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## Organic Farming Development in China and Japan: An Analysis of Supportive Structures

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## 1. INTRODUCTION

One of the globally most discussed issues in the 21st century has been how to deal with climate change and how to minimize negative human-made influences on the natural environment. Due to the world's rapid population growth, food supply, safe food products and agricultural production are also topics intensely debated worldwide (Tilman et al. 2001: 281). But how is the protection of the environment connected to overpopulation and agricultural production?

In order to produce sufficient food for a growing number of people, modern farming methods that generate large amounts of food as fast as possible have been developed. However, rapid growing methods and intense crop production generally require the use of chemical fertilizer and pesticides to ensure high yields and crop resistance. But the utilization of synthetic substances on crops and farmland does not only lead to serious damage of soil, ground water, and living species in ecosystems. Such farming techniques also overexploit natural resources and leave pesticide residues in foodstuffs. That can negatively affect human health as well as eliminate cultivable land and in the worst case result in endangering the survival of humankind. Ergo, the problem of finding the right balance between protecting the environment while providing enough food for everybody seems pivotal. As a natural consequence scientists and experts have been searching for alternative manufacturing methods that are less harmful to people and nature (Trewavas 2002: 668 f.).

Within this context organic farming<sup>1</sup> has increasingly been put forward as a possible way of tackling the above mentioned problems.

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<sup>1</sup> Due to a number of reasons this text will utilize various synonyms of the term *organic farming*. Throughout scientific literature about organic farming various expressions that describe similar farming concepts have been found. Hence it appears that the different terms are interchangeable. In order to reflect the variety of expressions detected in scientific texts, synonyms of the term *organic farming* will alternate in this thesis. Additionally, language variation may also help to produce an appealing text that nurtures the reader's attentiveness at all times. Terms used will mainly be: *organic agriculture*, *green agriculture/farming*, *biological agriculture/farming*, *alternative agriculture/farming*, *sustainable agriculture/farming*. Throughout this text the terms are all equivalent and describe farming techniques as defined by the International Federation of Organic Agriculture Movements: "Organic Agriculture is a production system that sustains the health of soils, ecosystems and people. It relies on ecological processes, biodiversity and cycles adapted to local conditions, rather than the use of inputs with adverse effects. Organic Agriculture combines tradition, innovation and science to benefit the shared environment and promote fair relationships and a good quality of life for all involved" (IFOAM 2008).

Experts and researchers believe that green farming methods contribute to decelerating climate change. As organic agriculture requires less input materials based on fossil fuels, it produces less carbon dioxide, which is a major driver of climate change. In comparison to conventional farming, organic farming can reduce carbon dioxide emissions by up to 60 % (FAO 2007: 5). Moreover, bio farming maintains a healthy balance of the soil's natural carbon reserve. This essential amount of carbon requires the existence of a mixture of microorganisms and decomposition matter in the soil. As a result of intensive conventional farming, the organisms do not have enough time to develop and the carbon that would naturally be stored in the soil as a result of this process is emitted into the atmosphere, which then again accelerates global warming. Consequently, farming methods that focus on conserving natural processes can make an important contribution towards slowing down climate change (Lal 2004: 1623).

Experts from the *Food and Agriculture Organization of the United Nations* (FAO) moreover claim that bio farming generates cross-sectoral advantages, i.e. positive effects on humans, animals, economies, and the environment. In organic farming the use of chemical fertilizer and other substances that negatively affect the ecosystem is avoided which helps natural preservation of plant and animal variety. Furthermore, through biological agriculture lands which are gradually turning arid can be reactivated and utilized as cultivable land. As people become more attentive about consuming healthy products, the increasing demand to purchase non-hazardous food boosts the market for these goods and thus creates new business options, which then again stimulates economic sectors (Morgera et al. 2012: v). Currently organic goods are already becoming more and more popular among consumers in numerous countries and more than 30 million hectares of land worldwide are cultivated with organic methods (FAO 2007: 2).

In 2007 researchers at the International Conference on Organic Agriculture and Food Security presented results on how organic farming could support global food supply, higher agricultural yields, and reduce health problems caused by chemically treated food products.

They reported that although the production of organics involves diverse challenges, such as a high labor input or initial drop of output after conversion, examples all over the world have shown that the increase of organic farming would result in numerous benefits and thus help to confront major global issues in terms of food supply and environmental problems.

According to experts' calculations each person in the world could be guaranteed at least 2640 calories per day if all agricultural products were manufactured with organic methods. Developing countries would benefit greatly from organic farming, as, with biological techniques, agricultural yields are estimated to climb by more than 50 %. Due to the fact that green farming methods are largely based on processing local resources and thus optimize accessibility of input factors, only half of the energy is needed for organic production than that for conventional food manufacturing. The FAO believes that the introduction of organic gardens in urban areas and markets for local bio products do not only support self-supply for many consumers, but also increase the saving of resources as the transportation route of food from the place of production to the consumer is shortened. This factor also contributes to a reduction of input costs; however, as mentioned above, labor costs usually increase when using organic growing methods. But the fact that organic farming is more labor-intensive than conventional farming also means that it creates work opportunities, and thus supports local economies and social well-being. Moreover, biological farming fosters a stable food supply. That is, for example, because organic farmers are obliged to majorly utilize seeds and plants that are native to the local area, which suggests that the plants are already adapted to local weather conditions and less susceptible to climate risks (FAO 2007: 2 ff.).

As has been briefly illustrated above, organic agriculture has broadly been considered as one way to alleviate the effects of human population growth and industrialization on the natural environment and global food supply.

One of the most dynamic regions worldwide, namely East Asia and in particular China and Japan might be regarded as a rather interesting area to be considered for research when taking all the above-mentioned issues into account. With currently around 1.3 billion people China ranks first among the countries with the largest population worldwide (United Nations Department of Economic and Social Affairs 2012). Although about 84 million Chinese have less than 1.25 USD to spend per day (World Bank 2010), the middle class in the People's Republic of China (PRC) is growing steadily. According to the *Brookings Institution* China's middle class only made up slightly more than 10 % of the total population in 2009, whereas this number is predicted to rise up to more than 40 % in 2020 and over 70 % in 2030 (Kharas 2011: 15). In particular the upper middle class is expected to become more important for the country's domestic market in the future. Members of this social class will increasingly focus

on purchasing products that exceed elementary human needs (Barton et al. 2013). A research study by *McKinsey & Company* predicts that within five years around 400 million Chinese will have enough money to purchase luxury goods, e.g. cars. And another 60 million consumers will make up China's upper class (Atsmon & Magni 2012).

