant number of actors (MEAD, n.d.-b).
9. Documentation of the Organic Food System in Italy- Bio-District Cilento, a Case study (Ohemaa Achiaa Agbolosoo-Mensah)

9.1 Background information to the Cilento region

9.1.1 Geographical Description

The bio-district Cilento is located inside the second largest Park in Italy, ‘Valle di Diano e Alburni/ National Park of Cilento’ (PNCVDA). The Park was founded in 1991. It is situated in the province of Salerno, Campania region (southern Italy). It has a total land area of approximately 1810 km² (Parks.it, 2019), with the bio-district of Cilento occupying 3.196 km² of the total land area (EcoRegion, n.d.). Campania was formerly known among the ancient Roman Empire as "Campania Felix," meaning fertile countryside due to the land's fertility (Natale et al., 2013). According to Scherrer et al. (2005), the National Park aims to preserve the traditional combination of cultural and natural landscapes and the region's unique plant diversity. Figure 9.1 shows an image of the PNCVDA.
The PNCVDA, including the ‘Paestrum’ (founded at the end of 7th century BC by the Greek city of Poseidonia), ‘Padula’ and ‘Elea-Velia’ was declared one of the World Heritage sites of Humanity due to particular cultural interest by United Nations Educational, Scientific and Cultural Organization (UNESCO) in 1998 (UNESCO, 2019). The park does not cover the entire land area of Cilento (Pugliese & Antonelli, 2015), but it does include the entire land area of the bio-district Cilento. Cilento is located on the coast of the Tyrrhenian Sea, about 350 km, and stretches from Paestrum until the Gulf of Policastro (Figure 9.2).
The landscape of the bio-district is not homogeneous and comprises hills, mountains and plains as can be seen in Figures 9.3 and 9.4. The region is prone to seismic risk and suffers from serious territorial imbalances that still remain essentially unsolved (Favilli et al., 2018; Pugliese et al., 2015).
Figure 9.3: The landscape of Cilento from the area of Castelnuovo
Source: Own figure

Figure 9.4: The landscape of Cilento from the area of Pioppi
Source: Own figure
The bio-district Cilento comprises three distinct areas: the Alburni are located in the mountains, Valle di Diano that forms the middle belt of the area, and Cilento along the coast. The Alburni mountains lie to the south-eastern side of the Campania region and have six peaks that are 1700 meters above sea level. Valle di Diano, which can be translated to English as the ‘Diano Valley,’ is made up of narrow plains situated on an ancient lake's bed turned into a highly fertile agricultural area through irrigation infrastructures. This area is also overexploited (Pugliese et al., 2015). Figure 9.5 shows the coast of Ascea with a picturesque view of hills and mountains.

In 2013, the Blue Flag award (Figure 9.6), given to clean beaches, marinas, and sustainable boating tourism, was given to Pioppi village and its surroundings by ‘Legambiente,’ an indication of high environmental and quality standards of the marina. The flag is given to beaches and marinas operating sustainably.

Figure 9.5: Coast of Ascea Marina
Source: Own figure

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The region's climate is more Mediterranean along the coast with Mediterranean bush vegetation, but more continental in the inner zones with lower temperatures in the winter. This region's climate is due to the mountains and extensive forests, creating a more relaxed and humid environment (Scherrer et al., 2005). Since several settlements in Cilento are near the coast, it leaves the inner boundaries for agricultural production and the conservation of nature (Chua et al., 2016). Favilli et al. (2018) indicate that bio-district Cilento's diversified geographical traits determine significant disparities exist within the local communities. Pugliese et al. (2015) ascribe the synergies and reciprocities between economic activities, self-organization, and social innovation relating to the bio-district's geographical proximity.
The bio-district Cilento comprises various municipalities including Ascea, Auletta, Caggiano, Casal Velino, Castellabate, Castelnuovo Cilento, Castel San Lorenzo, Centola, Ceraso, Controne, Cuccaro Vetere, Gioi, Laurito, Morigerati, Monte San Giacomo, Novi Velia, Orria, Pisciotta, Pollica, Prignano Cilento, Rofrano, Rutino, Salento, San Pietro al Tanagro, Sanza, Sassano, Sessa Cilento, Sicignano degli Alburni, Stella Cilento, Stio, Torraca and Vallo della Lucania (Pugliese et al., 2015). During the period of data collection, the researcher found that six new municipalities had joined the bio-district Cilento. These are Agropoli, Camerota, Cannalonga, Caselle in Pittari, Roscigno, Moio della Civitella. Figure 9.7 shows the 38 municipalities in the bio-district Cilento.

Figure 9.7: Map of Cilento Showing the 38 Municipalities of the Bio-District
Source: Adopted from original map belonging to PNCVDA, n.d.
9.1.2 Demographic Information

Campania is the third most populated region of Italy. According to 2019 statistical data presented by the 'Italian Analisi Statistica e support alle decioni,' Campania region has approximately 5,801,629 inhabitants with 2,828,490 males, 2,973,202 females, and a population density of 424 inhabitants per km² (Figure 9.8).

![Figure 9.8: Demographic Information of Campania Region](image)

*Figure 9.8: Demographic Information of Campania Region*

*Source: Statistica, 2020.*

The language of the residents of Campania, like all other Italian regions, is Italian but, in the bio-district Cilento, the dialect is Cilentano. According to Pugliese et al. (2015), the bio-district's entropic nature creates intense social, cultural, and economic relations, with families aggregating in small communities.

As seen in Figure 9.8, the percentage of females (51.2%) is slightly higher than that of males (48.8%). In Figure 9.9, it can also be observed that the majority of the population lies within the age group 18-64 years. Also, the population above 65 years is greater than the population below 17 years. Figure 9.9 shows a further breakdown of age distribution, indicating that individuals above 60 years make up a significant population share.
Furthermore, the old age index in Cilento (represented by Parco Nazionale del Cilento, Vallo di Diano e Alburni) is relatively high compared to the national average (represented as Media Nazionale). According to ISTAT (2012), the percentage of the population above 65 years in Cilento is greater than the Italian average by 2.8 % (Figure 9.10).

![Figure 9.9: Demographic Distribution of Campania Region: Gender, Age and Nationality](image)

Source: Brinkhoff, n.d.

![Figure 9.10: Age Comparison between Cilento and Italy](image)

Source: Avallone et al., 2018.
9.1.3 Economy

In Italy, more than half of the GDP is made up in the service sector, while the agricultural sector's contribution is significantly lower (Statista, 2019). The recorded GDP for the Campania region in 2018 was approximately 108 billion euros, ranking seventh in Italy, with approximately 390 billion euros in the Northern region of Lombardy (ibid.). The primary industries in Campania are agro-food and manufacturing industries. The service sector is the most represented in Campania, with a 69% share of 586,821 companies registered in 2017. The agriculture sector ranks third with a share of 11%, following the manufacturing sector (including construction) with 20% (Eurostat, 2019).

Campania's unemployment rate is relatively high and grew by 40% between the years 2009-2016. In 2008, the unemployment rate remained at 20.4% and was the third-highest in Italy (average 10.6%) and is one of the highest in Europe (average 6.9%). Furthermore, the unemployment rate for women in 2018 was remarkably high, at 23.4% compared to 18.6% for men. This is attributed to the relatively high gender inequality in Italy (Eurostat, 2019).

9.1.4 Agricultural History

The PNCVDA was an isolated area that depended on crop production and shepherding. Since ancient times, agriculture's landscape has been influenced by agriculture to cultivate olive trees and vineyards (Sereni, 1972). Fishing is another essential component of the Cilentan economy (Colloca et al., 2002).

Most Cilento farms are predominantly organic, sustainable, ecofriendly, devoid of pollution, and situated in natural habitats that are a refuge for some fauna and flora (Di Novella et al., 2013; Oliviera, 2013). The bio-district Cilento has approximately 2,300...
hectares of Usable Agricultural Area (UAA) (Pugliese et al., 2015), which represent approximately 8% of the total regional organic land area (EcoRegion, n.d.). About 450 organic farms in the bio-district represent about 23% of organic farms in the Campania region. These 450 organic farms are controlled, certified, and registered in ‘the Registro Regionale degli Operatori dell'Agricoltura Biologica/the regional organic farm register.’ These farms have a pact that guarantees the produce is organic, local, and GMO-free, using the ethical and social principles of organic (Basile & Cuoco, 2012).

According to Cuomo et al. (2000), Vallo di Diano and the Sele plain are the most suitable areas for intensive agricultural production. Extensive agricultural production occurs in inland areas, including small scale processing. Pasture and agricultural activities are mainly family-based. The average agricultural area of a farm is approximately five hectares resulting from the fact that most of these farms are family farms or smallholder farmers. The total UAA comprises tree crops (32%), arable land (22%), and meadows and pastures (46%). Farms with livestock also tend to keep relatively fewer animals, except for buffalo farms, which keep large herds with an average of 85 animals per holding (Agrispin, 2016).

Some of the organic products include cultivated crops and farm-raised animals and fish produced in the bio-district. Cilento produces extra virgin olive oil, buffalo mozzarella from Campania (Protected Designation of Origin), artichoke Paestum, Cilento wine, Paestum wine, cacioricotta, white fig of Cilento, chickpea, fusilli, goat cheese from Cilento, buffalo cream chunks, smoked buffalo provola, bread from Padula, anchovies, beans, honey, alici menaica, black pork and goat (Avallone et al., 2018; EcoRegion, n.d.).
9.1.5 Food Environment

The food environment of the bio-district Cilento is embedded in the Mediterranean Diet (MD). In the 1950's Ancel Keys, an American philosopher sought to find the correlation between diets and coronary heart diseases. This voyage led him to Naples, where he discovered the Cilentan people's food and later called it 'the good MD (Keys, 1995). The MD's core is mainly vegetables and includes reduced consumption of meat and dairy products with fruit as dessert (Keys, 1995). Research shows that the MD can reduce the risk of cardiovascular diseases (Estruch et al., 2013; Sofi et al., 2008) and improve health status by reducing mortality from cancer and incidence of Parkinson's and Alzheimer's disease (Sofi et al., 2008). In 2010, the MD was recognized by UNESCO as an intangible heritage to humanity and described as "a set of skills, knowledge, rituals, symbols, and traditions concerning crops, harvesting, fishing, animal husbandry, conservation, processing, cooking, and particularly the sharing and consumption of food," not as a particular set of foods (UNESCO, 2013).

A typical Cilentan style meal is shown in Figure 9.11 and reflected in the MD food pyramid (Figure 9.12). The MD suggests high consumption of fruits and vegetables with olive oil as a principal source of fat (Keys, 1995). The diet also promotes moderate consumption of fish and other seafood, wine, and dairy products and a reduced to minimal consumption of sweets, saturated fats, and red meat (ibid.).

The concept of eating together is significant to Cilentans. It promotes social exchange and communication, brings together people, emphasizes hospitality, and is a way of life guided by respect for diversity. Women play a significant role in transmitting the knowledge of the MD (UNESCO, 2013).
9.1.6 Food Consumption Pattern

The food consumption pattern of the Cilentan people is embedded in the food pyramid of the MD. The MD comprises a high consumption of grains and legumes, fruits and vegetables, moderate consumption of meat and dairy products, moderate alcohol intake, and monounsaturated fatty acids with olive oil as the leading oil (Rice, 1994). A further breakdown of the various components of the MD is discussed below.

Fruits and vegetables: Vegetables play a crucial role in the MD. Vegetables such as eggplant, tomatoes, spinach, and broccoli are common in the MD (Figure 9.13). As seen in Figure 9.14, fresh fruit constitutes a significant portion of the dessert choice for Mediterranean people and is preferred to pastries or sweets (Rice, 1994; Willett et al., 1995).

Figure 9.11: Typical Cilento Style Meal Reflected in the Food Pyramid
Source: Own figure
Figure 9.12: Food Pyramid of the MD
Source: Own figure

Figure 9.13: Vegetables Included in Meals
Source: Own figure
Whole grain foods: Whole grain foods like bread, pasta, polenta, rice, and couscous are a significant component of the MD (Rice, 1994). Whole grains contain unique phytochemicals and antioxidants that complement those in fruits and vegetables when consumed together (Liu, 2007).

Healthy fats: Fats and oils are essential in the Cilentan diet. Olive oil is a significant fat component in the MD (Caruso et al., 2000). Escrich et al. (2011) argue that the consumption of extra virgin olive oil in moderate quantities in a lifetime has the potential to influence the risk of breast cancer favorably. Other plant-based sources of mono-unsaturated fatty acids, including canola oil, omega-3 fatty acids found in nuts, avocados, salmon, tuna, and flaxseed, contribute to the fat component of MD.

The MD is characterized by low consumption of meat and meat-based products (Trichopoulou et al., 2003). The Cilentan diet
includes some lean meat and poultry, but these are consumed in moderate quantities.

Legumes: The MD includes a high consumption of legumes (Trichopoulou et al., 2003), including white beans, lentils, chickpeas, high in protein, and a good fiber source (Rice, 1994). Darmadi-Blackberry et al. (2004) argue that consumption of higher amounts of legumes is the most protective dietary predictor of survival amongst elderly persons.

Moderate red wine consumption: a low to moderate red wine intake is another critical component of the MD. Red wine is mostly taken with meals, and about 3-6 ounces could be consumed per person per day (Rice, 1994). Besides the alcoholic benefits derived from red wine consumption, its regular and moderate consumption has been linked to a reduced risk of coronary heart disease and a higher life expectancy (Renaud et al., 1999).

9.1.7 Organic Certification

The present study found out that the bio-district Cilento recognizes two methods for organic quality assurance. Products may be certified organically through a TPC or could remain uncertified without a label, as in the case of a PGS. Consumption of locally produced organic food by locals means that TPC is not required as it only increases the costs of the products.

The study also found that stakeholders consider food production following organic principles as superior and more significant than organic labels in the bio-district Cilento, hence the PGS. The PGS also ensures support and encourages producers to continuously work together by sharing knowledge and experiences to improve their farming practices (Källander, 2008).

Furthermore, the short food supply chains of the bio-district Cilento are another reason for PGS in the territory. For external markets
concerned with the future expansion of the bio-district market to other geographical areas, TPC with an organic logo is essential. Italy adheres to EU regulations for organic agriculture, specifically the Regulation (EU) 2018/848. The country has no national organic logo. However, in the bio-district Cilento, organic labels exist and are used if required. A bio-district label was developed by the Italian Association for Organic Agriculture (AIAB) stemming from the bio-district Cilento's pioneer model experience (Pugliese et al., 2015) (Figure 9.15). The author further explains that the label is conceived as a tool for collective territorial promotion.

![AIAB Logo](image)

**Figure 9.15: Bio-District Label**  

![BIO-DISTRETTO CILENTO](image)

**Figure 9.16: Official Label of Bio-district Cilento**  

AIAB launched the AIAB bio-district label in 2014 at the official establishment of the AIAB National Network of bio-districts. The label is not an organic label focused on products; rather, it is authorized only to the territories (bio-districts) that are part of the AIAB Network and adhere to the AIAB guidelines. However, the label is used in conjunction with the district logo, as seen in Figure 9.16.
9.2. Description of the Bio-district Cilento

The following information was obtained through an interview with the informant, and it describes the bio-district Cilento, including its inception and current state. The bio-district Cilento is a non-profit association involving various organic actors in the Campania region of Italy. The bio-district Cilento is also sometimes referred to only as Cilento, bio-territory, or ecoregion. It is the first of its kind in Italy and also around the world. Its inception began in 2004, and at the time of data collection, the bio-district had been in existence for exactly 15 years. It serves as the model for other bio-districts/ecoregions around the world. Figure 9.17 shows the fifteenth anniversary logo of the bio-district.

![Figure 9.17:15th Anniversary Logo of the Bio-District Cilento](image)


After disseminating the bio-district approach in almost all of Italy, about 32 other eco-regions exist, with 30 more under construction (Informant interview, 2019). In 2014, the International Network of Eco-Regions (IN.N.E.R) was established to foster cooperation between Italian bio-districts and similar initiatives in Europe. There is an agreement between farmers, consumers, public administrators, and other local actors such as the travel agencies who promote the territory in a bio-district. The model of Eco-regions following the successful establishment of the bio-district Cilento has led to disseminating the model in other countries around the world,
specifically in Portugal, where an Eco-region office has been established.

The bio-district Cilento was started by local actors, precisely ten farmers from the Elea Velia Hill. Initially, however, it was not called a bio-district. The name bio-district came following the sustainable approach being used. These actors' initiative was started in the mountainous area of the PNCVDA. The bio-district Cilento is located inside this national park. It is the second-largest National Park in Italy, consisting of three parts: the mountains, the valley, and the coastal area. In the mountainous area, Alburni Mountain, the bio-district was started with ten people who wanted to revitalize the park's internal rural area. The second is the coastal area, Cilento, and the third part is Vallo di Diano on the border with the Basilicata region.