China's economic growth in the past decades has caused some serious environmental problems in the country. Natural resources have been subject to intensive use in order to make economic expansion possible (Fu et al. 2007: 7597). In 2013 the Chinese Ministry of Environmental Protection reported an alarming state of the country's natural environment. The pollution level of numerous rivers is very serious and more than half of all tested groundwater locations in 2012 have been rated as providing inadequate quality water. Further environmental problems China is currently facing include severe air pollution in urban areas and pollution also in rural areas due to increasing industrialization and urbanization (Ministry of Environmental Protection of the People's Republic of China 2013). Moreover, for a number of years China has been the country with the highest carbon dioxide emissions worldwide. From 2010 to 2014 China has produced more than 8 million kilo tons of carbon dioxide, whereas the United States, ranking second, has emitted about 5 million kilo tons within the same period of time (World Bank 2014).

China has furthermore faced a number of food safety problems in the past couple of years. Numerous reports can be found on diverse cases of food poisoning and hazardous chemical residues in food products. In 2008 the substance melamine, which was found in Chinese dairy products, caused a national and international scandal, as infants who consumed these products suffered from kidney stones and at least two died (Zhu & Ho 2008). Also, fraud cases in which food products have been labeled insufficiently have fueled domestic debates within society about the quality of food offered on the Chinese market (Ni & Zeng 2009: 1990 f.). In 2011 bean sprouts that had been treated with toxic chemicals in order to improve their look and accelerate their growth were found in China's northeast. In the south of the country traces of aluminum were found in steamed dumplings made with contaminated flour. The amount of aluminum detected in the foods exceeded the allowed standards. Pork meat has also been subject of numerous food pollution cases. The treatment of pork meat with clenbuterol, a steroid that is harmful to human health, has occurred several times within a period of 10 years. In 2011 rice that contained health endangering heavy metal residues was

discovered in China's southern part (Foster 2011). *Greenpeace China* reported in 2011 that surveys performed in large supermarkets showed that many vegetables, fruit and rice were contaminated by large amounts of pesticide residues [*own transl.*] (Greenpeace China 2011). And although the country has introduced stricter regulations on food safety, the implementation of the laws remains insufficient (Ni & Zeng 2009: 1990 f.).

With the international trend of supporting organic farming as a strategy to tackle global issues in mind, the above mentioned issues China is dealing with suggest the question of whether the country has been touched by that trend in any way. When thinking about the environmental issues, food safety scandals and subsequent consumer skepticism, as well as the large population in China, one might wonder if the country fosters the development of organic farming at all. To what extent can a supportive framework for biological agriculture be found in China?

Japan's agricultural sector has experienced a shrinkage of farms in the first decade of the 21st century. In 2007 around two million farms existed, whereas in 2011 merely 1.5 million were left. Experts assume that this is the result of inefficient structures within the sector as well as a gradually aging population that lacks people of working age. As a side-effect the cultivated land in Japan has decreased from more than six million hectares in 1960 to around 4.5 million hectares in 2011 (German Federal Ministry of Food and Agriculture 2013: 5). Along with these declining trends in Japanese domestic agricultural production comes the problem that the total area which can theoretically be used as farmland – irrespective of the currently de facto cultivated areas – is too small in order to feed a population of almost 130 million (ibid.: 1; 6). Although Japan's rice production can supply every Japanese with rice at 100 %, Japan is the nation with the lowest self-sufficiency rate in terms of calories among the world's main industrial countries (ibid.: 6). Whereas, for example, Australia's self-sufficiency rate is at more than 200 %, the United States' is at slightly more than 120 %, or Germany's at 84 %, Japan's rate is at only 40 % (FAO 2003; in: Ministry of Agriculture, Forestry and Fisheries 2009a: 6). This causes a dependency of the country on large amounts of food imports that exceed its exports to a great degree. Japan is moreover the world's greatest food importer (German Federal Ministry of Food and Agriculture 2013: 6 f.), as more than half of the total food consumed in the country is brought in from abroad (Motomura 2013: 2). Japan's Ministry of Agriculture, Forestry and Fisheries aims to raise the national self-sufficiency rate by 5 %

until 2015 through domestic agricultural production and consumption support. Therefore farmers are to be encouraged to efficiently make use of the farmland for local production and cooperate with the food industry sector. Furthermore, consumers are to be motivated to purchase nationally and locally grown foods (Ministry of Agriculture, Forestry and Fisheries 2009a: 7).

Just as consumers in many other countries, Japanese consumers are also becoming increasingly concerned about the safety of the food products they purchase (Motomura 2013: 2). Besides, in general Japanese consumers attach great importance to high quality products that are sealed and packed in a clean way and thus comply with their personal hygienic standards (German Federal Ministry of Food and Agriculture 2013: 10). However, not only as a consequence of the outbreak of the mad cow disease around the turn of the 21st century or because high levels of pesticide residues were found in food products, food safety has progressively become an issue for Japanese consumers (Yokoi Yukio 2003: 295). After the Fukushima Daiichi nuclear power plant meltdown in 2011 and the subsequent release of radioactivity the issue of unsafe food again came to the fore. The fact that residues of radioactive substances were found in rice and beef, even if they should have undergone strict food tests according to official standards, caused serious health concerns and among the Japanese public. It was yet not only the contaminated foodstuffs themselves that spread the lack of faith in Japanese goods. People began to criticize the government's inability to perform adequate controls of food products and accused decision-makers of deliberate concealing of contaminated food discovery for the sake of avoiding damage compensation and major effects on the economy. The public's distrust about food testing done by the government even led to a growing number of volunteering civilians, mostly farmers and consumers, who established their own testing stations for the detection of radioactive material. This phenomenon of activism within Japanese society is rather uncommon, because it is mainly government officials as opposed to independent communities that are expected to take action in any case of domestic problems (Fackler 2012).

Apparently Japan is also struggling with issues connected to food supply and environmental preservation. Just as in China, due to a number of incidents regarding contaminated food, consumers in Japan are increasingly worried about what food is safe to purchase. Japan's agricultural production is declining at the same time and the government is looking for a

sustainable method to increase domestic food manufacturing. As organic farming has been a food production method that, according to research, can be a possible way of counteracting these phenomena, one might wonder if alternative farming techniques have ever been a subject among decision-makers and society in Japan. Or is the country's low self-sufficiency rate rather a barrier for the development of organic farming? When looking at the issues the country is currently facing, the question suggests itself how much effort to find sustainable solutions, as e.g. stimulating the development of biological agriculture, Japan has made in the past and present. Does Japan foster a stable foundation for realizing the advancement of organic farming? What factors in Japan promote organic agriculture?

This paper's major goal is to provide an insight into the factors that influence organic farming development in East Asia by looking at two exemplary country cases: China and Japan. As has been demonstrated above, China and Japan are two nations that are majorly affected by globally wide spread problems, such as overpopulation, environmental problems, and safe food supply issues. Bearing in mind that there are numerous examples of Western societies and countries, in which organic farming has become an important alternative to counter these problems, it seems interesting to examine whether similar trends may be observed in East Asia as well. Does organic farming in this dynamic part of the world have enough support in order to become a sustainable *modus operandi* to deal with national problems?