The ten actors received support from AIAB Campania, the Campania branch for the Italian Association for Organic Farming. Campania is the name of the region where the bio-district is situated. This was the driving force behind creating the bio-district in the Alburni Mountains. The bio-district worked with actors in the area who adhered solely to organic principles in their production. Since many farmers lived in the mountains, vegetables, milk, and meat were abundant. However, they had no access to stable markets for their products, hence the motivation to come together as a group to find suitable markets for their wares. Finally, there was a decision to move toward ecologically safe agricultural production. At the time, the sole focus was on agriculture because the village's youth struggled to find good jobs, white-collar jobs, and thus the push was for a new approach, better economy, and ultimately for the development of the area. This led to the organization of many public forums and meetings, and, finally, in 2009, this innovation finally came to fruition.
According to the informant, the concept of organic has always been in existence in Cilento. It is a way of life for the people, but creating a bio-district arose from a need to create cooperation and to network and found suitable markets for organic products. One of the biggest challenges was a market for organic food produced in the area because subsistence farming was the way of life. Every inhabitant can be said to be a farmer due to family farms and home gardens; thus, people do not need to buy food because they are producers of this food.

This led to the public-school canteens' involvement, which resulted in the creation of local markets for organic food. A link was created between the internal rural area and the coast because the coastal area brings in many tourists. Summer is the holiday time when many tourists visit this territory and demand organic food and an opportunity to visit multifunctional farms. Thus, a market for organic food was created outside of the local consumers since they did not consume the tons of organic food they produced. It is significant to note that this market was created with the younger generation in mind. A local system was established for local, sustainable food.

The bio-district has grown over the years. Cilento currently comprises 38 municipalities, meaning an increase in the number of people interested in purchasing organic food, more restaurants, and public canteens. After 15 years of being in existence, the bio-district has developed into a local and SFS. Many farmers export their produce, especially the producers of wine (organic) and olive oil (extra virgin olive oil). Nonetheless, there are challenges because, at the moment, there are 38 municipalities with 450 organic farms that supply organic produce to the school canteens through the Green Public Procurement (GPP) program of ‘Ministero delle Politiche Agricole, Alimentari e Forestali/ Ministry of Agricultural, Food and Forestry Policies’ (MiPAAF). This program supports the cost of running the public canteens and hospitals through the
municipalities. However, the demand for organic food is higher than the supply, and until this is met, most local products cannot be exported. Nonetheless, there is a relatively healthy internal market.

The bio-district follows multi-level governance with all the actors in the territory using a community approach. The participatory and inclusive community approach of a bio-district where all the actors act to benefit the territory creates virtuous governance. This allows decisions to be made at the citizen level creating a shift towards real local and SFSs. This requires knowing the needs of the different actors in order to address them appropriately. It involves training, education, social activities, and the services provided to tourists.

The bio-district comprises five main components, as can be seen in Figure 9.18. The first is agriculture, coupled with the environment, culture, economy, and society. All five components of the bio district are interrelated in a complex system producing a virtuous cycle and innovative outcomes. In the virtuous cycle, you have five dimensions leading toward a local and SFS. They shape a bio-district creating a more attractive territory where one can eat healthy food and walk through different landscapes because of its biodiversity. Organic production preserves the landscape of the bio-district. Thus, it is essential to the territory because the territory comprises many different varieties of plants, insects, and animals, creating a diverse ecosystem.
In the territory, all beaches have been awarded the Blue Flag for clean beaches by the International Foundation for Environmental Education. This is because of the excellent, unpolluted water quality. Good water quality is essential for agricultural production. Agriculture in the territory is intrinsically linked with the environment, and ultimately with the society. The production system within the bio-district is formed through Organic 3.0, focusing on territorial management and agroecology. Bio-districts are inextricably linked to agroecology and to organic agriculture producers in Italy.

In the bio-district Cilento, there are certified organic farms and family farms that are not certified under the TPC. However, these farms adhere to agroecology farming principles and contribute to the protection of the environment and improved water quality. In Europe, organic agriculture is highly regulated. Compulsory European regulations exist, and products need to be certified by a third party to obtain the organic label. In the territory, TPC is not of the utmost importance. TPC is only significant when produce is sold out of the territory as organic. In the bio-district Cilento, the PGS is used because actors trust each other and know quality. There are
approximately 400 certified organic farms in the bio-district, but many uncertified family farms. Family farms mostly produce food for self-consumption. They do not need TPC, although the production methods adhere to an agroecological approach beneficial for developing the territory as an Eco-region. On the 24th of March 2016, the Italian Ministry of Agriculture approved the agroecological approach in the bio-district concept in the National Action Plan for organic farming. Figure 9.19 illustrates the bio-district Cilento as one based on an agroecological approach.

![Figure 9.19: Bio-District Cilento as an Agro-Ecological Approach with Key Actors](source)

Source: Basile et al., 2016.

Not all food produced in the territory is organic because the bio-district lies within the PNCVDA, and it must thus be noted that not all farmers within the PNCVDA produce organically. The Park comprises three different zones, and production within each of these zones differs. In the Alburni mountains, only organic agriculture is practiced, and in Cilento, the tourists create organic demand. Thus, there is a mixture of organic and conventional agriculture, although organic agriculture dominates. In Vallo di Diano, more conventional farms exist. This situation means that in the PNCVDA, agricultural production using only organic methods is not mandatory. No laws or regulations exist requiring farmers to use only organic farming
methods. However, inside the bio district, conditions exist for conversion to organic due to the local organic market presence. Conversion to organic requires two years for lands used in vegetable production and three years for fruit trees (Informant interview, 2019).

Organic commodities produced in the bio-district Cilento include vegetables, cereals, legumes, meat, olive oil, and ‘Mozzarella di Bufala Campana/ mozzarella from Campania buffalos’ (received the European certification Product of Designated Origin, EEC Regulation no. 1107 from 12th June 1996) which are regarded as a typical product of southern Italy. Since many tourists visiting the area eat pizza, it increases the demand for local mozzarella. Another essential commodity in the bio-district Cilento is white fig.

Regarding finance, the bio-district thrives on money from the annual fee of its members. However, other organizations also contribute in part to the realization of the bio-district’s activities. Schools inside the bio-district have special training courses for farmers and persons who wish to engage in organic production. The funds for this usually come from the EU through special programs. Likewise, the municipalities request funds directly from the state to support the GPP. Table 9.1 shows the bio-district Cilento in figures.

**Table 9.1: Bio-District Cilento in Figures**

<table>
<thead>
<tr>
<th>Region</th>
<th>Year of establishment (Official)</th>
<th>Municipalities at present (n.)</th>
<th>Total surface Area (km²)</th>
<th>Numb er of Inhabitants (n.)</th>
<th>Organic operator (n.)</th>
<th>Organic UAA (ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bio-distri ct Cilento</td>
<td>Campa n- ia</td>
<td>2009</td>
<td>38</td>
<td>3.196</td>
<td>269.846</td>
<td>400</td>
</tr>
</tbody>
</table>

Source: Own table
To fully understand the operation, drivers, and perceived effects of the bio-district OFS, it is expedient to know how the OFS was founded. According to the informant interview, the OFS was started by a group of farmers in the territory. Under AIAB Campania's guidance, the OFS was formed and included some 38 municipalities in the Campania region. Figure 9.20 presents a detailed diagram of the bio-district inception.

Background: Farmers had a problem with inadequate markets for the sale of organic produce. Farmers were struggling to market their produce.

Training: A training was carried out in Campania Region by AIAB on environmental, economic, social, and cultural sustainability. This training, however, was not related to the existing problem. Following the successful implementation of the training, AIAB Campania was requested by the Ascea City Council to implement a project in the territory.

Planning and development: After several meetings and public forums, a move was made to solve inadequate organic markets. This move was to be done through a partnership involving multiple actors. AIAB Campania then received funding for the coordination of the bio-district.

The project began in 2004 with a series of meetings and public forums involving various organizations interested in creating new avenues for sustainable resource management. Due to the strong support of the Campania Regional Secretariat of Agriculture and other organizations, the first multi-vocational European Bio-Distretto was recognized in 2009.
In 2011 the "Cilento Bio-district" association was formally established as a non-profit association with its head office in Ceraso, Italy. As of 2015, the bio-district Cilento was comprised of 32 municipalities with 450 Organic farms.

In 2019, the bio-district experience spread throughout Italy in 15 out of 20 Italian regions. In total, 32 bio-districts have been constructed in Italy. The year 2019 also marked the 15th Anniversary of the bio-district Cilento.
9.3 Key Foundational Principles

The bio-district Cilento was founded based on the principles of organic agriculture. In Italy, the practice of organic agriculture is inherently linked to agroecology. Agroecology in Italy is connected to the development of organic farming. The bio-district Cilento is also built on three main principles: economic, social, and environmental, and the promotion of organic is inextricably linked with the particular characteristics of the land (Pugliese et al., 2015). The authors further explain the three dimensions on which the bio-district Cilento was founded.

The economic dimension deals with the economic benefits that organic stakeholders earn from being a part of the bio-district. This is evident in the low cost of certification, creation of economic activities (bio-spaigge), territorial marketing tools (AIAB Bio-Distretto® label), and GPP initiatives.

The social dimension focuses on social cohesion in support of inclusive territorial development. This development is sustainable, creates jobs and employment opportunities, revitalizes rural areas, supports vulnerable groups (including migrants), and protects farmer and consumer health.

The environmental dimension addresses the increase in biodiversity by protecting and using local and ancient cultivars, natural resource protection, landscape conservation and maintenance, enhancements, and soil fertility improvement through regenerative agricultural practices.

According to Pugliese et al. (2015), the bio-district Cilento project was built on the following aims and principles:

- To popularize and diffuse organic farming practices and mix farming systems in the area to encourage a constructive co-existence between organic and conventional agriculture.
• Making life easier for organic farmers through the simplification of organic certification.

• The promotion of food sovereignty and direct producer-consumer relations through alternative food networks

• Sustainable territorial development progressively built on a multidimensional vision of development.

According to a report by the Erasmus+ project with the title ‘Teaching Agroecology in the Transitory Period and its Consequences for the Agricultural Knowledge Systems’ (Euro-EducATES), the authors Basile et al. (2016) explain that the fundamental principles on which the bio-district Cilento was founded have led to the following benefits.

• GMO-free Products: the bio-district is known to be GMO-free.

• Local Products: the implementation of initiatives that lead to the valorization of local organic produce: bio-district products, markets, holiday farms that produce and use organic products, organic food catering services, organic restaurants, and organic food stores. The idea of local in the bio-district also means a short food supply chain of 0 km.

• Promotion of Organic Farming Principles: use of these principles in other areas, such as managing the public parks, waste, and building regulations.

• Ethical Actions: the authorities, both local and public, commit to disseminating information about the organic culture by implementing initiatives like trade fairs, bio-spiagge, and bio-routes to valorize local organic produce.

• Social Principles: to promote organic farming in state-owned land and collective properties, transforming them into
organic farm incubators, with a view also to promoting ‘social agriculture.’ Social agriculture in the territory involves using agriculture to integrate migrants into the Cilentan community.

- Awareness creation: information on the organic farming model and the valorized activities of the bio-district is provided to the local area and broader public. This is done through brochures advertising local products and services, calendars of bio-district events, and social media channels including Instagram, Facebook, and YouTube.

- GPP initiative: there is an initiation through green purchases and promoting organic food consumption in school canteens, public offices, and health facilities.

- Shopping baskets: there is a shopping basket concept in the territory, which gathers the best organic products like Cilento white figs, Paestum round artichokes, mozzarella, honey, olive oil, and a wide range of other products, including seasonal organic products.

Certain concrete activities guide the flow of operations in the bio-district to make it attractive and enjoyable for all actors.

9.4 Organizations Involved/Key Projects

The growth and success of the bio-district Cilento have captured the attention of various organizations. Table 9.2 summarizes some of these institutions and the various roles they play in supporting Cilento. Some of these institutions, like AIAB-Campania, were key actors in the process of bio-district establishment.
Table 9.2: Institutions and Organizations operating in the Bio-District Cilento

<table>
<thead>
<tr>
<th>Institution</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>MiPAAF</td>
<td>The Italian governmental department responsible for the coordination of government policies on agriculture, forests, food and fisheries at the National, European and International level.</td>
</tr>
<tr>
<td>AIAB-Campania</td>
<td>AIAB is the Italian Association responsible for the organic certification in Italy. In the bio-district Cilento, AIAB-Campania is the main operating body offering organic extension services. The Association represents and supports the interests of organic producers in technical and bureaucratic aspects while facilitating access to organic markets. It informs consumers through trainings as well as training and updating organic technicians.</td>
</tr>
<tr>
<td>Mediterranean Agronomic Institute of Bari</td>
<td>It is the center for post-graduate training, applied scientific research and design of ‘in loco’ partnership actions within the framework of international research and cooperation programs</td>
</tr>
<tr>
<td>IN.N.E.R</td>
<td>It was set up in 2014 to bring similar together bio-district projects in Italy and around the world. The reason for this Network is to create a platform for knowledge exchange and transfer.</td>
</tr>
<tr>
<td>National Information System on Organic Agriculture (SINAB)</td>
<td>SINAB is a platform that offers information and services to organic stakeholders in Italy for the general</td>
</tr>
</tbody>
</table>
development and promotion of the Italian organic sector.

<table>
<thead>
<tr>
<th>Council for Agricultural Research and Agricultural Economic Analysis (CREA)</th>
<th>Established in 2015 from the merging of the Council for Agricultural Research and National Institute of Agricultural Economics, CREA is the leading Italian research organizations dedicated to agro-food supply chains.</th>
</tr>
</thead>
<tbody>
<tr>
<td>FederBio</td>
<td>A Multi-professional entity aimed at improving and extending the quality and quantity of the food products obtained with organic and biodynamic farming techniques through professional rules in line with the IFOAM guidelines.</td>
</tr>
</tbody>
</table>

Source: Adopted from Oliviera, 2013.

According to Pugliese and Antonelli (2015), the following organizations and institutions are also significant for the development of the bio-district Cilento:

- **PNCVDA**: This Park supported the initial concept for the bio-district and provided some financial support. Later, its involvement in the bio-district diminished due to a change in Park leadership. Subsequently, the collaboration between the Park and the bio-district has been rekindled.

- **The Agricultural Department at the Campania Regional Authority**: In 2014, the Authority issued a regional law that led to the recognition and creation of quality agro-food districts with short food supply chains. It is also responsible for the Integrated Territorial Development Plan and multi-year financial support for organic extension services. Through the EU structural funds, the Authority funded
several technical advisory activities for local farmers as well as the organization of local markets.

- Agricultural Department of Salerno Province.
- National Union of Mountain Municipalities.

Other than the above organizations and institutions, the bio-district Cilento was established through some actors' timely intervention. This intervention was made through a joint drive of some organic farmers looking for suitable markets for their produce. Today, however, the bio-district Cilento comprises various actors who perform varied roles. Basile and Cuoco (2012) define the roles of the actors in the bio-district as follows:

Farmers: Are considered the bio-district stakeholders as they need to adhere to organic production rules. As actors in the OFS, farmers can market their produce locally through the AIAB PGS (local, 100% Italian, GMO-free).

Consumers: Through particular organic markets, farm shops, direct distribution, consumers can purchase local organic products. Through the bio-district network, consumers can establish direct farmer-consumer relationships of trust and cooperation. The consumers' desire to purchase local organic products ensures proper care for the environment by safeguarding natural resources.

Public Authorities: Local and public authorities play a crucial role in the OFS. They are responsible for implementing policies and safeguarding the organic culture (declaring GMO-free area). The authorities promote the bio-district's organic culture through various initiatives. These initiatives promote organic farming in state-owned land and shared properties (mostly seized from the mafia),
supporting green purchases through organic food, school canteens, public offices, and health facilities.

Research Institutions: These institutions support the OFS through trials and training activities for some actors.

Associations: Various associations, including environmental associations, agricultural associations, eco-tourism associations operating at different levels, and promotion of the bio-district activities. For example, among the activities of AIAB Campania is the coordination of the bio-district Cilento activities.

Enterprises: Various enterprises, including food production and agricultural equipment companies, and HORECA are essential for promoting the bio-district through the various innovative products they offer.

Figure 9.21 presents an illustrative view of the actors in the bio-district Cilento.