China's and Japan's approach to organic agriculture is to be evaluated based on, amongst others, administrative, legal, social, and economic structures that influence the development of biological farming. A supportive system established by government authorities as well as an appreciative attitude among the public, for example, might be indicators for a growing awareness about organic farming and might also suggest that biological agriculture might be advancing. On the contrary, a lack of these supportive aspects might suggest an underdeveloped organic farming sector. However, the key goal of this paper is not to establish a correlation between the existence of supporting factors for biological agriculture and the actual condition of this sector in a specific country. Neither are specific effects resulting from the presence of supporting elements for organic agriculture to be the central theme of this work nor are these consequences to be measured in any way. Yet, the discussion at the end of the thesis is not to completely exclude a mere perspective of what the findings might suggest re-

garding the development stage of the organic sector in China and Japan. The focus of the paper is rather to be the influential factors themselves. Whether such factors exist in China and Japan at all, and if so, to what extent, is to be the essential subject matter of this work. The supporting factors for organic farming are to be researched for both country cases individually, so that subsequently those found for China and those for Japan may be compared. Inhibiting factors will only be dealt with briefly, as the absence of supportive structures automatically suggests the opposite of development and expansion. Barriers to organic farming development in both countries will therefore not be explored in detail in the analytical part of this paper.

The research questions that are to be answered by this thesis can be divided into two categories: general and specific. In order to evaluate influential factors on organic farming development in China and Japan, the following general research question has to be answered first: What are, regardless of specific countries, in fact general structures that are likely to influence organic farming development?

This paper attempts to answer by first establishing a framework of factors that are regarded by international experts and researchers as having a positive or negative influence on the development of organic farming in general, or have been proven as supportive or inhibitive in individual organic farming projects. For that purpose the particular factors have been collected from literature research. In order to obtain a clear structure for the succeeding analysis the factors have been arranged according to three general spheres that can support organic farming, namely politics, economic circumstances, and social factors. A table at the end of this work's first part summarizes all influential factors. Subsequently, the analytical part focuses on the influential factors in China and Japan, which are examined according to the theoretical framework.

The following specific research questions thus arise out of the results from the general research:

Can such essential supportive structures currently be found in China and Japan? If any of the factors can be detected, to what degree have they evolved? Does either China or Japan, or both countries, seem to lack a solid base to create a beneficial environment for bio farming development? What are differences and similarities of the influential factors on organic farm-

ing in China and in Japan? Where are insufficiencies and barriers, i.e. the lack of fundamental factors or intrinsic impediments, as for example, seemingly useless bureaucratic procedures or vaguely formulated laws and the like?

Finally, the results from the analytical part of this paper are discussed by comparing the aspects that support organic farming in China to those in Japan. The discussion also includes brief views on what the existence or absence of supportive schemes in China and Japan could mean regarding the development stage of their organic farming sectors.

For a number of reasons the findings from this thesis may be relevant for further research related to organic farming, in particular that in China and Japan. With this work as a basis, the question of how the presence of organic agriculture support schemes determines the actual state of development of a country's organic farming sector could be subject of future studies. Perhaps even a formula could be created that would calculate what supporting measures have to be strengthened or established in order to reach a certain stage of development of a country's organic farming sector. This would be a way to facilitate a rapid expansion of sustainable growing methods in numerous countries and, if broadly applied, might even contribute to a deceleration of climate change. Moreover, the theoretical framework established in this paper can be used as a basis for studying support schemes for organic farming in further Asian countries in order to obtain a more comprehensive image of how bio farming is supported in that part of the world.

## **2. RESEARCH FRAMEWORK**

### **2.1 CORNERSTONES AND LIMITS**

Throughout the process of researching literature about general supporting and inhibiting factors of organic farming development a vast quantity of scientific sources in the field has been found. As a natural consequence the following questions arose: According to which aspects should sources be selected that would form a functioning framework for this paper's theoretical part? What factors could serve as logical reasons and guidelines for the selection and exclusion of certain articles or books and thus set necessary limits for this thesis and the theory based on which a realistic image of organic farming development in China and Japan could be obtained?

With the main topic of this paper in mind, several points have been identified that could serve as pillars for the selection process of literary sources and derived criteria according to which the situation in China and Japan is to be discussed. This was mainly done by taking a look at how scientists in the field have proceeded when identifying support measures for organic farming.

Various researchers in the field have often illustrated different sets of support mechanisms or obstacles based on an observation of the situation in one country or comparison and summary of measures applied in a number of different countries.

Authors, such as Lohr & Salomonsson (2000), Wheeler (2008) and Duram (2000) have examined support structures and obstacles of organic farming in individual countries. Lohr & Salomonsson (2000) looked at conversion subsidies in Sweden, whereas Wheeler (2008) focused on factors that influence the adoption of organic farming as well as those that inhibit further development in Australia, and Duram (2000) analyzed farmers' decision-making in Illinois. Several authors, as for example Stolze & Lampkin (2009) or Padel et al. (1999) concentrated on displaying support structures in a number of European Union (EU) countries, whereas others, like e.g. Wheeler (2006) explored a large quantity of more than 50 countries and their support strategies of organic farming. However, the fact that most authors established their collection of support measures as a result of comparing different countries should be highlighted at this point. Such an approach implies that numerous researchers agree

on rather broadly scaled research, which is thus to be a limiting guideline for the following part.

In order to come as close as possible to a broad set of factors that influence organic farming development and can be applied to China and Japan later on, the basic framework to this work is to consist of a range of diverse literary sources from different backgrounds. As a consequence the selection of sources from as many geographical areas as possible certainly seems comprehensible and will allow obtaining a general idea of the variety of support factors for organic agriculture used worldwide. In that way the danger of an insufficient set of factors and thus biased image generated for example by only considering the situation in Europe or the United States can be avoided. This does not imply that this thesis is likely to create a complete and all-encompassing collection of every supporting mechanism ever applied, since that would be out of proportion to the feasible realm of this research paper. However, the following part is to be an attempt to sketch the diversity and probable resemblance of support measures for organic farming in different countries of the world.