![Figure 9.21: Actors in the Bio-District Cilento](source)

Source: Own figure
innovations contributing to human development, conservation and valorization of environmental resources, and to poverty and social exclusion reduction (Basile & Cuoco, 2012).

Euro-EducATES: Teaches agroecology in the transitory period and its consequences while focusing on strategic partnerships for vocational education and training through cooperation and innovation for acceptable practices (Report on the approach of agroecology in Italy. Version 3.0).

Agrispin: This project identifies best practices for innovation and support systems.

Healthy Growth: A project working with organic value chains and investigating how they combine values and increase volumes (Pugliese et al., 2015).
10. Documentation of the Organic Food System Case in Södertälje, Sweden (Muhammad Usman Khaliq)

10.1 Background Information of the Södertälje

10.1.1 Geographical Description

Södertälje consists of 694 square kilometers. It is situated approximately 30 kilometers southwest of Stockholm. Södertälje's boundary is linked with the Baltic Sea in the south and Lake Mälaren in the north. Södertälje's boundary is also connected with Södermanland County and its municipalities Trosa and Gnesta. Södertälje has 86 lakes, 23 nature reserves, and 707 islands. Södertälje is ranked the 20th largest city in Sweden. The municipality of Södertälje comprises four municipal districts Enhörna, Järna, Hölö-Mörkö, and Vardinge-Mölno. Järna is situated 10 kilometers south of the center of Södertälje. Järna consists of an Anthroposophical community and is a hub of locally organic and biodynamically produced foods. Enhörna, known as "cherry county" due to the abundance of cherry trees, is located northwest of Södertälje. Hölö-Mörkö is located south of Södertälje. It consists of the Hölö countryside area and islands of Mörkö and Oaxen. Hardinge-Mölno is the smallest municipal district of Södertälje and is known as a model for a pleasant rural environment.

Södertälje has a humid continental climate (Peel et al., 2007) and has four different seasons. Because of the municipality's high northern latitude, sunshine differs extensively from more than 18 hours around midsummer to only about 6 hours in midwinter.
10.1.2 Demographic Information

Södertälje comprises 96,032 inhabitants. Fifty-three percent of the 96,032 have a foreign background. Approximately 80 different languages are spoken in Södertälje.
10.1.3 Economy

Södertälje is a fragment of Stockholm County. Södertälje is a fair-trade city which is the most competitive area in the world. Södertälje is known as the home of industry. It consists of large manufacturing corporations like AstraZeneca and Scania. These two corporations account for one-third of Södertälje jobs, which is around 16,000 people. During the workweek, 21,599 people drive to Södertälje for work and 15,071 drive from Södertälje to their place of work. Volkswagen's Swedish headquarters is also situated in Södertälje. Lantmännen Axa Food Service, Salta Kvarn, and Järna Mejeri/ Järna dairy are in Järna, 10 kilometers from Södertälje.

Södertälje had 7,402 registered businesses in 2016. It consists of the third-largest labor market in the Stockholm region consisting of 48,758 jobs. Södertälje has started 630 new companies and reports 35% of jobs in the southern Stockholm region.

10.1.4 Agricultural History

Södertälje is well known for organic agriculture, being home to a biodynamic center, a research center for ecological regenerative agriculture, several educational institutions in farming and gardening, and many organic farms. The records of organic farming in Södertälje indicate a return to the 1930s when the
Anthroposophical Community of Sweden inhabited the region. The Anthroposophical Community has a philosophy of life, focusing on biodynamic farming (Antroposofiska Sällskapet, n.d.). Biodynamic farming is similar to organic farming. It abstains from artificial chemicals and views the agricultural region as a system; all parts of the system have to work to prosper. A few practices in biodynamic farming involve spiritual customs in food production (Antroposofiska Sällskapet, n.d.). The Community has further studies about biodynamic and organic farming since its move to this region. Järna, and its focus on biodynamic farming, has gained consideration from the municipality of Södertälje. There is a pride in the historical connection to sustainable agriculture, and Järna has further involved BERAS International. This institution aims to help societies transition into sustainable agricultural methods and OFSs.

Södertälje has created organic food supply chains from farms that use Ecological Recycling Agriculture (ERA). ERA principles state that farming techniques require the use of renewable resources. It involves recycling and emphasizing biodiversity to ensure that farming is a contributing segment of the ecosystem. An ERA uses similar processes to biodynamic agriculture without mystical rituals (Diet Unit, 2014). The number of animals on the farm is balanced with the farmland's size, and crops are rotated to sustain the ecosystem. This plan allows them to reach higher self-sufficiency without the use of synthetic fertilizers (Stein-Bachinger et al., 2013).
10.1.5 Food Environment

Södertälje's food environment consists of direct and indirect consumer food access. Local organic food is available for direct distribution. Big supermarket chains have introduced organic food products to consumers at a reasonable price. The Kooperativa Förbundet/ Consumer Cooperative (KF) was the first one to add organic products. ICA, COOP are examples of organic food available outside of the big supermarkets. Right now, there are some organic food products at any Södertälje grocery shop. Different methods are used for increasing the sale of organic products. These are illustrated below.
10.1.6 Food Consumption Patterns

These Nordic countries follow Nordic Nutrient Recommendations (NNR) established in 1960 (NCM, 2012). The NNR is revised every ten years. The current NNR (NNR5) was developed in 2012.

NNR deals with nutrient consumption ratios, helping to overcome the risk of obesity and Non-Communicable Diseases (NCD) such as diabetes and heart disease. At the beginning of the NNR5 document is a chapter demarcated sustainable food consumption. This chapter identifies that "for food consumption to be sustainable, it has to be safe and healthy in both amount and quality, which has to be achieved through means that are economically, socially, culturally and environmentally sustainable." In Sweden, an environmental effect assessment was made in conjunction with the NNR, which guided their 2010-2011 national dietary guidelines (Livsmedelsverket, 2018). The Diet Unit at Södertälje municipality followed the Diet for a Green Planet concept in their shared kitchens. This concept's appeal
is that the food is local, healthy, organically produced, seasonally
grown and distributed, contains less meat, more fruits and vegetables,
and less food waste. This concept applies to local, government-run
cafeterias, which mainly consist of school cafeterias and retirement
homes. Overall, the local government seeks to encourage sustainable
and healthy eating habits while preserving the surrounding natural
environment. According to the European Association for the Study of
Obesity, around 6-8% of Swedish children are obese. Programs like
the Diet for a Green Planet can help Swedes maintain their relatively
healthy status in a world of rapidly changing food norms (Diet Unit,
2014).

10.1.7 The Organic Sector in Sweden

Sweden has a high proportion of organic food available for public
procurement. In 2016, Sweden had a 33% share of organic food in
the public sector, which grew to more than 38% in 2018. Sweden is
one of the highest purchasers of organic food for its public sector
(Ekoweb, 2019). In 2018, the national organic food sector made up
9.6% of Sweden's total market (ibid.). Since 2005, agricultural land
used for organic food production has grown by 125%. Consumers
have also started to buy local organic food products and consume
Swedish domestic and regional food (Jordbruksverket, 2014). A
survey based on consumer analysis found that 67% of Swedes were
willing to pay more for local Swedish food (ibid.). Moreover, 69% of
Swedish consumers looked for Swedish products when shopping,
and 61% buy Swedish food products. The report concludes that
consumers believe that local food production minimizes carbon
emissions, enhances local economies, and provides higher quality
and better-flavored products than imported varieties (Hempel &
Hamm, 2016). Sweden has 5,801 organic producers, 1,328
processors, 89 importers, and ten exporters. Arable crops utilize 0.4
million hectares in Sweden (Willer & Lernoud, 2019). Currently,
Sweden has 576,845 hectares of land, which is organically certified. According to a FiBL survey, Sweden represents an 18.8% organic share of the total farming land (Figure 10.5).

![Countries with an organic share of at least 10% of total agricultural land (2017)](image)

Figure 10.5: Illustration of Organic Agricultural land of Sweden and Other Leading Countries
Source: Adapted from FiBL survey, 2019.

Before the 1980s, organic agriculture in Sweden consisted of various organizations working in isolation. Each organization had its own rules and regulation for organic farming. It was comprised of the Biodynamic Association (located in Järna), the Association of Natural Growers, the Organic Biological Association. A common framework for organic agriculture was formed in 1980 with the collaboration of Samarbetsgruppen för Alternativ Odling/ Collaborative Group for Alternative Cultivation. This association came into being when organic agriculture became market-driven and politically oriented. KF brought this concept to the general national assembly and motivated it to provide organically certified products to consumers.

Alternativodlarnas Riksförbund/ National Association of Organic Farming (ARF) was established in February 1985. The purpose of ARF is to work with farmers on policymaking and marketing. ARF
was converted into Ekologiska Lantbrukarna I Sverige/ Swedish Ecological Farmers Association in 1994.

The initial goal of ARF was to develop a certification system built on standard organic agricultural practices. KRAV was founded two weeks after ARF was created. KRAV aims to unite all organic practices under a common agenda based on openness, transparency, and the ability to join any institution to obtain certification. Initially, KRAV consisted of three members; ARF, Association of Natural Growers, and Lantbrukarnas Riksförbund/ Federation of Conventional Farmers (LRF).

Another mission of ARF is to endorse organic food market development and marketing of organic products. ‘Samodlarna Sverige’ represents the organization of regional vegetable cooperatives. All these collaborative institutes work towards developing food marketing, food processing, and food chain construction, enabling wholesalers to take organic products.

10.1.8 Organic Certification

KRAV and Demeter are two private certification and inspection bodies that are acknowledged by the Södertälje OFS. KRAV standards are based on the criteria of IFOAM and are entirely accepted by the government. Demeter standards are based on the international standards of biodynamic farming.

KRAV is a well-known label in the Södertälje organic food market, which is impressive for a private certification body. KRAV is integrated with 27 other associations that have different roles in the agriculture and food sector. KRAV certifies the Södertälje Diet Unit kitchens (KRAV, 2016). Approximately 24 farmers and 16 companies, including food processing and trading entities, restaurants, and cafeterias, are certified according to KRAV rules in Södertälje. Almost eight certification bodies are at work based on
KRAV rules (KRAV, 2019). Järna is home to the biodynamic certified food network.

In Södertälje, organic certification is done based on the EU Organic Certification and Swedish National Certification label KRAV (Lantmännen, 2019). Organic certification in the EU is regulated based on the legislative framework governing organic products' organic production and labeling, covered by council regulation (EC) 834/2007. Södertälje also has a TPC system. Control bodies TPC approve certifications based on organic standards (Zorn et al., 2012). In the case of Södertälje, control bodies are private, and they must prove their suitability to certify different organic operators according to the EU guidelines and regulations. If the control body meets the requirements, then they receive the authorization to certify under EU standards. Only private control organizations follow the process of accreditation and regular inspection. Government controlled organizations are free from accreditation but must update their certification details to remain a competent authority of the member state.

Along with certification, organic labels help consumers to differentiate between organic and conventional food products. Organic labels guarantee the consumer that a product is appropriately inspected and certified. (Janssen & Hamm, 2012). The organic label is a way of informing consumers about the origin of organic products. In Södertälje, the KRAV or Demeter label is used along with the EU logo. The EU label represents that certified organic products contain more than 95 percent organic material and obey inspection rules.
10.2 Overview of the Södertälje OFS

Current records of the OFSs in Södertälje confirm the initiative was launched in 2001 with a political decision to target public food programs (URBACT, 2018). This decision facilitated the establishment of the Diet Unit, which is committed to accomplishing FS sustainability. In 2004, the Diet Unit had only a few schools that agreed to participate in the program. With the composition of the Södertälje diet policy produced by the Diet Unit, the idea gained traction. The Diet Unit produced the Diet Policy, a political paper that focused on foods in kindergartens, schools, and aged care facilities (Nordlund, 2015). This political paper was completed and approved
in 2010 by the city council and declared that food distributed from the shared kitchen "…. shall be produced under ethical conditions and with as little harm to the environment as possible" (BERAS International, n.d.).

In the same year, 2010, Södertälje joined the BERAS Implementation project, a three-year international project partially funded by the EU, a portion of the Baltic Sea area program active from 2007 to 2013. Södertälje municipality played a fundamental role in this project by contributing their understanding of participant motivation and practical ways (building upon the knowledge explained above of procuring the public meals through ecological methods) to prepare food to protect the Baltic Sea (Diet Unit, 2014). The Diet Unit at Södertälje municipality followed the Diet for a Clean Baltic concept in their shared kitchens.

When the Diet Unit received the authority to prepare public sector meals in 2017, the percentage of organic foods obtained was 33%, compared to 57% in 2017. This percentage includes ecological farming, EU organic farming, and KRAV certified farms (Diet Unit, 2014). The 'Swedish Law of Public Procurement' has questioned locally cultivated food, as governmental organizations cannot be biased towards any firm in the state. Consequently, local growers are required to compete with other companies that register with the municipality. The food served is seasonally cultivated to convince the public of its freshness. To reduce food waste, Södertälje has employed educated chefs who prepare seasonal food and preserve and reuse food commodities to minimize waste. To achieve this, it was also essential to remodel school kitchens into facilities that could efficiently prepare food and reuse leftovers. Previous school kitchen designs involved meals at a secondary site, delivered and reheated at the school. The redesigned school kitchens have not raised the per-meal cost through the decline in using animal-based meals (nutritionally equal with more vegetables and whole grains)
and the ability to reduce food waste (Diet Unit, 2014). Södertälje's work with public meals has been recognized and rewarded (URBACT, 2018). Mälardalsrådet has featured their work, illustrating a creative and innovative way to enhance public meals in the region.

BERAS Implementation converted to BERAS International, an institution that helps municipalities and regions transition to sustainable food. BERAS International went from a program to a perpetual institution, and with this transition, the 'Diet for a Clean Baltic' was renamed 'Diet for a Green Planet.' The concept, regardless of name, consists of the ecological and sustainable principles detailed above.

During 2011-2014, Södertälje Närodlat (Södertälje Locally Grown) concentrated on defining Södertälje with locally grown food by focusing on the fundamental role of the Södertälje municipality city planning office (Nordlund, 2014). The municipality could guarantee municipal land for local food cultivation, which would generate employment in the sustainable food sector. The aim was to supply municipal meals (i.e., school lunches) with locally grown food to satisfy the guest with a healthy, sustainable, and well-tasting meal and promote rural employment in the county (Kostenheten, 2014). This program was highly skilled at identifying locally grown foods in Södertälje and matching those with what was needed for the meals (Kostenheten, 2014).

Between 2013-2015 Södertälje was the model city in the URBACT Project (Pilot transfer network project) 'Diet for a Green Planet.' This project captured the food concept built by BERAS Implementation/International. Södertälje municipality shared this program with three cities: ‘Moletai, Lithuania, Lomza, Poland, and Mollet del Valles in Spain’ (Nordlund, 2015).
Another URBACT funded project operating in Södertälje is the 'Agri-Urban Action Plan.' This project prepared documentation to outline desirable actions that would create a sustainable Södertälje. Among the suggested actions were agricultural parks, farming incubations, municipal vegetable farms, and a regional pollination plan. Many of these actions were initiated and are being accepted (URBACT, 2018).

In 2012, AstraZeneca, one of the two largest corporations in Södertälje, closed its doors. The Södertälje municipality decided to open Södertälje Science Park in the former AstraZeneca research complex. An integrated research park in Södertälje was proposed, uniting Scania, AstraZeneca (depicting the private sectors), and Royal Institute of Technology (KTH). The project leader for the Södertälje Science Park registered for funds from Tillväxverket for a program to enable the production of sustainable food. Tillväxtverket, and associated Subject Matter Experts (SME), generated the project in conjunction with MatLust. Simultaneously, the financiers for 'Södertälje Science Park' decided to focus on sustainable food production. The overall theme for Södertälje in sustainable food production was contained under the umbrella for Södertälje Science Park, but the focus on this task was lost. For the Park members who formerly worked with different sustainable food programs in Södertälje, this was regretful.

The local FS's focus in the Stockholm region aligned with the business program and the local farmers, processors, and gardeners working with MatLust. The focus included creating a sustainable food cluster for the Stockholm region with its pivot point at Södertälje. The application for funds from the European Regional Development Fund (ERDF), including Södertälje municipality, was finished in 2015, and the project began. The Södertälje financed portion included funds from Destination Södertälje, Södertälje Science Park, Salta Kvarn, and KTH (Uliczka & Jakobsson, 2017).
To expand capacity in the region, MatLust has helped various SMEs in the Stockholm district engage with the food industry. Participation is free, and the firms can select to participate in various networking activities, business, innovation development, modern research, and help with rules and regulations. Moreover, they have a product called Testbädden, where companies can expand their foods with MatLust's kitchen. Mateusz has organized various conferences since its initiation in 2015. It comprises the 'County Administrative Board of Stockholm,' various member universities (KTH, Södertörn University, Swedish University of Agricultural Sciences, BERAS International, and private and public members engaging in the food industry.