Nevertheless, the issue of how to limit the number of sources while maintaining the broad spectrum of literature still remains. But, why would articles and books from or about one country be more relevant to this paper than others? It seems reasonable to assume that countries in which organic agriculture plays an important role among decision-makers as well as farmers and consumers have already developed various successful support strategies and identified obstacles to organic farming. Factors such as a large share of organic agriculture in a country's farming sector, a high growth rate of the organic sector, or a large number of organic producers are indicators that result from an active engagement of key players in the sector as well as a successful application of adopted organic support mechanisms and could thus point at the degree of development of an organic sector. Therefore the consideration of literature about countries with a relatively high degree of development is also to be a main criterion regarding the selection of sources. The interrelation of effective encouragement of organic agriculture and the development level of a country's organic sector is not only mentioned in an article by Padel et al. (Padel et al. 1999: 313), but is also pointed at by the *Research Institute of Organic Agriculture* (FiBL) and the *International Federation of Organic Agriculture Movements* (IFOAM). The most recent report by the two organizations (Willer & Kilcher 2012) defines several indicators that categorize countries practicing organic farming accord-

ing to their degree of development in that sector. The following passage is to depict different recent statistics about global organic farming assembled by the FiBL and the IFOAM.

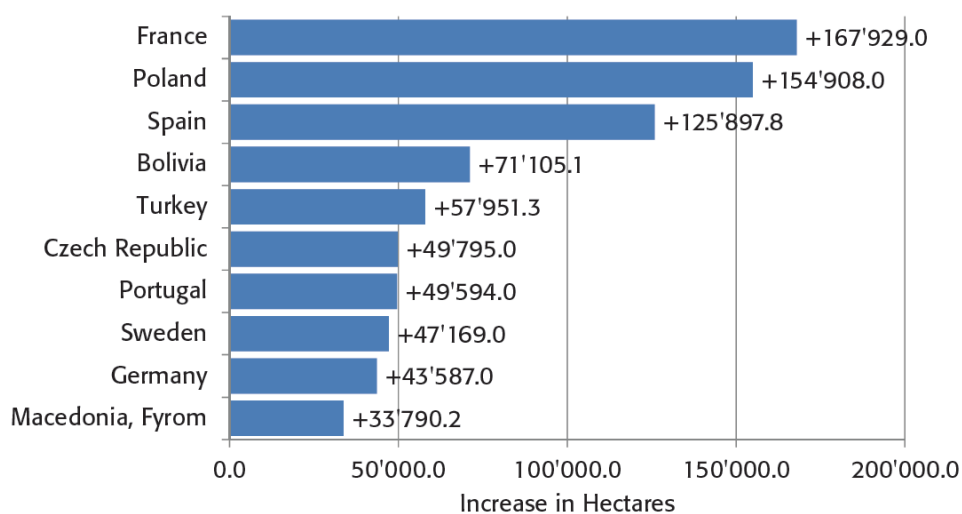
The two organizations have already released numerous reports that include data about organic agriculture and its trends all over the world. Categories that might thus be relevant for the selection of this thesis' sources include the *entire size of organic land available in a country*, the *percentage of organic land in a country's farming sector*, the *rate at which organic land expands*, the *number of organic producers*, the *market for biologically manufactured goods*, and the *quantity and state of implementation of organic regulations within a region* (Willer & Kilcher 2012: 25). Consequently, sources that originate or deal with countries that can be classified into one of the categories mentioned above are to be at the center of consideration in this work's search for research criteria.

The country that possesses the largest area of organic farmland by far is Australia. In 2009 Australian organic farmland amounted to 12 million hectares, whereas the second largest area utilized for organic agriculture was that of Argentina, which equals slightly more than four million hectares. These two countries were followed by the United States with almost two million and Brazil with 1.77 million hectares (Willer & Lernoud 2012: 39). For a more detailed illustration of the global ranking of thirty countries with the largest areas of organic land see Table 1 Appendix 1.

As to shares of organic farming area of the total arable land in a country, the three leading countries are the Falkland Islands with about 36 %, Liechtenstein with slightly more than 27 % and Austria with nearly 20 %. Furthermore, countries whose share of organic agricultural land lies above 10 % are Sweden, Estonia, Switzerland, and the Czech Republic (Willer & Lernoud 2012: 43). Detailed figures for each country as well as countries that have shares between about 3 % and 10 % can be found in Table 2 Appendix 2.

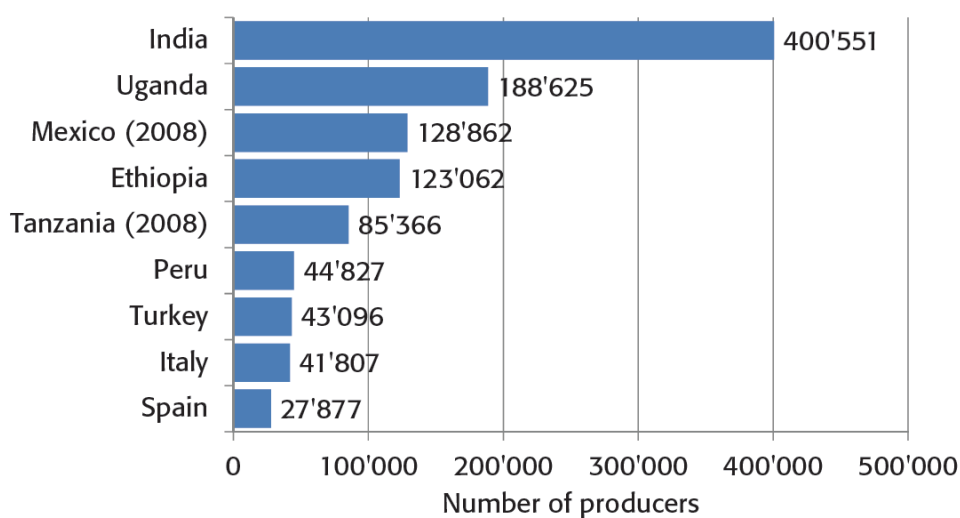
In 2010 Europe experienced the highest growth rate concerning organic farming land. The largest expansion of organic agricultural land has been observed in France, where the organic area increased by about 170 000 hectares. Poland ranked second with regard to these data, registering a growth of approximately 155 000 hectares, whereas Spain's organic agricultural land expanded by more than 125 000 hectares. As indicated in Figure 1 below, coun-

tries that followed the leading ones mentioned above were Bolivia, Turkey, the Czech Republic, Portugal, Sweden, Germany, and Macedonia, FYROM (Willer & Lernoud 2012: 47 f.).



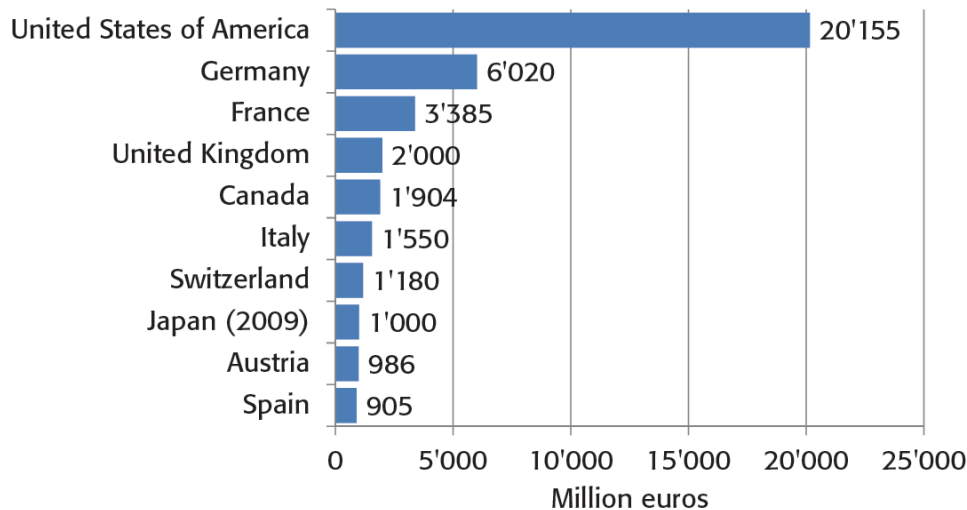
**Figure 1.** World: The ten countries with the largest increase of organic agricultural land 2010 (Willer & Lernoud 2012: 48)

With regard to producers in the field of organic farming the largest number has been recorded in India. In 2010 there were more than 400 000 Indian producers of organic products. Uganda and Mexico reported the second and third largest number of organic producers in that same year. Figure 2 below displays the ten countries with most organic producers in 2010 (Willer & Lernoud 2012: 61).



**Figure 2.** World: The countries with the highest numbers of organic producers 2010 (Willer & Lernoud 2012: 61)

Concerning the market for organic products, the United States was the leading country in 2010, whereas Germany was second and France third. Moreover, the United Kingdom, Canada, Italy, Switzerland, Japan, Austria, and Spain were among the ten countries with the largest organic markets, as shown in Figure 3 below (Willer & Lernoud 2012: 67).



**Figure 3.** Global market: The countries with the largest markets for organic food 2010 (Willer & Lernoud 2012: 67)

As has been mentioned earlier the realization of organic regulations and certification standards in a region ranks among those factors that indicate the degree of development of a country's biological farming sector. Concerning this aspect statistics by the FiBL and the IFOAM have shown that the European Union is the only region<sup>2</sup> in which regulations concerning organic farming have been implemented entirely in every country (Huber et al. 2012: 129). Subsequently this fact suggests that countries within the EU count among such that have reached a comparatively high level of organic farming development.

Having identified those countries that seem to be at the top of organic farming development worldwide it appears logical to look further and question whether it is reasonable to utilize each and every country from that top as a basis for scientific literature research merely

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<sup>2</sup> The FiBL and the IFOAM have grouped the regions for statistics on organic regulations as follows: the European Union, Non-EU Europe, Asia & Pacific Region, The Americas & Caribbean, and Africa (Huber et al. 2012: 129 f.).

for the reason that it counts among the highest ranking ones concerning the categories mentioned above.

As this thesis is mainly about supporting factors and obstacles of organic agriculture development in China and Japan and not about organic agriculture in various countries of the world, it seems appropriate to limit the number of countries that serve as a basic framework for this paper's search for research criteria to at least one top ranking country from each category. In so doing the diversity of support measures used globally is still to be maintained and every category is to be considered at an equal level while avoiding an unnecessary abundance of information about organic agriculture structures in as many countries as possible as well as this thesis turning out to be a comparison between two East Asian countries and one or two other countries. Nevertheless, the reader should keep in mind that the selected literature is rather to be seen as a collection of samples of measures taken in particular countries which are among those with highly developed organic farming sectors than an all-encompassing universal image. Moreover, the fact that there might not be the same amount of information about every country that is among the top ones in each category suggests that those sources about top countries with rather detailed contents are naturally to be preferred.

However, as has been mentioned above, the collection of factors that influence the development of organic farming and is to be used to analyze the situation in China and Japan is to be as broad as possible. The thought to select sources from countries with a high state of development in terms of their organic sector, because they would probably already have been role models for organic newcomer countries and thus already include measures applied in countries with less developed organic sectors, seems logical. Nevertheless the possibility of organic novices coming up with other support mechanisms than those utilized in advanced organic sectors should not be ruled out entirely, since, for e.g. climatic, economic or political reasons, measures suitable for one country do not necessarily have to be appropriate for another. For that reason organic support as well as obstacles to further development in the sector within countries that have only recently begun dealing with organic agriculture, such as Bangladesh or South Africa, is also to be included in the following search for research criteria.

In summary, three cornerstones and limitations for the selection of suitable literary sources have been identified throughout the previous part of this paper. Firstly, the variety of sources, i.e. texts from and about different countries' support measures for organic agriculture,

is to remain as broad as possible. Secondly, sources that deal with countries whose organic sector is regarded as being highly developed are to be prioritized, i.e. sources about those regions that are among the top ranking ones within the categories defined by the FiBL and the IFOAM. Thirdly, for the sake of completeness sources discussing support mechanisms of biological farming in countries that have only begun using organic methods are also to be considered.

The following part will thus include sources about European countries both grouped together and individually, about the United States, Australia, South Africa, Thailand, Bangladesh, India as well as a number of worldwide countries considered together and about support mechanisms of organic farming in general.

## **2.2 SCIENTIFIC GROUNDWORK**

Michelsen et al. conducted a study on the development of organic farming in European countries. Therefore they selected six of them including Greece, Italy, Denmark, the United Kingdom, Austria and Belgium. The countries vary strongly in terms of their organic farming sector's stage as well as their institutional and political environments. The authors intended to select varied countries in order to come up with an average system on how to deal with diverse pre-conditions for organic farming on a political level (Michelsen et al. 2001: ii). Michelsen et al. claim that in order for an organic farming sector to prosper a country has to provide a favorable setting regarding its politics, economy as well as social surroundings (ibid.: 149).

Michelsen et al. have hence identified six steps that lead to a positive development path of organic farming sectors. According to step one a community of organic farmers or individuals that are interested in organic agriculture should be created. The community should then be supported by special institutions that would promote knowledge and provide counseling as well as function as a representation agency for farmers' interests. The overall acceptance of production standards in organic farming should be promoted as a second step, which also involves extensive political support as well as common certification models that can nevertheless be adjusted to deviating pre-conditions in specific cases. In step three governments should launch financial incentives for organic farmers. As a forth step the authors recommend creating a neutral platform and meeting point for both organic and traditional

farmers. This could be a board that assumes tasks like, for example giving advice to both types of farming communities, i.e. organic and general, or helping to oversee the introduction of reasonable support measures for organic agriculture. The fifth step should then be the creation of encouraging market conditions for organic products. Finally, the establishment of an institutional framework is to be the sixth element of the path towards a healthy organic farming sector (ibid.: 170 ff.).