There is an opportunity to have an industry situated in an area, supporting different distributors and ventures. Södertälje is viewed as an area working towards assembling significant players in the SFS. Södertälje farmers produce cereals, beef, pork, lamb, rapeseed, vegetables (grown both in greenhouses and acreage), and dairy. There is significant egg production, and more farms are growing vegetables, legumes, root vegetables, and cabbage varieties. Food processing companies include Salta Kvarn and Lantmännen, which process flour, pasta, and breakfast cereals. Nordlund (2014) is looking at potato processing in the future to handle the organic potato crop.

In the local area, dairy, coffee, ice cream, bulgur, smoothies, and meat are processed, excluding Salta Kvarn, which packages their products. Ekoladan sells vegetables to institutions and private individuals in wholesale and distribution, and Salta Kvarn and Järna Bageri sell baked goods. Meat is produced in large quantities in the region, but adequate processing opportunities are absent, and the meat is exported to other areas (Kostenheten, 2014).
The FS mostly consists of small and medium-sized firms that form an organizational cluster. The exclusion is in the area of Järna, which was previously known as a sustainable food cluster. There are also examples of cooperative agriculture, or Community Supported Agriculture (CSA), where people participate in agricultural activities. One of these examples is Under Tallarna, a local CSA. Södertälje municipality is buying sustainable, local food from Under Tallarna for its public meal project (URBACT, 2018).

Table 10.1: Södertälje OFS Developmental Stages

<table>
<thead>
<tr>
<th>Years</th>
<th>Developmental Stages</th>
</tr>
</thead>
<tbody>
<tr>
<td>1930’s</td>
<td>The first organic/biodynamic farms in Södertälje are entrenched in Järna by German refugees.</td>
</tr>
<tr>
<td>1958</td>
<td>Research on farming systems and food quality starts in Järna. The study pursues today.</td>
</tr>
<tr>
<td>1964</td>
<td>Salta Mill and Bakery is established.</td>
</tr>
<tr>
<td>1974</td>
<td>Skillebyholm Biodynamic Training Center is established. Skillebyholm offers polytechnic level courses on the landscape.</td>
</tr>
<tr>
<td>1986</td>
<td>Nörrbyvälle is established in Skäve.</td>
</tr>
<tr>
<td>2001</td>
<td>The Södertälje municipality decided to buy food as a tool for sustainability. The position of ‘Head of the Diet Unit’ is generated. The Green political party was the driving force for public meals.</td>
</tr>
<tr>
<td>2004</td>
<td>The current ‘Head of the Diet Unit Sara Jervfors’ begins the job. Individual limited schools are under the Diet Unit administration.</td>
</tr>
<tr>
<td>2006</td>
<td>A diet policy is composed using a government paper tracking food in schools and senior homes.</td>
</tr>
<tr>
<td>2010</td>
<td>The city council approves diet tactics. The tactics declare that food “shall be produced under ethical</td>
</tr>
<tr>
<td>Year</td>
<td>Description</td>
</tr>
<tr>
<td>------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>2010-2013</td>
<td>Södertälje municipality joins the BERAS project. The Diet Unit is given the task to change and implement the concept ‘Diet for a Clean Baltic’.</td>
</tr>
<tr>
<td>2011-2014</td>
<td>The Södertälje locally grown project is started with the purpose to increase local food production and consumption, create green economy jobs, and encourage land-access practices for local food production.</td>
</tr>
<tr>
<td>2012</td>
<td>All public schools are under the management of the Diet Unit.</td>
</tr>
<tr>
<td>2013-2015</td>
<td>The URBACT pilot transfer network is established using the Diet for a Green Planet. Södertälje’s diet policy is successfully transferred to ‘Moletal in Lithuania, Lomza in Poland, and Mollet del Valles in Spain.’</td>
</tr>
<tr>
<td>2014</td>
<td>Södertälje was awarded ‘School food municipality of the year’ and Sara Jervfors was named 2014 ‘Diet Unit leader of the year’ in 2014 by White Guide Junior.</td>
</tr>
<tr>
<td>2015-2020</td>
<td>MatLust starts</td>
</tr>
<tr>
<td>2015</td>
<td>Agri-Urban starts</td>
</tr>
<tr>
<td></td>
<td>Lina Grundskolan was named school restaurant of the year and Sara Jervfors was named Diet Unit leader of the year for the second year in a row.</td>
</tr>
<tr>
<td>2016</td>
<td>Södertälje most significant job project MAP 2020 starts.</td>
</tr>
<tr>
<td>2017</td>
<td>The city planning committee adds ‘SFS’ as an area of focus</td>
</tr>
<tr>
<td>2018</td>
<td>Agri-Urban concludes! Work starts on implementing the Inter Academy</td>
</tr>
</tbody>
</table>
10.3 Key Foundational Principles

Södertälje is evolving into a local node for sustainable food production, consumption, development, and innovation in the Mäller region. Södertälje municipality is an innovator for SFSs and shares its knowledge with other cities. This work will develop a sustainable future with a booming economy, a high quality of life for its community, and attractive countryside for tourists and locals.

**Vision**

Södertälje will evolve into local node for sustainable food production, consumption, research, planning and innovation in Mälar valley.

**Mission**

Södertälje municipality is an innovator for SFSs and will exchange its information with other municipalities.

**Core values**

Resilience, thriving local economy, high quality of life, and a diverse and beautiful landscape for enjoyment and sustainability.

Figure 10.7: Södertälje Municipality Key Foundational Principles
Source: Own table

10.4 Organizations Involved/Critical Projects on the Case

Various private and public stakeholders govern Södertälje's OFSs. In the public sector, the Diet Unit and the MatLust project work collaboratively with the Diet Unit providing co-financing. The municipal political committees supervise the municipal work on
several aspects of a SFS. They give suggestions on how to use municipal land and how to develop a farming strategy. There are also organic training institutes that work collaboratively with the Södertälje municipal Diet Unit and the MatLust project. Cooperative agriculture, or CSA, becomes organized and undertakes many agricultural activities started by Under Tallarna. They cultivate the crops with attention to old knowledge, which enables land sustainability and biological diversity. Södertälje municipality is buying food from Under Tallarna for its public meal project with sustainable local food, supporting community-supported agriculture. Järna Mejeri (dairy) and Salta Kvarn also collaborate with Södertälje municipality. The Diet Unit of Södertälje municipality collaborates with 'BERAS International' to develop a SFS society.

**Figure 10.8: Södertälje OFS Governance**
Source: Own figure
11. NORTH AMERICA

Documentation of the Organic Food System in Southeast Pennsylvania with Focus on Chester County (Splendour Chukwunonyerem Iheanacho)

11.1 Background Information on the Region

11.1.1 Geographical Description

The United States of America is geographically located on the North American Continent. It is bordered on the north by Canada, on the south by Mexico, west by the Pacific Ocean, and on the east by the Atlantic Ocean. It is the third-largest country in the world by land area behind Russia and Canada, with 9,629,091 square kilometers, including overseas territories (Warner & Dickey, 1965). The United States is divided into five regions: The West, Southwest, Midwest, Southeast, and Northeast. Pennsylvania belongs to the Northeast region in Division II, known as the Middle Atlantic Region. Chester County belonged to the southeastern part of Pennsylvania in the greater Philadelphia region. It was among the first three original counties created by William Penn in 1682, including Philadelphia and Bucks Counties (Ball, 1976).
Figure 11.1: United States- Northeast Region- Pennsylvania
Source: Adapted from Google, n.d.

Figure 11.2: Pennsylvania State-Sub Regions Showing Chester County
Source: Adapted from Albright et al., 2017.

Chester County is about 760 square miles (approximately 1965.8 square kilometers) in the area and lies in the Piedmont
Physiographic Province in southeastern Pennsylvania. Rolling hills, and ranges in elevation, characterize the topography from about 150 to 1,071 feet. The County has a humid, temperate climate and receives average annual precipitation, distributed evenly throughout the year. Chester County has 73 municipalities, including one city (Coatesville), 15 boroughs, and 57 townships.

11.1.2 Demographic Information
The Northeast regions are home to 64 million people (Horton et al., 2014). According to the U.S. census in 2020, Pennsylvania has over 12.7 million people, with Harrisburg as the capital. According to population estimates from the 2019 state survey, there are 522,046 inhabitants in Chester County. Surveys from the Chester County Economic Development in 2018 show that Chester County is one of the largest growing counties in Pennsylvania, with over five percent growth annually from 2010 to 2020. The Northeast and Middle Atlantic regions' population growth started when people were searching for fertile land for agriculture (Ball, 1976). Chester County had a diverse population group during the 18th century, with the English in the east, the Germans in the north, and the Scotts-Irish in the west. There were overlaps in settlements between the Scotts-Irish, English, and Germans (Lemon, 1972).

11.1.3 Economy
Chester County is a culturally and geographically diverse suburb of Philadelphia, famous for its avid agricultural community, picturesque landscapes, and historical attributes. Reports from the Chester County Economic Development strategy in 2018 reveal that Chester County has one of the largest county-level economies in the United States. It was also projected to be the fastest-growing County in southeastern Pennsylvania in population and jobs for the coming year.
Chester County is an affluent county with health indicators exceeding national and state averages. The GDP in 2018 was fourth in the state at $41,947,957, putting it behind Philadelphia, Allegheny, and Montgomery counties. The Chester County poverty rate is the third highest in Pennsylvania, with a seven percent poverty rate in 2016. Chester County had the highest median household income ($92,417), followed by Montgomery County ($84,79) and Bucks County ($82,03).

According to recent surveys, Chester County has the highest median housing values by County in Pennsylvania at $331,000, and a median household income of $88,995, followed by Montgomery ($293,800, $81,902) and Bucks County ($311,600$, $79,559). Surveys from the Chester County Economic Development Strategy in 2018 reveal that some families in Chester County struggle with high living standards. This struggle is associated with the overall wealth in the County, which has a high economic disparity. According to public health studies, income and wealth inequality are significant concerns in Chester County due to the direct relationship between food security and health. Chester County has a vibrant independent restaurant industry and thriving local food establishments, ranging from locally-owned supermarkets to a surfeit of farmer’s markets, which serve urban, suburban, and rural communities.

### 11.1.4 Agricultural History in Chester County

The agricultural history of Chester County is recorded as early as the 18th century. When the County first welcomed the English, Germans, and Scotts-Irish, they dominated early agricultural practices, which established the foundation of modern agriculture in Chester County and beyond (Lemon, 1972). Chester County and Lancaster County warrant comparative treatment due to their mixed ethnic and religious populations and their highly skilled agricultural
practices, resulting in high productivity (Lemon, 1972). According to Lemon (1972), soil quality and minimal slope grade are the main reasons for abundant agriculture production in Chester County. The historical and regional factors that shaped the production and sale of agricultural products in Chester County are related to Philadelphia's proximity.

The three most dominated groups of farmers, the Germans, English, and Scotts-Irish, chose their locations differently based on farming ideology and water access (Lemon, 1972). Chester County is a wet and warm county, with a relatively long growing season. In Pennsylvania, Farmland has been decreasing over the decades due to urbanization, and Chester County is not an exception. Within the farmland, only a small portion is in organic production. According to the USDA's 2008 Organic Production Survey, out of 5,602,562 acres of cropland and pastureland in Pennsylvania, only 53,624 acres (about 1 percent) are farmed organically. According to the agricultural product market value, Chester County is first in Pennsylvania and twenty-fifth in the United States (Pruetz, 2017). Three percent of farms in Pennsylvania are being farmed organically (Pruetz, 2017). However, this number focuses on certified organic, excluding small family farms and some CSA farms that cannot afford certification but are applying ecological principles to their farming practices.

11.1.5 Collaboration Regional Alliance for Farmers Training (CRAFT)

In the United States, the percentage of farmers over 65 is higher than those below 35 years old (Niewolny & Lillard, 2010). This situation raises the issue that future farmers may lack training and mentoring if preparations do not start immediately. Farmer apprentice training and program development are proliferating throughout the United States (Niewolny & Lillard, 2010).
Development practitioners, educators, researchers, students, and farmers are currently experiencing the most significant policy and program response to create new opportunities for people interested in agriculture to begin farming (Niewolny & Lillard, 2010). For instance, in the fall of 2009, the USDA awarded roughly $19 million to the Beginning Farmer and Rancher Development Program (Niewolny & Lillard, 2010). This first-time competitive grant program signifies an essential point in time in the movement to support local and regional training, education, outreach, and technically based initiatives to address the critical needs of beginning farmers across the United States. CRAFT's primary mission statement is to create an environment that will allow young aspiring farmers the opportunity to learn how to farm and to exchange knowledge with each other.

The CRAFT program is a practical option for new farmer training. It is a hands-on, farmer-to-farmer education system with a significant on-farm component (Laura et al., 2018). CRAFT is a cooperative effort of local organic and biodynamic farms to enhance and encourage young farmers (Arnold, 2014). The CRAFT programs were initiated in 1994 at Hudson Valley/ Berkshires/ Pioneer Valley, and now it is present in over 12 regions in the United States (Arnold, 2014). The CRAFT program operates in partnership with the Penn State Extension office and the Pennsylvania Women's Agricultural Network to offer a full calendar of various CRAFT events at educational farms in southeastern and western Pennsylvania. The CRAFT program in Pennsylvania is under the Pennsylvania Association for Sustainable Agriculture (PASA). Some of the farms mentioned in this research participate in the CRAFT program, such as Spiral Path Farm and The Seed Farm.
11.1.6 Food Environment

According to Rideout et al. (2015), the Food Environment is defined as geographic access to food in a community or neighborhood, consumer experiences inside food outlets, services, infrastructure in institutional settings, and nutritional information. It is essential to consider the Food Environment when addressing nutritional outcomes, as it serves as the interface between the FS and individual diets (FAO, 2018b). There are several producers and distributors inside the Chester County Food Environment, such as the local CSA, the Chester County Food Bank (CCFB), and niche or local FS movements (Martinez et al., 2010). The community food environments of Chester County are well developed. A standard community food environment considers proximity to different kinds of food outlets, or the density and variety of various food outlets, within a specific geographic area (Rideout et al., 2015). The food outlets in Chester County range from CCFB, CSA, school-based gardens, community gardens, farmer's markets, and hot meal sites.

According to the 2018 Community Food Security Assessment in Chester County, Chester County has the highest average median income in Pennsylvania. The same report showed that the food prices in Chester County are relatively high due to the County's overall wealth. For instance, the average meal cost in Pennsylvania is $2.93. In contrast, the average cost per meal in Chester County is $3.54. Over 35,000 people live in poverty due to the large income disparity within the County.

The Chester County food environment must be considered in conjunction with the surrounding counties. Not all the actors interviewed are from Chester County, as indicated earlier, and this outside influence also contributes to shaping the County's dietary pattern. We must also consider what is going on with the Buy Fresh Buy Local message in the Greater Lehigh Valley (BFBLGLV), which
influences dietary choices decisions. The campaign message is the importance of being able to reveal the origin and means of food cultivation.

Not all farmers interviewed sell their products at the local market or a farmers market. A farmers market is where farmers sell their agricultural products directly to consumers, in set locations, during the local growing season (Oberholtzer, 2014). Those who cannot afford organic or local food prices may choose to join a CSA at the farmer's market. A CSA is a community of farmers who collaborate with subscribers to make prices affordable, and the subscribers can provide feedback to the farmer, including which products to grow (Cone & Kakaliouras, 1995). In Chester County, community members can build healthy eating habits through a visit to a farmers market, natural grocery store, participation in a CSA, or a visit to the CCFB.

Most of the farmers within the counties surrounding Chester County take their products to Chester County to sell due to its status in Southeast Pennsylvania as the state's wealthiest County. This situation makes healthy food choices possible because of the popularity of selling in Chester County. Some distributors provide nutritious food to customers who have no access to healthy food through a farmers market, CSA, supermarket, or grocery store. Lucan and Mitra (2012) argued that food availability through a retail food store, restaurant, or grocery store informs whether the residents' dietary patterns are healthy or unhealthy.

11.1.7 Food Consumption Pattern

The food choices that individuals make about what to consume affect overall health and wellness. Many Chester County citizens suffer from malnutrition and food insecurity. These health issues are due to the overconsumption of foods high in sugar and fat and
underconsumption of whole food such as fresh fruit, vegetables, and whole grains. These nutrition issues result from proximity to fast-food restaurants. According to the Child Policy Research Center and the National Initiative for Children's Healthcare survey in Pennsylvania, for every 10,000 people, there are 6.1 fast-food restaurants in Chester County, which results in 22% of adults being obese and 7.5% of adults having diabetes.