According to Michelsen, politics can provide three groups of incentives for the development of organic agriculture. These include legal, financial and communicational support. Regulations issued by governments are counted among legal incentives, whereas financial support measures include monetary rewards and financial punishments. Communicational support is defined as a set of measures that create a connection basis between institutions and society (Michelsen 2002; in: Stolze & Lampkin 2009: 239). The core of such a basis are associated organizations that conduct research on how to develop the organic sector, but also provide information or counseling for individuals or groups that are seeking insight into the field of organic agriculture (Stolze & Lampkin 2009: 241).

Subsidies for conversion from general farming methods to organic farming have also been picked out as a central theme in a publication by Lohr & Salomonsson. The authors found that, for the case of Sweden in particular, financial subsidies counted as an important element in the set of supportive structures for the country's organic sector (Lohr & Salomonsson 2000: 143 ff.). In the United States (U.S.), a lack of financial incentives is one of several reasons for the recent bias regarding supply and demand of organic products. According to Constance & Choi U.S. consumers demand more organic products than farmers in the country are able to produce. The government has focused rather on market signals as generators of organic sector growth than on subsidies (Constance & Choi 2010: 166 f.).

Wheeler conducted research on whether market mechanisms or governmental policies have a greater influence on organic farming growth. Therefore she studied more than 60 countries and concluded that both factors were important regarding their positive effect on the expansion of organic sectors. Nevertheless the influence of governmental policies was slightly higher than that of the market. A market factor that is mentioned as a driving force for the growth of organic agriculture is the accessibility of organic products in stores as well as prop-

er advertisement of the groceries. On the policy side research and development have proven most successful as motors for organic farming expansion (Wheeler 2006: 14).

Matthias Stolze and Nicolas Lampkin have examined policies that encourage further expansion of organic farming in the EU. They argue that government support in terms of agricultural policy measures is nowadays a crucial element of the successful evolution of organic sectors. Government support policies, however, do not only include measures that specifically aim at organic farming as such, but also means that are directed towards appropriate research strategies, advertisement of organic products to the buying public and improvement of the commercial environment for biological farming (Stolze & Lampkin 2009: 237).

Schmid et al. recommend a set of support measures and policy elements for organic farming development, which they call an “Organic Action Plan” (OAP) (Schmid et al 2008: 19). According to the authors, such a plan must include the following components. Firstly, a government should introduce agricultural projects that support the development of organic farming explicitly. Secondly, product processing as well as finding strategies to attract consumers’ attention to organic produce must be part of the OAP. Furthermore, programs that spread important information and new research results about biological agriculture to organic farmers should be designed. Fourthly, individuals who buy organic products already or intend to do so should have the possibility to learn about organic farming and corresponding ideas. That may also include the incorporation of related subjects into school curricula. Moreover, the establishment and development of sufficient facilities for organic agriculture and the promotion of research programs are two important elements of an OAP as well. Finally, it is crucial that there are institutions that constantly review prevalent and previous circumstances within the organic sector in order to provide suggestions for further action. As a result incompatible policy elements can be altered or eliminated (ibid.). Aside from the importance of governmental support Schmid et al. also point out that fostering organic sector development requires the inclusion of those groups of people that are directly involved in or affected by the domain of biological farming and farm produce, namely farmers and purchasers of organic products (ibid.: 16). Farmers or companies that process or sell organic products are direct participants in the organic sector, whereas policy makers are merely observers and can thus never reach the same level of insight as the participants. Hence, the inclusion of participants’ views on current OAP implementation can be an essential part of OAP judgment (ibid.: 19).

Schmid et al. have summarized measures that were taken by eight EU countries in order to fulfill their respective OAP. These are displayed in Table 3 Appendix 3.

Padel et al. are convinced that there are two major aspects that are a necessary precondition for the development of any country's organic agricultural sector. First, the awareness about the status quo and a certain willingness to change it has to be present among citizens. Second, organic farming must be seen as a possible way to realize the change and improve the current situation. The combination of three important elements can, however, foster the belief in organic farming. On the one hand, the government has to offer explicit and comprehensible policy measures regarding the country's agricultural sector, on the other hand major stakeholders within the market must provide indications for positive conditions for organic agriculture. Additionally, addressees have to be given a variety of possibilities to inform themselves and learn about organic agriculture (Padel et al. 1999: 304 f.).

Padel et al. also mention financial support for conversion from general to organic farming methods as a possible indicator for organic sector growth, as EU member states with higher monetary incentives show faster development and vice versa (European Commission and National Agricultural Administrations; in: Padel et al. 1999: 308; 313). Further factors that influence the development of organic farming sectors are policy support, providing information about bio farming as well as marketing strategies such as image pricing, but also favorable economic surroundings, an administrative structure that encourages biological farming and a positive perception of organic methods within society (Padel et al. 1999: 313 f.).

Kaufmann et al. performed a survey on how organic farming is supported in new EU member states. The focus of this study was mainly to examine how social factors and economic aspects affect the rate of conventional farmers adopting organic methods. Kaufmann et al. came to the conclusion that neither of the two examined elements, if tested separately, led to a higher adoption rate to such an extent than if both social and economic support were combined (Kaufmann et al. 2009: 2589).

A study of countries in Central and Eastern Europe in the Baltic Sea region reveals several factors that had an effect on the expansion of organic farming in the area. These include investments in subsequent processing and promoting of organic produce as well as support for research. If proper incentives exist on the consumer as well as the producer side, the

development of organic farming is likely to proceed in a positive direction. On the consumer side, the motivation within society to buy organic products is seen as an important element that fosters organic sector growth considerably. Furthermore, environmental and health issues that are prevalent among consumers and thus influence consumer behavior also count as factors that affect organic sector development. Regarding the producer side, however, the progress of organic farming is additionally dependent on financial premiums and loans for farmers who convert from general to organic farming and also payments for their further training as well as other financial subsidies. Finally, the incorporation of organic farming into a country's rural development plan counts as a strategically significant step in fostering the growth of organic agriculture (Larsson et al. 2013: 9). In their survey Larsson et al. also tested the six steps that lead to development of organic sectors proposed by Michelsen et al. (Michelsen et al. 2001: 170 ff.), which were mentioned above. The authors agree that successful organic farming is dependent on these steps and a lack of one of them would represent a barrier to further development of the sector (Larsson et al. 2013: 16).

Leslie A. Duram conducted a case study on organic farmers in Illinois, which focused particularly on the perception of structural factors and their influence on the farmers' decision-making. In other words, she intended to find out what aspects affect general farmers' decisions to turn towards organic farming and also what structures generally have a positive or negative influence on organic farmers in Illinois. According to her results the most influential factors were the economy, politics, such as organic certification or agricultural action plans, social factors, as for example health or family support, and ecological circumstances, which e.g. includes detailed knowledge about a farm's natural environment and condition of their soil. Further, Duram concludes from issues expressed by Illinois' farmers that there is a great need for support of research and education as well as funding for small-scale farming and broader acceptance of family farming among the American society (Duram 2000: 40 ff.).

The Australian researcher Sarah Ann Wheeler conducted a survey among 185 of Australia's experts in the agricultural area, i.e. advisors, teachers of academic courses about farming, and researchers, asking about their ideas on factors that inhibit amongst others the development of organic farming in Australia. She arranged and divided the most frequent answers into five groups of barriers, namely the organic market, political support and information dis-

semination, internal farm problems, acknowledgement of farmers and other issues. For related details see Table 4 Appendix 4 (Wheeler 2008: 163 f.).

A survey about South African organic farming showed that there are numerous barriers that inhibit a smooth conversion from general farming to organic methods. Farmers mentioned that the national policy and laws are insufficient, costs for investments and certification are extremely high, the possibilities to inform oneself and receive advice are limited and marketing opportunities for organic products are scarce (Niemeyer & Lombard 2003: 15).

Klonsky & Greene point out that in the United States organic farming has developed considerably after the implementation of the *Organic Foods Production Act* in 1990. However, not only legislation is claimed to be a major support factor of organic agriculture in the U.S., but also the promotion and financial incentives for research projects in the area. Furthermore, the founding of an association within the Congress for the purpose of developing organic marketing and production programs is another supporting element introduced in the United States after 2002. However, the *Organic Trade Association*, whose members are primarily farmers and retailers, especially advocates further technical support for organic farmers as well as higher government premiums for converting farmers so as to facilitate conversion processes (Klonsky & Greene 2005: 17 ff.).

The United States Department of Agriculture (USDA) is the main governmental institution in the U.S. that coordinates and organizes numerous projects to support organic agriculture in the country. USDA programs, such as the *National Organic Program* or the *Agricultural Management Assistance Program* are directly targeted at farmers who need support regarding technical knowledge about and financing of their organic farms as well as advice about prerequisites for being granted official organic certificates. Moreover, grants for education about organic agriculture are available through the *National Institute of Food and Agriculture*, an agency within the USDA. The USDA is furthermore responsible for monitoring the correct use of organic labeling (USDA 2012: 6 ff.).

In Thailand governmental and non-governmental organizations are key players in the area of organic agriculture promotion and support. They implement organic farming projects in all of the country's provinces in order to raise vegetable producers' revenues and support the production of vegetables that are safe to consume (Rattanasuteerakul & Thapa 2009: 59 f.).

Sarker et al. found that farmers in Bangladesh are likely to adopt organic farming methods when convinced that their profits are higher than if relying on general farming. They are convinced to save money when abandoning costly pesticides and at the same time benefiting from premiums. Moreover, farmers who eventually converted to organic agriculture did so, because of their belief that such type of farming would provide them and their families with healthy and secure nutrition and above all would also be beneficial for the environment. These three factors were determined as crucial for the farmers' decision-making. The authors thus stress the importance of drawing attention to the benefits of organic agriculture all over the country by initiating education programs and information projects. Besides, Sarker et al. also recommend intensive government action, for example by launching a national policy to support organic farming (Sarker et al. 2010: 45).

India has introduced the *National Programme for Organic Production* in 2001. This plan is directed towards the development of the country's organic farming sector and provides necessary guidelines for a stable and nationally standardized system. Components include detailed certification regulations, policies regarding organic standards as well as the establishment of official authorization bodies for the administration and evaluation of different organic projects (India Department of Commerce 2001: 16). In order to ensure transparency certification agencies are required to provide information about their work (ibid.: 82). The development of organic farming in India is also being pushed by Non-governmental organizations (NGOs). NGOs are strongly involved in encouraging more and more farmers to convert to organic farming methods. They do not only support farmers by offering various information events and educational programs concerning advantages of biological agriculture, but they also function as institutions that assist bio-farmers with meeting certification requirements, exporting their produce, supplying them with seeds, or advising them on the practical handling of organic growing or animal husbandry (Garibay & Jyoti 2003: 11 ff.). Moreover, research projects and institutes that are mainly in charge of quality management as well as logistics are supported actively by institutions as for example the Indian Ministry of Agriculture (ibid.: 33).

However, India's organic farming sector has also been facing several problems. Due to bio products being relatively expensive, many consumers rather buy common vegetables or meat in order to save money. It is thus mostly members of the upper class who can afford to

buy organic food, although there is evidence that some middle class consumers buy bio products as well. As has been mentioned before, the government in India encourages the distribution of information about organic farming and its positive effects. But according to Garibay & Jyoti benefits of organic produce are nevertheless not promoted enough. Small farmers in India often have difficulties with paying costs for the certification of their biological produce, which is why some of them would rather continue producing common than organic food. Another constraint India's organic sector is facing is the lack of standards in certification. Although the government's guidelines are designed to facilitate standardization, the different certification agencies do not always seem to work in line with identical criteria. Furthermore, the procedure of the certification of biological produce is rather time consuming and complicated, which also leads to discouragement of farmers who intend to convert to organic farming (ibid.: 10 ff.).

Austria is the EU's top country with regards to the percentage of biological farming land, which equals close to 20 percent in relation to the total cultivated farming area (Eurostat 2011). Austria's organic farming sector has been developing rapidly since the 1990s (Rech & Tischler 2012: 29). It is also the first country worldwide that established national directives on biological farming (ibid.: 18), which is especially due to substantial government support of organic producers that started as early as 1991. Another reason for Austria's successful path is the strong commitment that most of the organic farmers show, as Rech & Tischler argue. The promotion of biological products in supermarket chains across the country furthermore led to a broad consciousness in terms of benefits of organic food and farming methods within the broad public. As the prices for bio products in discount stores seemed tolerable, the trend of healthy living and environmental protection thus also reached lower classes of society. The Austrian government has been developing and advancing a national program to foster organic sector growth continuously. Within the framework of this program biological farmers can receive direct payments from the government to compensate the higher costs that are generated by organic farming<sup>3</sup>.

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<sup>3</sup> Biological farming methods require a higher number of workers as it is more labor-intensive than regular farming, the output is often reduced, and biological animal husbandry involves costly animal feed as well as stabling (Rech & Tischler 2012: 37 f.).

Austria's national support plan for the biological farming sector also focuses on providing possibilities to receive guidance and consulting on how to convert from regular farming to organic methods. Specialized boards have been established that offer such services and thus aim at bio farming becoming more productive. Moreover, organic agriculture is not only gradually integrated into regular school curricula, but the Austrian government has also established particular agricultural schools that only teach organic farming methods and encourages research projects in the area. In that way the authorities intend to start educating and informing people about benefits of biological agriculture at an early age. The program furthermore helps organic farmers to promote their produce by e.g. supporting the set up and operation of farm shops or by financial support of extra employees (ibid.: 32 ff.).