Unhealthy food consumption choices lead to dietary issues directly related to the prevalence of diabetes and obesity, impacting individuals, the community, and the larger society (Lucan & Mitra, 2012). According to Lucan and Mitra (2012), certain aspects such as quality, availability, and accessibility of food in the local environment contribute to shaping dietary patterns in a given community, town, city, region, state, or country. Davis (1982) shows the linkages between income, taste, preferences, expenditure patterns, and household nutrition. However, Chester County's overall health outcomes are ranked third in the state, indicating that residents can consume food that positively affects human health.

11.2 Key Foundation Principles

The foundation of the principles guiding organic agriculture in Chester County started in 1948 when J. Rodale founded the Soil and Health Association (SHA), which is now called the Rodale Institute. The Institute's mission is to earnestly conduct research and publish findings that will impact organic farming. In 1960-1970 there was growing recognition of the consequences of pesticide use, and intensive agriculture practices, on health and the environment. This, in turn, had a direct impact on the increased consumption of organic products. The transition to purchasing organic instead of conventionally grown food expanded the natural FS. This expansion created a need for TPC (Coleman, 2012). The Organic Trade Association (OTA) was created in 1985 to promote and protect
organic agriculture with a unifying voice that serves and engages its diverse members from the farm to the market (Demko et al., 2015).

An educational and research body is known as the Sustainable Agriculture Research and Education program (SARE) was formed in 1988 to help farmers transition to sustainable farming. This practice is profitable and protects land and water. It is a movement to reward the sustainable way of life chosen by farmers and ranchers whose quality products and operations directly impact their communities and society. SARE conducts on-farm research on farming practices, soil health, and much more. Grants are available from SARE, in compliance with their principles. Farmers must meet these guidelines in order to receive support from the USDA.

During the 1980s, there were many different organic certification agents. There was no common framework for all participating parties, which led to the creation of the National Organic Program (NOP) in 1990. The Organic Foods Production Act (OFPA) was also put into practice in 1990. This mandate was made under the USDA and the National Organic Standards Board (NOSB). The NOSB was formed in 1992, and it makes recommendations, while the NOP creates and implements regulations (Coleman, 2012).

Following the creation and certification of organic practices, the Organic Materials Review Institute (OMRI) was established in 1997 to examine the practices being used in organic agriculture. There were more than 40 certifiers who were performing organic certification using various state and private standards. In 2009 the National Sustainable Agriculture Coalition (NSAC) was launched to strengthen the organic movement by advancing sustainability, FSs, natural resources, and rural communities' support through federal policy reform. The Organic Consumers Association (OCA) was formed in 1998 to encourage the U.S. government to expand organic agriculture. OCA also supports strong standards for
"beyond organic" or regenerative organic standards, such as the Regenerative Organic Certification developed by the Rodale Institute and the Savory Institutes Land to Market Program. The National Organic Standards (NOS) were established in 2001 to implement the USDA standards into law. The establishment of NOS took ten years of debate within Congress.

Regional and state actors were in support of organic agriculture and governance across the United States. These actions led to the National Organic Action Program (NOAP) in 2006. It encouraged collaboration in organic communities and set out a broad set of goals to guide organic agriculture in the United States. This action is reviewed every three years (Kintish, 2000). NOAP comprises farmers, workers, regional processors, retailers, concerned consumers, and community members. It is present in 28 states out of 50 in the United States (Kintish, 2000). The essence of NOAP is to support family farmers, protect human health, and benefit the environment. NOAP established organic as the foundation for food and agricultural production systems across the United States (Kintish, 2000).

Chester County moved into organic production and regulation with the PASA formation in 1992 and the CRAFT in 1994. In 2008, the USDA passed the Farm Act, which allowed organic farmers to express their concerns and opinions about organic agriculture and more land for organic cultivation.
11.3 Organizations Promoting the OFS in Chester County/Southeast Pennsylvania

11.3.1 Common Market

Common Market headquarters is located at 428 E Erie Ave, Philadelphia, PA 19134, United States. Common Market is a combination of both partnership and cooperative organizations and was established in 2004.

The organization's goal is to assist local farmers in marketing their products to consumers in a way that benefits both parties. Its formation lies in the difficulties of the supply chain sector and constant and high-volume farming, leading to higher costs for local products (Martinez et al., 2010).

Recently, there has been a renewed and continuously growing interest in substitutes to shorten the food supply chain, creating more direct links between farmers and consumers in localized FSs (Young, 1939).
The Common Market's mission is to connect consumers, counties, and cities with sound and sustainable food from local family farms while striving to improve food security, farm viability, community economy, and ecological health. The Common Market has contributed to rural vitality by enhancing regional food self-reliance by creating an efficient local food distribution infrastructure that will connect local farmers to urban communities.

The potential product lines for the Common Market include locally farmed fresh produce (fruit and vegetables), dairy (cheese, yogurt, milk, and butter), meats of all kinds (fresh and frozen), honey, maple syrup, cider, and juices.

11.3.2 Villanova University

One of the Educational institutions promoting OFSs in Southeast Pennsylvania is Villanova University. It is located at the St. Augustine Centre of Liberal Arts, Rm 19, Augustine and Culture Seminar, 800 Lancaster Avenue, Villanova, PA 19085.

This University came into existence in 1842 by order of St. Augustine. From the foundation, Villanova's Augustinian Catholic tradition was seen as a strong foundation for an academic community where students acquire the ability to think critically, act compassionately, and succeed while serving others.

The Villanova community stimulates students' growth intellectually, professionally, and spiritually while challenging students to reach their full potential. This institution envisions environmental stewardship as part of the Augustinian Mission. This stewardship motivated them to integrate environmentally sustainable courses into their curricula, including scholarly research, academic and community events, and institutional policy and practice. Chara Armon (one of the interviewees) is at the center of it.
11.3.3 Rodale Institute

The Rodale Institute's motto is "Healthy Soil + Healthy Food = Healthy People" (Kristiansen et al., 2006). This unique motto is the Rodale Institute's idea today; they put science behind their organizational motto. There is an underlying assertion at the Rodale Institute that if farming practices are focused on cultivating healthy soil, they will yield more nutritious foods, and ultimately, healthier people (Moyer et al., n.d.).

Location: The first Rodale site to experiment with Organic Agriculture was in Emmaus, Pennsylvania, before moving to the current headquarters in Kutztown, Pennsylvania.

The mission statement is to conduct rigorous research designed to help uncover the most effective, efficient, and regenerative farming practices shared with farmers and consumers worldwide and create nutrient-rich soil from contaminant-free land.

The core values of this non-profit farming Institute are to empower people to live their mission. The Farm is an inspiring destination; their research acts as a catalyst for change in FSs worldwide, which puts them in the position to be the clear voice for informed choice.

The four main pillars that summarize the relentless effort at the Rodale Institute in non-profit farming research on growing organic agriculture are as follows:

- To help farmers fight pests, diseases, and weeds without synthetic chemicals
- To guide farmers towards the transition from conventional to organic methods
- To mitigate and adapt to climate change with resilient farming systems
To contribute to solving food insecurity by encouraging the growth of nutrient-dense foods

These goal-driven objectives lead to a series of tests, laboratory and on-farm experiments such as:

- Farming Systems Trial
- Vegetable Systems Trial
- Watershed Impact Trial
- Experiments with industrial hemp
- Pastured Pork

11.3.4 PASA

PASA is America's largest state-wide member-based sustainable farming organization. It is located at Millheim, 16854, Pennsylvania. In 1992, this organization had over 260 members, providing a platform for farmers to exchange knowledge and establish a relationship with consumers to help them find local and sustainable agriculture products in Pennsylvania.

The mission statement is to enable a robust local economy. The mission is enabled through environmentally regenerative and community concentrated FSs and education and research, directly assisting farmers. Farmers improve their well-being through learning and adopting innovations either from one another or organizations. Moreover, PASA, all-year-round, coordinates workshops and events, administers formal farming apprenticeships and promotes research such as the Collaborative Regional Alliance for Farmers Training (CRAFT) that empowers farmers data value (Rippon-butler & Cook, n.d.). Their work fosters productive connections, good relationships, and collaborative interactions between farmers, community members, local businesses,
policymakers, and other stakeholders. Conducting annual sustainable agriculture conferences create awareness and allow for disseminating new sustainable agricultural practices and knowledge.

Currently, PASA’s apprenticeship programs include the Dairy Grazing Apprenticeship (DGA) program. This program was founded by Wisconsin dairy farmers in 2011 as the first formally accredited agricultural apprenticeship program. PASA created the Diversified Vegetable Apprenticeship (DVA) program recently approved by the Pennsylvania Department of Labor and Industry. PASA began partnering with DGA in 2016 to offer that program, which was followed by the DVA. Together, these programs are an incredible resource for young Pennsylvania farmers and a model for other states.

11.3.5 Laurel Valley Soils (LVS)
Chester County is viewed by many as the "mushroom capital of the world" Being the mushroom capital of the world simply means that a tremendous amount of mushroom production comes from this part of the nation. Because of the massive production of mushrooms, there was a severe by-product of used mushroom soil.

LVS is located within the mushroom production area. The idea behind this compost farm (LVS) was the concept of turning the mountains of used mushroom soil, packed with high nutrients, into a value-added product. LVS is located at 705 Penn Green Road, Avondale, 19311, Pennsylvania. LVS utilize 125 acres.

As a single location company, it is solely held and was established in 1979. LVS was formed from the concept of making used mushroom soil available to a broader audience in order to produce healthy food from healthy soil. The contamination of agricultural lands was a critical factor in the mission of LVS. Their mission is to
improve the quality of agricultural land by encouraging farmers to adopt the idea of applying their compost to help replant, rejuvenate, and remediate depleted soils. According to one of the participants, future growth goals are to correct the past behavior of conventional agriculture and turn unhealthy soils into healthy soils, leading to healthy foods (FAO, 2015a)

The products of LVS range from Premium Compost, Enriched Topsoil, Fresh Mushroom Soil, Turf-Dress, Horticultural Compost, Turf-Soil, Cyclone Compost, Aged Mushroom Compost Bio-Retention Soil, Rain Garden Soil Structural Soils, Container Media, Mulch, and Rooftite Green Roof Media and Custom Blends. Farmers within Southeast Pennsylvania, those who want to farm organically or those with depleted farmlands, source their antioxidant soils from this organization.

11.3.6 Proud Pennsylvania

Proud Pennsylvania is a state-wide initiative to connect rural and urban communities with a shared vision for regional economies passing wealth and power from distant corporations to build local community wealth through the localized production of basic needs.

The vision is to create a local self-reliant community. Proud Pennsylvania has proliferated into several non-profit programs such as White Dog Cafe (WDC), Sustainable Business Network, International Business Alliance for Local Living Economies. The WDC was founded in 1993 by Judy Wicks and located has three locations in Wayne, Haverford, and Philadelphia. This Cafe has a national reputation for community engagement, environmental stewardship, and responsible business practices.

Furthermore, WDC grew to become a local food movement leader, encouraging and supporting local and sustainable farming families by purchasing sustainably grown produce and organically raised
meat, poultry, and eggs. Moreover, WDC also performs unique attitude-related activities by paying a living wage, mentoring inner-city high school students, recycling, composting, using solar-heated hot water, eco-friendly soaps, eco-office supplies, and purchases 100% of their electricity from renewable sources. They are the first business in Pennsylvania to use these practices.

However, to spread this invaluable practice by WDC, Judy Wicks founded Fair Food in 2000, which now has numerous programs that connect local family farmers with the urban markets. Proud Pennsylvania's work has penetrated Chester County and beyond through awareness creation (on-air and through programs). It has also aided the increase in demand for organic products from Chester County farmers by urban dwellers.

11.3.7 Kimberton CSA

CSA is also one of the programs promoting OFSs in South-eastern Pennsylvania (Chester County). The Kimberton CSA was among the earliest local natural food movement groups. It is located at 415 W Seven Stars Rd, Phoenixville, PA 19460, United States, adjacent to Seven Stars Farm. This CSA was founded in 1987 after CSA was first introduced in 1986 (Cone & Kakaliouras, 1995). It is the first Bio-dynamic Organic CSA farm in Pennsylvania operating in ten-acre farmland.

The Kimberton CSA guides participating farms in attaining the highest ecologic potential and a network that will encourage and inspire other farms to become involved in CSA. Typically, farmers at Kimberton CSA use organic or Biodynamic farming methods and strive to supply fresh and high-quality foods to people who participate in the farming operation and beyond (Kimberton CSA 2019). The definition of biodynamics is, "A basic ecological principle of biodynamics is to conceive the Farm as an organism and a self-
contained entity. Several projects encourage members to work on the Farm in exchange for a portion of the membership costs."

According to IFOAM, CSAs are partnerships of mutual commitment between a farm and a community of supporters that directly correlates with agricultural products' production and consumption in the FSs. It is a social movement group that treats nature fairly, supports local food sources, and connects producers (farmers) and consumers (Ostrom, 2008).

According to the International Network of Community Supported Agriculture, a CSA is a direct relationship between consumers and farmers, which often contributes to a better FS. Based on these definitions, a CSA can take different forms, such as:

- Producer-Led (Subscription) Initiatives
- Community-Led (Co-Operative) Initiative
- Producer - Community Partnerships
- Community-Owned Farm Enterprises

Motivations to participate in the CSAs program differ depending upon the type of individuals involved and their passion for organic agriculture. Kimberton CSA is seen as a community-led initiative since the farming enterprise is owned by the community, taking direct responsibility for production. "CSA unites people who are passionate about farming with people who are passionate about healthy food, healthy families, and a healthy earth" (Perry & Franzblau, 2010).

11.3.8 Trellis for Tomorrow

Trellis for Tomorrow is a youth empowerment organization located at 30 Hall St. Suite 302 Phoenixville, PA 19460. Trellis for Tomorrow was founded in 2002 under the Triskeles Foundation. Triskeles
Foundation is a pioneering, local donor-advised fund that aligns with global sustainable development goals. The Exton-based organization provides philanthropic services. The development of youth and community-based programs grew to prominence in 2009, which led to establishing a separate non-profit organization from Triskeles Foundation known as Triskeles Inc.

Furthermore, over 17 years of rendering highly effective programs and services within the community, the organization's meaning and impact exceeded expectations. In 2018 the name "Trellis for Tomorrow" was born. The new name reflects the mission to support youth, communities, and the planet's sustainable upward growth. The organisational mission statement is "To create transformative, real-world opportunities for youth through teaching critical life skills, and promoting personal growth.

The sphere of youth empowerment has a firm basis in theory at both process and outcome levels" (Intergovernmental Panel on Climate Change, 2014).

The youth empowerment programs here involve individual, community, and organizational empowerment, encouraging the youth of all ages to participate in self-development programs to find sustainable solutions to today's current issues. The aim is to build a community of responsible citizens equipped to make choices that sustain themselves and a healthy environment. These aims are achieved through youth programs such as the Youth Seed Enterprise, Youth Environmental Stewardship, and the Tempus Conference. Young people from Chester County can be part of these inspiring programs from Trellis for Tomorrow.
11.3.9 Seven Stars Farm

In 1939, the idea and the name "Seven Stars" Farm was born. The Farm is situated at 419 W Seven Stars Road, Phoenixville, PA 19460. It is a biodynamic dairy farm in Northern Chester County.

This Farm has passed through several stages of development from earlier stewards "Mabel Pew Marin and her husband Alarik Marin" to modern and current stewards "the Dunphy family." In 1941, the biodynamic Farm and biodynamic training center came into existence. Biodynamic agriculture was started in Kimberton by Dr. Ehrenfried Pheiffer: The original Farm developed into Kimberton Hills Camphill Village and the Kimberton Waldorf School in the 1970s.

During the 1980s, CSA ideas were created and grown in the United States. At that time, the Kimberton CSA came into existence.

A small natural food store at the Farm slowly developed and eventually became Kimberton Whole Foods (KWFs). This Farm started to produce and sell yogurt in 1988. According to the Chester County Agricultural Development Council, the popularity and the quality of the yogurt are significant, and the products are available outside of Pennsylvania. In the mid-90s, the Kimberton Waldorf School's development rights changed ownership. They became the Chester County open space preservation program property, making Seven Stars Farm one of the early land preservation models in Chester County. "At first, you think you are just farming, but you are not. You are touching the lives of many, many people." This statement signifies what organic and biodynamic agriculture stand for.

The mission statement of Seven Stars Farm is summarized below:

- To study and implement the concepts and practically test the idea of biodynamics.
To produce high-quality food in an efficient and friendly manner.

11.3.10 Green Lion Bakery

This establishment is under the management of a social therapist and artisan baker known as Mark Doberenz. The business came into existence in 2004 and is located at Franklin Commons, 400 Franklin Ave., Suite 238, in Phoenixville, Pennsylvania. Though this is an organically run bakery, it is not yet a certified organic bakery. It fulfills many, if not all, the primary criteria for a certified organic bakery.

The bakery products are created and sourced from organically certified farmers and flour producers such as the Beiler Farm in Kinzer, PA. The raw inputs are sourced within the foodshed radii of 4-31 miles from the Bakery. The source of products aligns with the ecosystem sustainability criteria. The Bakery is developing rapidly and, in 2017, it started milling flour for production.

11.3.11 Spiral Path Farm

According to USDA organics, this Farm is certified organic since 1994. It is a first-generation farm with Mike and Terra Brownback, founded in 1978. It is located in south-central Pennsylvania, in scenic western Perry County, between the Tuscarora and Blue Mountain ranges, and has 300 acres of farmland.

A series of agricultural transformations have attracted attention from the USDA, and they have been granted an Organic Certified Farm label after 16 years of intensive farming. The Farm offers CSA and apprenticeship programs to next-generation farmers and is currently active in the CRAFT programs.
The Farm is also partners with the local Wegman's store branches. Future generations of farmers from Chester County, and other parts of Southeast Pennsylvania, attend farming mentoring lessons.

The mission statement focuses on a commitment to building the fertility of the soils, the Farm, and the surrounding woodlands' health by applying strict organic practices to produce fresh crops high in nutritional value to consumers.

11.3.12 Weavers Way Cooperative (WWC)

WWC is a food co-op established in 1973. The mission statement governs and runs a self-grocery, is a consumer-based organisation, and inculcates a community spirit for its members and the communities it serves.

WWC plays an essential role in the community and possesses the ability to perform governing functions in Mount Airy, Philadelphia, and beyond (Zitcer, 2015). The store's ability to perform tasks is due to a distinct and loyal customer base, creating a quality relationship with a unique set of retailers, enhancing a distinctive and cohesive identity within Mount Airy (Zitcer, 2015).

The Mt. Airy Co-op has significant importance in the community and has fostered a strong neighborhood identity by being socially progressive and racially diverse. WWC plays a governance role in the neighborhood. Since its establishment, it has undergone a series of development and transformation roles, including opening branches beyond Philadelphia in the Ambler and Montgomery Counties.

WWC's transformation stages include a transition from purchasing conventional products and moving to organic. WWC collaborates with schools and Food Moxie to make a culinary change in the community. WWC is linked to Chester County through collaboration with schools and the Pennsylvania Association of Sustainable
Agriculture. They continue to source natural organic products from Chester County.

11.3.13 Periwinkle Flower Farm

As the United States organic movement gains followers, individual efforts are gaining momentum. Periwinkle Flower Farm is no exception. They are located at 5854 Vera Cruz Road, Emmaus, PA 18049.

The Periwinkle Flower Farm is located in the Lehigh Valley, a few miles outside of Emmaus, Pennsylvania. The Farm was established in 2018 by a passionate and loving woman known as Michelle Kenstler. The operation is on two acres of land, rented from The Seed Farm in Lehigh Valley. The Periwinkle Flower Farm is a graduate of The Seed Farm.

The Seed Farm is an incubator farm that offers new and aspiring farmers the necessary training to enhance and build their products. They have lectures on crop planning, business planning, equipment uses, production techniques, and marketing. It also grants access to the land, tractors, and other necessary items to guide and support a beginning farmer.

The motivation and inspiration behind Periwinkle Flower Farm is a respect for nature, which enhances the push and commitment towards sustainable growing and design methods.

The mission statement supports the planet's biodiversity by growing flowers organically without any chemicals. This brings happiness and peace of mind to anyone who encounters these flowers.

Since this organic Farm is located outside Chester County, the established connection with Chester County is The Seed Farm in Lehigh Valley, which is open to everyone within Southeast Pennsylvania and beyond.
11.3.14 Pheasant Hill Farm

Under the tutelage of George and Melanie DeVault, Pheasant Hill Farm has contributed to the organic movement by making sure that the Farm will keep the organic spirit alive even when they are no longer around. These certified organic farmers are responsible for the production of Portch Tea since 1975.

The biological influence of organic motivates the second generation of young farmers joining the family farm and producing a different kind of tea for consumers. The brand supports such offerings as herbal and kombucha tea. This small organic Farm is located at 3502 Main St, East Emmaus, PA 18049. They aim to keep quality high.

This Farm is connected with Chester County through marketing and organic awareness activities. However, the farmers are life members, and George DeVault was a two-time executive director of PASA.

11.3.15 Camphill Village Kimberton Hills

Camphill Village Kimberton Hills is part of the International Camphill Movement. This non-profit organization is an intentional community, founded in 1972, with volunteers living and working together with adults with developmental disabilities. It is located on 432 acres, situated at 1601 Pughtown Road, Kimberton, in Chester County. Kimberton Hills is a healthy ecological living community.

The mission of Camphill is to maintain a land-based community where members support one another and contribute to society through biodynamic agriculture, handicrafts, and other ecological, social, cultural, and educational endeavors.

Members of the community support one another and this affects the broader society. This community is dedicated to sharing the values
of service, spiritual nourishment, and recognition of everyone's contribution. The sharing spirit has a significant effect on the Village, vocation, social, and cultural experience, which binds all the members together (Olsen, 2019).

Camphill Village Kimberton Hills has over 285 CSA shares, with 30 belonging to the Village. The rest belong to various community members, making it a highly diverse movement.

11.3.16 KWFs

In 1986, the epitome of the sustainable and organic farm store was established in Chester County, Pennsylvania, selling natural yogurt made on-site at a biodynamic dairy farm currently known as Seven Stars Farm. In 1987, the business expanded into a group of natural grocery stores. This development was significantly reflected in its commitment to local farming and the prioritization of organic and fair food.

KWFs limits their purchasing to a foodshed of 100 miles radii in the greater Philadelphia area and is now a multi-generational family business that continues to grow. They are regularly honored for their ethical business leadership and meaningful contribution to regional sustainable agriculture. The organic and biodynamic stores of KWFs are six in Pennsylvania (Kimberton, Douglassville, Downingtown, Ottsville, Malvern, and Collegeville).

KWFs demonstrates good leadership by taking significant environmental care, sustainability, and fighting climate change. In 2018, KWFs announced support for climate collaboration. Together with other natural grocers, food companies, and distributors, they are working to leverage the organic products industry and the power to reverse climate change through practices such as recyclable receipts, paper bags, and compostable produce bags.
In other to give back to the community and the environment, the KWFs is affiliated with the following local and regional associations such as the PASA, Non-GMO Project, Biodynamic Association, Cornucopia Institute, Rodale Institute, Greener Partners, Lundale Farm, The Camphill Association of North America, Trellis for Tomorrow, and The Pennsylvania Hemp Summit.
12. OCEANIA

Documentation of the Organic Food System Case in New Zealand: Wellington Region (Charity Iye Ibrahim)

12.1 Background information of the Wellington Region

12.1.1 Geographical Description

New Zealand is an island country in the south-west Pacific Ocean. It is located in the eastern part of Australia and closer to small island countries such as Fiji, New Caledonia, Tonga, Samoa, and Vanuatu (Ministry of the Environment, 2007; The Treasury, 2016). The country is divided into two landmasses, and the North and South Island is divided into 16 regions (ibid.). Eleven of these regions are administered by the regional council. In contrast, the remaining five are administered by a unitary authority (Territorial Authority) (New Zealand Parliament, 2013). The Wellington Region (also known as the Greater Wellington Region) is located in the North Island's southernmost area. The region is named after the country's capital city. It is made up of suburbs and districts such as Wellington (capital city), Porirua, Lower Hutt, Upper Hutt, Kapiti Coast District, and Masterton and Horowhenua (GWRC, 2007). The region covers 811,946 hectares of land (8,119km²).

New Zealand is a constitutional monarchy with a parliamentary government system, meaning that the head of state is a sovereign (currently Queen Elizabeth II) (New Zealand Parliament, 2013). The Queen is represented in New Zealand by the Governor-General whom she appoints. The country works as a unitary parliamentary democracy with a prime minister as the government's head (ibid.). The government works by having three separate branches, which
consist of the legislature (members of parliament), the executive (Ministers), and the judiciary (Judges and court) (ibid.).

Figure 12.1: Greater Wellington Regional Council
Source: Greater Wellington Regional Council, n.d.

12.1.2 Demographic Data

New Zealand is a small country with an estimated population of 4.7 million people (2018 census). However, according to Statistic New Zealand, the estimated population forecast has increased to 4.9 million people in the first quarter of 2020. The Wellington Region estimated resident population for 2019 is 527,800 (GWRC, 2007) compared to 506,814 from the 2018 census. The official language of New Zealand is English, Maori and New Zealand sign language, with English used the most. The five largest cities in New Zealand are Auckland, Wellington, Hamilton, Christchurch, and Tauranga, having most of the population in New Zealand. New Zealanders,
also known as kiwis, live mostly in urban areas, with the rest of the population living on small islands around the country. Research shows a high percentage (73%) of the population, about 30,000 or more, live in urban areas. As of June 2015, over half of all New Zealanders (53%) lived in the four main urban areas of Auckland (1,454,300), Hamilton (224,000), Wellington (398,300), and Christchurch (381,800) (The Treasury, 2016).

The majority of kiwis are of European descent, with Maori indigene being the largest minority, followed by Asian, Pacific Islander, and people from another ethnicity. In the 2018 census, the Wellington region recorded European (74.6%), Maori (14.3%), Pacific Islander (8.4%), Asian (12.9%), Middle Eastern/Latin American/African (1.9%), and other ethnicities (1.4%). Furthermore, 18.5% of the Wellington region population were aged between 0-14, 35.2% are aged between 15-39, 32% were aged between 40-64, and 14.3% were aged 65 and over (GWRC, 2007). The population of the Wellington region from 2006 to 2018 by territorial authority is depicted in Table 12.1.

Table 12.1: Population of the Wellington Region by Territorial Authority

<table>
<thead>
<tr>
<th>Territorial Authority</th>
<th>Population Count</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2006</td>
</tr>
<tr>
<td>Tararua District (Part)</td>
<td>17,535</td>
</tr>
<tr>
<td>Horowhenua District</td>
<td>29,646</td>
</tr>
<tr>
<td>Kapiti Coast District</td>
<td>46,458</td>
</tr>
<tr>
<td>Porirua City</td>
<td>48,672</td>
</tr>
<tr>
<td>Upper Hutt City</td>
<td>38,916</td>
</tr>
<tr>
<td>Region</td>
<td>2017</td>
</tr>
<tr>
<td>----------------------------</td>
<td>----------</td>
</tr>
<tr>
<td>Lower Hutt City</td>
<td>97,839</td>
</tr>
<tr>
<td>Wellington City</td>
<td>185,187</td>
</tr>
<tr>
<td>Masterton District</td>
<td>23,271</td>
</tr>
<tr>
<td>Carterton District</td>
<td>7,191</td>
</tr>
<tr>
<td>South Wairarapa District</td>
<td>9,006</td>
</tr>
</tbody>
</table>

Source: Stats NZ, 2019.

### 12.1.3 Economy

New Zealand operates with free-market principles, and the economy is small and open (New Zealand Immigration, 2020). It has a sizeable manufacturing sector and a large services sector, accompanying the highly efficient export-oriented agricultural sector (ibid.). Primary commodities account for more than half of the total goods exported, while exports of goods and services represent around one-third of the GDP’s real expenditure (The Treasury, 2016).

The agricultural, horticultural, forestry, mining, and fishing industries play an essential role in New Zealand's economy, particularly in the export sector. Thus, this sector directly accounted for around 6% of the real GDP and contributed to over half of New Zealand's total export earnings in 2015 (Ministry of Primary Industries, 2019; The Treasury, 2016). Agriculture directly accounts for 4% of GDP, while the processing of food, beverage, and tobacco products accounts for a further 4% (ibid.). However, the primary industries' GDP share reduced from 8.6 percent to 6.8 percent between 2014 and 2019. Activities such as transportation, financing, and retail-related to agriculture also add to the GDP. Dairy farming is the predominant agricultural activity, followed by beef and sheep farming and horticulture (ibid.).
The manufacturing industries in New Zealand make essential contributions to the national economy. At the end of 2015, the manufacturing sector output accounted for 10% of real GDP (The Treasury, 2016). The proportion of the labor force employed in manufacturing is around 11%. Primary sector processing (food and forestry) make up a substantial amount of the sector. The food manufacturing industry produces high-quality products for both the domestic and export markets. Over $43.8 billion was made from this industry in 2015, including $28.8 billion from meat and dairy products (ibid.). New Zealand's service industries, which collectively account for around two-thirds of GDP in 2015, are relatively broad-based across a wide range of activities (ibid.). The most extensive contributions to overall services activity are from retail and wholesale trade (18% of services GDP), rental and real-estate services (18%), and professional and administrative services (15%) (ibid.). Other significant service activities include education, health, information technology, financial services, and postal services, transportation, and warehousing (Stats New Zealand, 2020). Tourism is one of the largest sources of foreign-exchange revenue in New Zealand. In 2015, international tourist expenditure in New Zealand amounted to $11.6 billion, an increase of 17.1% from 2014 (The Treasury, 2016). The total visitor arrivals for 2015 added up to 3,059,449, which is an increase of 8.6% over the previous year. In 2019, the number of short-term visitor arrivals reached 3.9 million.

Regional GDP is a geographic breakdown of national-level GDP, which is New Zealand's official economic activity measure (Stats NZ, 2020). Regional GDP measures New Zealand's 15 regions' economic activity and shows which industries contribute to their GDP (Figure 12.2) (ibid.)
In Wellington, the 2014–19 increase drivers were professional, scientific, technical services, public administration, defense, and safety services. These are Wellington’s most extensive, and the second-largest, and fourth-largest industries, respectively, and these industries made up 32.2% of the region’s GDP in 2018. Wellington’s GDP in 2018 increased 5.3%, while in 2019, Wellington’s GDP increased 4.4%, driven by health care and social assistance; public administration, defense, and safety, and owner-occupied property operation (ibid.). Wellington’s GDP per capita reached $74,251 in 2019, which was the highest of all regions (Figure 12.3) (ibid.).
12.1.4 Agricultural History

By the early 19th century, the Maori (largest minority) had already become successful in grain farming from their traditional but well-established gardening skill, and wheat farming and production were the economy's critical engines (Bloomfield, 1984). However, with the advent of organized European settlements, pastoral farming began at a larger scale, with wool outstripping wheat as a primary product between 1845 and 1882. Wool was an ideal commodity. It could be stored and shipped to areas of strong demand for the expanding textile industries, but this resulted in a dramatic ecological modification of the country's landscape, and new regions were opened (McLintock, 1966). After the successful shipment of refrigerated meat from New Zealand to London in 1882, refrigeration's potentials revolutionized New Zealand (ibid.). Subsequently, through the department of agriculture, the government began to institute rigorous measures and financial assistance under the advances to settlers' scheme (McLauchlan, 2006). The Liberal government acquired Maori land and made it
available to European settlers. During this period, 68% of frozen lamb was produced in the South Island while mutton was from the North Island.

Moreover, refrigeration and dairy cooperatives' formation further supported the emergence of dairy farming. Consequently, dairy products such as cheese and butter became valuable exports from New Zealand (Bloomfield, 1984; McLintock, 1966). Nevertheless, during this massive agricultural development progress, indicators of declining productivity and soil fertility emerged, and there were skirmishes between proponents of agricultural production and conservationists (Cumberland, 1981).

In 1926, the government established the Department of Scientific and Industrial Research, which was later divided in 1992 into several crown research institutes, including AgResearch, Plant and Food Research, and Land Care Research (McLauchlan, 2006). These institutes assumed the frontal role of improving productivity and tackling farming's environmental consequences (ibid.). These efforts paid off with new ideas such as grassland farming on a large scale, livestock breed improvement, and diversification. Horticulture and viticulture experienced considerable growth with the kiwifruit industry's emergence and increases in wine production (ibid.). In the last few decades, the New Zealand agricultural sector's direction has been expanding the export markets and opening new markets, especially in Asia (McLauchlan, 2006). Presently, China is the highest consumer of New Zealand primary industry products (OANZ, 2018).

12.1.5 Food Environment

The food environment in New Zealand, especially for children, is mostly unhealthy. Policy implementation is low, with New Zealand being the third-highest rate of overweight and obese adults and
children within Organization for Economic Co-operation and Development (OECD) countries (OECD, 2017). This information was found in a study conducted by INFORMAS (International Network for Food and Obesity/NCFs Research, Monitoring and Action Support). The result revealed that having fast food outlets close to schools and other places children frequent increases their chances of becoming overweight and developing poor eating habits. Also, teenagers whose schools are within 160 meters of a fast food outlet are more likely to be obese than those whose schools are further away (Vandevijvere et al., 2018). Previous research by the New Zealand Health Survey (2011/2012) also found that 28% of adults are obese, and the figures increase for children (Ministry of Health, 2012).

In New Zealand, people from high deprivation areas purchase more takeaway food than people from lower deprivation areas (Bay of Plenty District Health Board, 2013). One of the reasons for this could be the higher density of fast-food outlets in higher deprivation areas (ibid.). The studies also show a correlation between food consumption and drink from fast food outlets and a greater likelihood of obesity. The mix of shops in deprived areas tends to be weighted towards fast food outlets, making it harder to access healthy food, particularly fresh produce (ibid.). However, there is a suggestion that the local government restricts the number of fast-food outlets per population by creating a cap for fast food outlets. Also, policy interventions limiting the proximity of fast-food outlets to schools could reduce adolescent obesity (ibid.).

The 2008 National Adult Nutrition Survey interviewed 4721 New Zealanders to understand their food security issues. The result shows that 59.1% of households were classified as full/almost food secure, 33.7% were classified as moderately food secure, and 7.3% were classified as having low food security. Furthermore, Maori and the Pacific Island communities were found to have higher food security.
insecurity rates (University of Otago & Ministry of Health, 2011). In another study on household food insecurity among children in New Zealand, conducted between 2012-2016, it was discovered that in 2015/16, almost one in five children (19.0%) lived in severe to moderate food-insecure households (Ministry of Health, 2019). The report highlights that specific subgroups of children are more likely to live in food-insecure households. Socioeconomic factors (household income in particular) and ethnicity played an essential role in many of these group differences (ibid.).

Access to food in New Zealand for vulnerable groups is tackled with food relief and cost-saving strategies that target these groups (such as Maori and Pacific Peoples, and those with a low income) (Bay of Plenty District Health Board, 2013). These strategies help build the community's resilience to respond to and overcome future food security challenges (ibid.). These community council strategies include; community gardens, farmer's market, community kitchen, green spaces, urban edible gardens, and community skill-building. Some communities have gone further and have places marked on Google Maps where community members can share where free produce plants can be accessed and when they should be in season to be collected. This information can be found on the council's website (ibid.).

12.1.6 Food Consumption Pattern

An average of 26% of New Zealanders spends more on restaurant meals and takeaway food and less on grocery items (Stats NZ, 2017). People living in the Wellington region spend the highest proportion of their food budget on restaurant and ready-to-eat food (29%), followed by people in the Auckland region (28%), the South Islanders, excluding Canterbury, spend the least on restaurant and ready-to-eat food (22%) (ibid.).
Several factors, such as social, cultural, and economic factors, influence individual or population food consumption choices, and these food consumption patterns have been reported to change over time (Kuhnlein, 1989). The increasing awareness of health, wellbeing, and the environment has tremendously impacted the food consumption pattern in New Zealand and other developed countries. In New Zealand, the governmental guidelines on healthy eating for a New Zealand adult consist of predominantly carbohydrates such as fruit, vegetables, and whole grains, some protein such as lean meats, nuts and seeds, and low-fat or reduced-fat dairy product. It is also important to limit saturated fats from predominantly animal origin. Additionally, the guideline recommends limiting the intake of added salt and sugars (Ministry of Health, 2015). Due to the emphasis on what constitutes a healthy diet, monitoring the population's nutrition in New Zealand has been limited to whether these recommendations are being followed or not (ibid.).

12.1.7 The Organic Sector in New Zealand

Organic agriculture and food production in New Zealand have advanced since the mid-1980s. Factors such as market demand for organic products, opposition to genetic engineering, food safety concerns, climate change, and other environmental and sustainability issues are now essential drivers for growth in organics in New Zealand (IFOAM, 2010). The total area of land that is organically cultivated in New Zealand is 88,871 hectares (OANZ, 2018). It is estimated that the New Zealand organic sector's total size in 2017 is valued at NZ$606 million compared to NZ$467 million in 2015 (ibid.). Out of the NZ$600 million, NZ$355 million is from the export market, and NZ$245 million is from the domestic market (ibid.). The organic export market for New Zealand includes North America (26%), Europe (27%), Australia (16%), Japan (7%), China (10%), other South-East Asian countries (8%), and other
markets (5%) (IFOAM, 2010; OANZ, 2018). New Zealand's main organic products are apples, kiwifruit, blueberries, fresh and processed vegetables, dairy, meat, wool, viticulture, and aquaculture (IFOAM, 2010).

New Zealand is one of the world's exporting countries that does not have national standards to define 'organic.' Nevertheless, it is hoped that this will change with an established mandatory national standard (Organic Act) currently under discussion with the government (IFOAM, 2010). In November 2003, a New Zealand standard for organic production was released, but it is voluntary, hence the mandatory national standard bill. Certifiers in New Zealand involved in TPC include BioGro NZ, AsureQuality, Demeter, and Organic Farm NZ (for Small domestic market participants) (IFOAM, 2010; OANZ, 2016, 2018).

12.1.8 Organic Certification
Organic certification in organic agriculture cannot be overemphasized as it is a critical factor in the marketing of organic products, making certification central for organic farmers. Organic certification protects producers, consumers, and sellers from deception and thus creates confidence in organic production integrity (Herberg, 2007). Over the years, different certification systems have been established; the TPC, PGS, and the Group Certification (IFOAM, 2003, 2004, 2006b). Presently, the predominant certification system in developed countries is TPC. In contrast, the PGS and the group certification are meant for the small-scale farmer whose turnover cannot afford a TPC (Kalus, 2004). While the latter was meant for the developing countries, it is now partly transferred back to developed countries with small-scale farmers under pressure by consumers and retailers to certify their products. In this case, they cannot afford the expensive certification scheme (Herberg, 2007). This study focuses more on the TPC and
the PGS, and key actors connected with one of the two systems. Table 12.2 shows the differences between the certification systems.

Table 12.2: Differences between the Certification Systems

<table>
<thead>
<tr>
<th>TPC</th>
<th>PGS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Audited by an external professional inspector</td>
<td>Audited by farmers in peer reviews (plus external control component in some cases)</td>
</tr>
<tr>
<td>Acknowledged for export markets</td>
<td>Only acknowledged for local markets</td>
</tr>
<tr>
<td>Marketing individually</td>
<td>Marketing individually</td>
</tr>
<tr>
<td>Certification held individually</td>
<td>Certification held individually</td>
</tr>
<tr>
<td>No advice allowed through certification</td>
<td>Advice and certification can be combined to some extent</td>
</tr>
</tbody>
</table>

Source: Adapted from Herberg, 2007.

In New Zealand, an organic certification system was not established until the early 1980s, after which the only certification system present was the biodynamic 'Demeter' and the BioGro NZ (Saunders et al., 1997). During the 1990s, New Zealand saw an increase in farmers' interest in organic certification due to the commencement of large-scale organic exporting. Most new farmers were conventional farmers with little knowledge of organic farming, which led to a more intense inspection system by the certification organizations. A fee system for inspection was introduced (Liepens & Campbell, 1998). Furthermore, the period after that saw a decrease in small-scale farmers due to their inability to afford organic certification as export markets' requirements drove the certification requirements. The certification fee increased significantly (Liepens & Campbell, 1998; May 2002; Saunders et al., 1997). In 2002, a new certification system was established for small-scale farmers called OrganicFarmNZ (OFNZ), which offers PGS as
classified by IFOAM for the domestic market at a reduced cost (Liepens & Campbell, 1998).

The New Zealand organic certification is progressing, and there are now different certification systems to support existing production (Herberg, 2007). According to the organic research carried out by Organic Aotearoa New Zealand, the total number of certified organic operations in New Zealand has increased to 1,118 licensees and 1,672 certified enterprises. Some of the certification schemes in New Zealand are:

- The Demeter label, which was registered by the Biodynamic Farming and Gardening Association in 1984 and which certifies producers to Biodynamic standards
- The BioGro label, which was established in 1983 by the New Zealand Biological Producers Council
- The AsureQuality organics mark which was introduced in 2001
- OFNZ which was established in 2002
- Te Waka Kai Ora (Maori organic certification) (NZFSA, 2008)

The present study focuses on BioGro and the OrganicFarm New Zealand certification as key actors in this study.

12.1.8.1 BioGro

BioGro is the largest certification body in New Zealand, with over 830 certified organic producers, farmers, and manufacturers across New Zealand and the Pacific. It was established in 1983, and it is operated as a non-profit organization. Its activities include; the setting of organic production standards, certification of BioGro Licensees and Licence Applicants, the promotion of organics, and the support of organic research and education. BioGro helps
producers meet international organic regulations in key export markets, including Europe, Canada, the US, and parts of Asia, due to its IFOAM accredited standard (ISO 17020/EN 45004).

12.1.8.2 OFNZ

OFNZ was established in 2002 by the SHA in response to the high cost of organic certification (OFNZ, 2014). It is a not-for-profit organization designed for small-scale farmers and processors. The goal of the OFNZ is "to increase the community's understanding of organic principles, and the practice of organic gardening and farming in New Zealand" (OFNZ, 2014). This certification system is mainly for producers' supplying the New Zealand market. The certification process's income is used to support, educate, and encourage more people to adopt organic principles in horticulture and farming (OFNZ, 2014). It currently has over 130 producers in 12 regions across New Zealand. OFNZ has a National Coordinating Committee (NCC) whose function is to provide direction and governance to the organization (OFNZ, 2014).

12.2 Overview of the OFS Case in New Zealand: Wellington Region

The overview of the OFS case in the Wellington region is based on the analyzed literature and the informant interview carried out on November 6th and 21st, 2019. The informant is the current certification manager of the OFNZ southwest region of the North Island of New Zealand.

OFNZ is a non-profit organization that aims at increasing the community's understanding of organic principles and the practice of organic gardening and farming in New Zealand (OFNZ, 2014). The organization is funded mainly by volunteers and membership dues. As of 2019, the organization's membership dues are between $300-400 annually. The majority of these funds are applied toward
auditors' payment and other official expenses carried out by the organization.

The organization is set up to run through its regional bodies across the country. The regions' primary purpose is to provide education about organic farming and coordinate the OFNZ certification (OFNZ, 2014). The OFNZ has a national committee NCC, and the committee members are elected to represent each of the regional bodies in 12 regions. The role of the NCC is to provide governance and direction to the organization. OFNZ consists of 12 regional bodies in New Zealand: Far North, Central Northland, Auckland, Coromandel, Waikato, Bay of Plenty, Taranaki and Whanganui, Hawkes Bay, Wairarapa, Canterbury – Nelson Bays, South-West North Island, Otago, and Southland. The association also consists of different working groups focusing on quality management, technical issues, and certification (certification managers and auditors).

The southwest regional body of OFNZ started three years ago. It represents OFNZ members in the region of Wellington, Kapiti, Horowhenua, and Manawatu. The reason for establishing the southwest region of the OFNZ was the difficulty/challenge for members in the same pod system to connect and support each other due to the distance from the southwest region to the Wairarapa region. They currently have 21-22 members, with some under conversion. The OFNZ runs a formal certification system, the PGS, for its members based on pods. Therefore, every grower is audited each year by their pod members, and every grower is in a pod of three to five members. Subsequently, everyone in the pod will go to each grower in their pod to audit him/her, but once at least every three years, an external auditor audits every member of that pod. The external auditors are members of OFNZ from other regions in New Zealand. Regular field days are held to help share information, educate, and give support to the members.
The members of the southwest region are involved in growing many vegetables and different types of fruit such as olives, strawberries, blueberries, peaches, different varieties of citrus, different varieties of apples, avocados, plums, stone fruit, apricots, different types of peas, and grapefruit as well as free-range eggs and livestock rearing. The members are growers and market gardeners, orchardists, processors, and consumers as well. Some members sell directly to the consumer while others process their primary produce into different products like olive oil, jams, spreads, bread, tomato sauce, honey, and seeds.

The only organic retail store in the Wellington region, where OFNZ and other organic growers can sell and showcase their products, is certified by a TPC company called BioGro. Commonsense Organic has five store outlets in the Wellington region, which support organic producers around the region. The members of OFNZ distribute their produce/products directly to their customers or through courier services around New Zealand because the growers are relatively small and cannot afford distributors.

Access to supermarkets in New Zealand is still a big challenge for the members of OFNZ in the Wellington region. Supermarkets require suppliers to be certified by the New Zealand GAP that meets the Food Act 2014 (food safety). This step will cost more and require the members of OFNZ to meet the health and safety requirements of the Food Act 2014. OFNZ is negotiating the Food Act terms that require they become certifiers of their members to meet the Food Act 2014. Still to come into force is the New Zealand national standard on organic (Organic Act), which will be another hurdle for the organization to cross because of verification and auditing costs.
12.3 Organizations Involved

The Ministry of Primary Industries (MPI) is a public service department that is responsible for managing, overseeing, and regulating the farming, fisheries, food safety, forestry, and pest and disease control (biosecurity) in New Zealand (Ministry of Primary Industries, 2019). In 2018, the MPI formed four business units: New Zealand Food Safety, Biosecurity New Zealand, Fisheries New Zealand, and Te Uru Rākau (Forestry New Zealand). Later in 2019, Agriculture and Investment services were added as the fifth business unit of MPI (ibid.). The Ministry oversees the policy, standards, and requirements for organic agriculture in New Zealand (both import and export). In New Zealand, they are many organizations that support and promote organic agriculture. They include:

- AsuredQuality
- The Bio-Dynamic Farming and Gardening Association
- BioGro New Zealand Ltd
- International Accreditation New Zealand
- Joint Accreditation System of Australia & New Zealand (JAS-ANZ)
- OFNZ
- Organic Exporters Association of New Zealand
- Organic Wine Growers New Zealand
- Organic Avocado Growers Incorporated (NZAOG)
- Soil & Health Association of New Zealand
- Organics Aotearoa New Zealand
- Organic Kiwifruit Growers Association
- Horticulture New Zealand
13.1 Background Information of Quito, Ecuador

13.1.1 Geographical Description

Quito Metropolitan District (QMD) is the capital of Ecuador, situated in Pichincha Province. The city is located between the Andes Mountains and the Volcano Guagua Pichincha, which has a height of 4,790 meters. The Quito region has an area of 9,536 km², distributed in urban areas (16%) and rural areas (84%). The province is above the Hoya de Guayllabamba, which is a region of canyons. The city has a height of 2,908 m above sea level, and its surface covers 4,218 km². It is made up of 32 urban parishes and 33 rural parishes. The urban parishes represent 8.8% of the surface cover. Quito is in the equatorial temperature zone with 75% humidity and an average temperature of 14 °C with rainfall distributed all over the year. It has two seasons, the dry season from June to September and the rainy season from October to May (Alcaldía de Quito, 2019).

13.1.2 Demographic Information

According to INEC (2013), Quito has 2.6 million inhabitants and a population density of 8,303 hab./km². Pichincha is the second province and has a larger population with approximately 3 million inhabitants, and 68% of them live in urban areas. QMD has around 2.6 million inhabitants, with 64% living in urban areas. The distribution by sex is relatively uniform, with 51% of women and 49% men, for Pichincha as for QMD. Considering the natality, mortality,
and migration, it is probable that Quito will grow in population and supersedes Guayaquil as the most populous city.

According to Alexandra Rodríguez (personal communication, March 25, 2019), 72% of the Quito population is concentrated in urban areas, 37% are in poverty and extreme poverty, and 29% of the children are not receiving adequate nutrition. Ecuador's capital has a rate of 29% for child malnutrition, while the most vulnerable sectors reach 46%. Large amounts of food are wasted.

It is essential to clarify the pressure of urban sprawl on agricultural production and its aggravating soil use. There is an internal and external migration taking central stage. In QMD, 84% of the migrant population is internal. A devaluation of work and higher income search is the leading cause. The migration has caused a loss of agricultural employment, which decreases the capability to supply food to the growing population. Simultaneously, the external migration has a daily flow of 5,000 people, of which 20% are located in the Quito region (Alcaldía de Quito, 2019).

13.1.3 Socioeconomic Characterization and Policy

Ecuador is a vital petroleum exporter in Latin America with other vital exports, including cacao, banana, and shrimp. At the beginning of 1994, Ecuador entered into an economic crisis due to bad management of the credit granted to companies. According to Alberto Acosta, an influential Ecuadorian economist, the crisis also happened because of the global petroleum crisis and the decrease in petroleum price in 1998. Only 30% of the banks survived at the end of the decade. (Moreno Brieva & Peñaherrena Patiño, 2018)

At the beginning of the 2000s, Jamil Mahuad, the president, decided to use the dollar as their currency. He wanted to decrease the crisis and stabilize the country. In the beginning, there was a considerable
loss of money; Ecuador was viewed as a country without stability until 2007 when Rafael Correa was elected president.

According to the poverty index, there has been a decrease in poverty since 2003, from 49.9% to 22.5% in 2014 (Moreno Brieva & Peñaherrena Patiño, 2018).

According to Moreno Brieva and Peñaherrena Patiño (2018), Ecuador has excellent potential to increase its productivity. In 2014, the government created a project where minerals like gold, silver, and copper are extracted by several international companies, creating employment and income for the population. For a few years, tourism was a priority, increasing by 67.25% between 2010 and 2014 and providing a significant income source for Ecuador. It is also necessary for a country to improve its science and technology. It is not enough to export bananas and coffee, which Ecuador has done while neglecting productivity and decreasing life quality.

According to the National Employment, Unemployment, and Sub-employment Survey 2018 (INEGI, 2018), poverty by income decreased between December 2007 and December 2017 for QMD and Quito region, from 18.9% down to 9.6%. In addition to poverty, living conditions and average education levels are essential factors for assessing human capital and access to food. In the Quito region, adequate employment represents 61.8% of the total employment, while sub-employment is 12.2%. According to UNESCO, people attend school until they are 24 years old, which is the same as the international standard. Besides poverty, other conditions like labor and education are essential factors related to food access (Alcaldía de Quito, 2019).
13.1.5 Agricultural History

As Ecuador's capital and as a city, Quito has participated in urban agriculture since 1980. When migrants from the Andean mountains began to establish themselves in the city, they started urban gardens to feed their families. On El Panecillo, a community hill in Quito, a pilot program of home gardens supported by the municipality was started. This project promotes sustainability by reusing organic waste and recycling. This was a base to start more projects, promote participation, care for Quito's vulnerable population, and ensure food security. In 2002, Proyecto de Agricultura Urbana Participativa (AGRUPAR) started to support Quito's urban gardens. Since 2005 the municipality of Economic Development, ConQuito, worked with the city to become a sustainable and innovative employment source supporting farmers (FAO, 2015b).

13.1.6 Food Environment

The Quito region is defined by three rings that surround the city and foster interaction between the FS actors. The first ring consists of Quito's urban and peri-urban areas, which have many rural villages. The second ring is the Pichincha Province, and the third ring is the twelve regions that play an essential role in the FS (RUAF, 2018).

The ecosystem diversity in the region makes it suitable for many different kinds of crops. Among the essential products grown in the Pichincha region is corn, sugar cane, wheat, barley, and various fruits. Livestock production is an important sector in the northwest, with pork and poultry production at about 7.5 million tons per year. The Pichincha province can provide 36% of its food to the area of Quito. The city itself provides 26% of the food, and the remaining share comes from other provinces or is imported from other countries (Alcaldía de Quito, 2019).
13.1.7 Food Consumption Patterns

According to RUAF (2018), there is an increase in carbonated drinks and beer in Quito. People are consuming 20% more carbohydrates and 50% fewer proteins. They estimate that the obesity range in Quito is about 63% due to 71% of the population eating their meals out of the home.

The rural population of Ecuador usually maintains a vegetarian diet due to the lack of animal protein. In one week, a family in the central Andes eat potatoes, white rice, cornflour, white flour, green pea flour, milk, plantains, oranges, lemons, brown sugar, and oil, which is a primary food found in the markets near their village.

A study made by ‘Economic Commission for Latin America and the Caribbean’ and ‘World Food Programme’ describes the dimension of the double burden of malnutrition and obesity in several countries of Latin America, including Ecuador. The study states that the country spends more than four million dollars per year dealing with malnutrition-related diseases, including obesity and chronic disease. This is why the food policy has begun to take as healthy food and sustainable production seriously (Borja et al., 2018).

13.1.8 Organic Sector in Quito

Ecuador has agricultural laws that stipulate the laws for organic production in Quito. The Ministry of Agriculture has a Phyto and Zoo Sanitary Regulation group, known as Agro-quality, with a special department for organic food products. The department's goal is to guarantee the integrity of organic agricultural products, and the internal and external markets, through the control, evaluation, and certification of products, inputs, and organic actors. The organic department has two main control points: control of products and organic actors and management of input evaluation for agricultural
organic production (Gobierno de la Republica del Ecuador Direccione de Organicos).

To provide tools for the consumer that allows them to identify organic products, Agro-quality launched the official logo (Figure 13.1) for organic products in March 2019. All producers, processors, and marketers must present and advertise the products with this logo to comply with Ecuadorian Organic Production.

AGRUPAR is a certification body. They supervise farmers and their gardens to guarantee organic methods are followed.

Figure 13.1: Organic Logo of Ecuador
Source: CIAO, 2019.

13.2 Description of Urban Gardens in Quito

Quito was the first to embrace urban agriculture in a meeting of local government representatives from nine Latin American countries and the Caribbean that they hosted. Over the past fourteen years, urban agriculture has changed. Between 1980 and 2000, the Andean indigenous doubled their population and built inner-city barrios and settlements. They resorted to small scale agriculture to have food for their families. At that time, urban agriculture was not a regulator or considered by any program. (FAO, 2015b)

In recent years, the configuration of agrarian space in the Quito region has changed because of urban sprawl and inadequate land
use. The most significant growth happened in 1970. Quito attracts settlers from other parts of the country and other countries that need food and resources. Most affected are fruit and vegetable production found in the valleys of Tumbaco and Chillos, which are the areas with more urban growth. (Alcaldía de Quito, 2019)

The urban garden project began in 2000 with a pilot project in El Panecillo, a mountain inside Quito City. After seeing good results, AGRUPAR was created in 2002. It was not until 2005 that the municipality ConQuito established a relationship with AGRUPAR and agreed to work together. In 2014 Quito was named in the top 10 greenest cities of Latin America and the Caribbean by the FAO. The project adhered to the Milan Urban Food Policy Pact and had a special mention. Two years ago, AGRUPAR worked together with Resource Centres on Urban Agriculture and Food (RUAF) and FAO and their vision of City Region FSs to build sustainable and resilient cities (AGRUPAR, 2018).

AGRUPAR provides the seeds to a single person in a family or a group in a community. The participants need to have enough space for the crops and access to clean water. Also, being part of the project provides access to continuous capacitation plus nutritional and commercialization knowledge. (Alexandra Rodríguez, personal communication, March 25, 2019) The program promotes organic and sustainable farming methods, prohibits using GMO's, encourages holistic systems, brings wealth to the soil, favors biodiversity, and takes care of the earth's biological cycles. AGRUPAR is registered as an organic producer and marketer of organic products, sharing the certification with all the farmers (FAO, 2015b).

According to the engineer Alexandra Rodríguez, who is responsible for the project AGRUPAR since 2005, AGRUPAR is a permanent program with a fixed budget within the Quito Municipality's economic
axis. The principal objective is to provide food security to the population, especially those who are vulnerable. The program provides sovereignty through food production in urban gardens. It also seeks to democratize the consumption of healthy food. Each case is different; whether it is a community, family, or institutional garden, it is essential to enhance food availability. For them, urban agriculture is the path to many other things. AGRUPAR, as part of the economic axis, does not mean a limitation of working with other approaches such as environmental, social inclusion, education, or citizen participation.

With more than 1400 gardens in and around the region, 53 are already certified organic, and more are on the path to organic certification, AGRUPAR has a big responsibility. To reach more people and create job opportunities for the farmers, they created Bio fairs. These are small markets all along with the City of Quito, where farmers who are part of the project can sell their fresh products every Saturday. The most common crops are tomatoes, pepper, carrot, kale, radish, beetroot, and different kinds of lettuce.

For Alexandra, the principal values that drive the program are honesty and transparency, and the promotion of healthy food consumption. It is essential to encourage farmers during production. Agroecology principles and philosophy are a way of life. It is constant construction and evolution conveyed to the consumer, ensuring a healthy product and process through the principles of AGRUPAR.

Alexandra has the responsibility of the program, and Alexandra is continually growing it. She has added commercialization projects, access to microcredit for the farmers, organic accreditation for the farms, and an internal control system. It is a case study for others, and this allows the program to be internationally known, raising urban agriculture beyond being a garden. The project involves many
people and makes visible the auto production of food, demonstrating an improved way of living and a higher quality of life. Alexandra is motivated by the growth of the program. Since Alexandra was a student, her principal motivation was the agroecological agriculture movement. She first worked in big scale exportation. When Alexandra changed her focus to urban gardens, the motivation was not the economy or power. The focus was to improve the City and, with that, the quality of life for vulnerable populations.

AGRUPAR faces challenges from the formal Sustainable and Resilient FS for the City of Quito. The City has a broader view of the FS's strengths and flaws and how they should connect with other areas like health care, schools, and environmental institutions. The City has enabled municipal and national authorities to take up the program. For them, having access to the Milan Urban Food Policy Pact in 2016 and the diagnostics from the Quito FS was a big success. Based on 37 voluntary actions, the City was able to manage food resources and residuals between others.

The organic guarantee held by AGRUPAR began in 2007. Every year, an auditor from the National Control Authority for Agro-Quality controls the Certification Agency and provides an internal control for land analysis. In Ecuador, if a farmer wants to farm organic, they need at least 7500m². Some farmers prepared and became organic. In the beginning, the project assumed the entire cost of the transformation, and it began to work with farmers to formalize the organic process. Organic certification is not compulsory for farmers to participate in the project, and the control system is the same for all. The project has excellent value, and more and more farmers want to hold the certification, opening avenues opportunities for commercialization.
The community has changed and is more conscious about food consumption, more aware of the source of their food and how food is made, and differentiate if a product is mature. Awareness about the environment and natural resources, as well as land management and preservation, increased. The people now view the land as something to protect. They have learned how to separate garbage, recycle, create compost, produce healthy food, and provide sustainable services. They are inspiring others to follow in their footsteps.

AGRUPAR faces some challenges. Urban agriculture is not mentioned in the Organic Law of Food Sovereignty, where organic production, sustainability, and agroecological agriculture, are discussed. Another challenge is that there are significant elections every five years, and with that comes a new municipal administration. The program does not have an ordinance to promote it. The program is a proposal that maintains farmer empowerment. Responsible production and consumption are essential topics, and the cities play an essential role since this is where most of the population lives; Quito has 72% of the urban population.

As a country, rural production is well known. After petroleum come bananas, chocolate, and shrimp. Making the government aware of the need for food sovereignty in the City is a big challenge. The city population includes people without jobs and refugees, and these are the people without food.

Competing with technology projects is also a challenge. It is essential to help the authorities understand the magnitude of problems like malnutrition, unemployment, and obesity. There needs to be an understanding that Quito has urban and rural areas and the rural areas can have increased food production not only for exportation but also for the populations' consumption. Understanding where cattle raising or residences are not allowed,
when talking about planning and land use, helps plan what will happen with the current way of life and food production.

In the education sector, all the schools of Quito are required to have an urban garden. This action broke the paradigm inside the same education sector because it means extra work for educators and administrators. Besides teaching patience and being conscious of hard work, the students can learn how to care for nature and produce their food in a didactic way.

One of the most recent achievements is the mention of the FS and urban agriculture at the Resilient Strategy of Quito, presented in 2017 with the support of 100 Resilient Cities. With this and the awareness of natural disasters that the City is exposed to, AGRUPAR started to count as a resilient construction program.

For AGRUPAR, having technicians is a significant factor in the program. These technicians give capacitation to the people who want to begin. They visit the farmers every month and sign the commitment letter to join the farmer. Luis and Javier are two technicians of the program, and they enjoy doing their work. It is essential to see how farmers grow as organic farmers.

### 13.3 Overview of the OFS in Quito

Organic certification guarantees a growing OFS in Quito in cooperation with the government of Ecuador. An overview of the establishment of the OFS in Quito can be seen in Figure 13.2. In 2000, a group of people started with a pilot program of organic urban gardens in 'El Panecillo,' a Quito mountain area. Seeing the strong results, AGRUPAR was created in 2002. In the same year, Ecuador's government created a policy by which organic production in Ecuador can be regulated. Three years after, in 2005, AGRUPAR and the government of ConQuito joined to become a formal part of the City. One year later, it began to hold Bio fairs at different city
point’s enable everyone access to the urban garden produce. In 2007, AGRUPAR was certified as a certification body to make certification of the urban gardens' participants possible. The actual organic regulation was established in 2013. AGRUPAR joined the Milan Urban Food Policy Pact and had a special mention at their awards. Nowadays, organic products can be found at the Bio fairs and supermarkets or little stores around the City.

![Figure 13.2: Establishment of OFS in Quito](Source: Own figure)

### 13.4 Key Foundational Principles

Any principles and values were considered when the AGRUPAR project was developed, and more were added over time. The principles can be divided in (Figure 13.3), personal and occupational. Both of them are important for the development and implementation of the OFS in Quito. All of this considers that many
farmers are certified as organic, and the rest practice the same organic methods without a certification.

Figure 13.3: Key Foundational Principles in Urban Agriculture
Source: Own figure
14 Conclusion  
(Sebastian Kretschmer)

A common thread across all case studies featured in this documentation project is the narrative of a local foodshed in conjunction with organic values-based short supply chains in order to approach food and nutrition security and food sovereignty outcomes. This local organic foodshed is circumscribed by different geographical and jurisdictional scales, which can mean entire provinces, districts or municipalities. Such physical boundaries, by which these FSs are defined are a prerequisite to design value chains, including production and consumption as well as certain governance processes.

Depending on the design of individual regional initiatives, giving preference to local foods can also mean rejecting products from a wider area. This sort of rigid pursuit of the 'local' goal without being clear about why this should be the right solution in the first place corresponds to a defensive way of thinking, in that one's own region is patriotically revered.

The other way of promoting local supply is a cosmopolitan, less demarcating one that focuses on diversity. This way of thinking does not try to shut itself off from globalization. However, global trade in connection with a solidary way of thinking has two sides. On the one hand, many, especially poorer countries in the global south, depend on exporting food in order to keep jobs. On the other hand, much of the environmental damage caused by production remains at the place of production, which in turn can affect these poorer countries.

The featured organic foodsheds all have a convening body with the purpose to orchestrate the actions and to convey the guiding principles to constituents. In other words, in order to speak of a ‘local OFS’ a certain amount of key actors have to form some sort of
critical mass in order to bring about the sense of intention and goalsetting that creates the identity of an alternative FS in the first place. Some of the cases featured in this documentation project have a certain form of central governance where local administrations perform a key role in holding the system together, whereas other FS cases are run by NGOs. Again others are mostly driven by market dynamics with little coordination by any government entity or charity. Whereas most of the FSs illustrated in this project are catering toward a diverse food environment, serving a variety of sales outlets, some actually focus on specific value chains, catering for specific target groups, such as organic meals in public institutions.

Another common thread across all case studies is the degree of collaboration among stakeholders, as expressed by the interviewed key actors in each local OFS. They stated that the quality of relationship to their peers and other actors within the value chain was mostly collaborative and trusting and less marked by mere competition. Likewise the driving motives among key actors have been identified as closely linked to the precepts of sustainable development in terms of environmental, social and economic justice.
References

Chapter 1: Overview


Chapter 2: Methodology


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The global food system continues to be threatened by climate change, environmental degradation, food insecurity, and hidden hunger. Consequently, both ecosystem- and human health issues will continue or worsen if no sustainable strategies are adopted. In the search for food system transformation, organic is a promising approach to achieve sustainable food systems.

From a food systems perspective organic actors share a value-based ethical vision and follow codified principles that lead to sustainable outcomes. Organic principles are codified in international and national standards and regulations. As a typical cradle-to-cradle approach, organic farming corresponds to the idea of a green technology.

Through documenting real-world examples of organic food system cases worldwide, eleven cases have been selected based on predetermined criteria. This book documents real local food system examples around the globe, namely South-West region, Nigeria; Manyara region, Tanzania; Tamil Nadu, India; Bislig City, the Philippines; Goesan County, South Korea; Mouans-Sartoux, France; Södertälje, Sweden; Cilento, Italy; Quito, Ecuador; Pennsylvania, USA; Wellington, New Zealand.