In Germany the federal government is the central institution to manage organic farming support. Public funding for biological agriculture has been established in 1989 and since the early 90s the German federal states were authorized to start implementing legal regulations defined by the European Union and began running organic farming programs (German Federal Ministry of Food and Agriculture 2014: 12). In general the *Federal Organic Farming Scheme* is Germany's national organic action program. It defines guidelines on how biological agriculture in the country should be supported and developed. Within the framework of this plan, both the Federal Government and the federal states have introduced a number of support measures (Nieberg & Kuhnert 2007: 96 f.). Nieberg & Kuhnert have observed a broad deviation concerning financial support for organic farmers in each federal state and also note that public funding has been reduced at the beginning of the 21st century. In 2004 the German government, the governments of the federal states and the European Union made direct payments possible that accounted for around 150 Euros per hectare that was cultivated using biological methods. Another measure of organic farming support in Germany is the strong promotion of bio methods and their advantages among the general public and especially among farmers who are potential converters to organic farming. Agricultural or technical schools have included this topic into their curricula and thus assume the role of informing, educating and preparing those that are interested in biological agriculture, want to conduct further research or intend to become bio farmers themselves. Furthermore, students in some German universities can enroll in courses that deal with organic farming only. As the education on biological agriculture has become a more important element within Germany's organic pro-

gram, a broad range of educational material has been published and is constantly being advanced (ibid.: 97 ff.).

However, information is not only being spread in educational institutions, but also in the context of related theme events, exhibitions, or local fairs. In that way, farmers that pursue regular farming also receive the chance to inform themselves about alternative cultivation methods. Based on the guidelines from the *Federal Organic Farming Scheme* many federal states have established centers for consulting and advice on biological farming methods. In that way farmers, who are seeking guidance when intending to convert to alternative farming methods, have the possibility to turn to either private or federal institutions that offer such services. The Federal Ministry of Food and Agriculture has also introduced a prize among organic farms in Germany, which is granted annually to those farms that have contributed to developing and advancing the German organic sector in a remarkable way. This prize is another step towards motivating farmers and researchers to broaden their work and thus become more active in the biological sector. Apart from those mentioned above there are numerous other measures existing throughout Germany that support organic farming development in the country, e.g. the introduction of organic labels and certification, the realization of individual small-scale projects, or documentary film making about different topics dealing with organic agriculture (ibid.). However, Nieberg & Kuhnert mention that in spite of the great effort Germany has been making to develop its organic farming sector and increase the share of biologically cultivated areas, it is debatable whether the country's supporting measures for organic farming are sufficient. It appears that the current financial support for organic agriculture may not be as effective as planned by the federal government (ibid.: 106).

## **2.3 METHODOLOGY AND RESEARCH CRITERIA**

The articles found regarding general support mechanisms and factors that influence the development of organic agriculture in various countries revealed a remarkable pattern. From 18 articles that deal with these factors, eight texts, which is equal to almost half of the sources, discuss support mechanisms and obstacles in European countries, whereas four articles include the situation in the United States or one selected federal state, and influential factors in Australia, India, South Africa, Thailand, and Bangladesh are each covered by one article. Besides, a few authors have been found that derive general trends of support mechanisms from a

survey conducted in a number of different countries and also researchers that combine general incentives with those applied in a specific region within the same text.

Based on that information as well as common sense or logical conclusion one could assume that the more sources found from one specific region the more likely it seems that within this very region organic agriculture and its development is probably a topic of high interest to scientific research. Moreover, if one looks further, this might also mean that there is some kind of activity within the organic sector of that region that attracts scientists' attention and interest. This then again implies that there must be reasons and drivers for developments in that organic sector.

The incentives and obstacles identified in the 18 articles related are to be summarized in the following. In that way those factors that are to serve as a framework for the analysis of driving and inhibiting aspects of organic farming developments in China and Japan are to be determined in detail. A type of arrangement and categorization of drivers and barriers to organic farming is to be attempted concurrently, since it seems fundamental to analyze the country cases according to a systematic framework that is ordered by thematically similar fields rather than randomly assembled.

A good portion of scientists who deal with supporting factors attach value to the political environment regarding the most influential aspects on organic farming development. Michelsen, for example, claims that politics is a very powerful instrument for setting up regulations necessary for the healthy functioning of an organic farming sector. Furthermore, political authorities can grant organic farmers direct payments, loans, premiums, or grants and thus provide financial support. The third aspect politics can influence is the communication between the authorities and society. This can happen through the introduction of specialized institutions that provide assistance and information for organic farmers or merely interested individuals (Michelsen 2002; in: Stolze & Lampkin 2009: 239). The authors also point out that it is the responsibility of the government to establish national standards concerning organic production methods as well as general certification requirements. Political support should also include regular inspections of whether standards and certification requirements are met by making use of an appropriate institutional framework (Michelsen et al. 2001: 170 ff.). Wheeler agrees with Michelsen et al. and defines governmental policies as the most important driver for the expansion of organic farming. She also points out that political support should

mainly focus on promoting research and development in that area (Wheeler 2006: 14). Klonsky & Greene's article about organic farming in the United States, assents to Wheeler's statement about the importance of research funding by the government and adds that the legal stipulation of supporting guidelines is additionally significant (Klonsky & Greene 2005: 17 ff.). Also Stolze & Lampkin come to the conclusion that in the European Union agricultural policies favorable to biological farming and especially those directed towards research and organic product advocacy have proven most successful regarding organic sector development (Stolze & Lampkin 2009: 237). Padel et al. claim that it is most important to foster the belief in organic farming within society. One of the ways how to reach that goal is a precise policy by the government directed towards developing organic agriculture (Padel et al. 1999: 304 f.). Padel et al. also agree with Michelsen about financial incentives being a crucial aspect of such a policy (European Commission and National Agricultural Administrations; in: Padel et al. 1999: 308; 313).

Support of bio farming by the government is furthermore strongly suggested by Schmid et al., who introduce the concept of an *Organic Action Plan* as a national program encompassing certain duties political authorities should assume in order to facilitate organic agriculture development. These duties largely overlap with those mentioned above, as for example research support. Additionally the authors state that the integration of organic agriculture topics into education is an essential element in an OAP (Schmid et al 2008: 19). In general, spreading information about organic farming through school curricula and educational courses is a support strategy several authors and stakeholders agree on. Not only in the United States (USDA 2012: 6 ff.), but also in Austria (Rech & Tischler 2012: 32 ff.) and Germany (Nieberg & Kuhnert 2007: 97 ff.) topics concerning biological farming have been included into the education system both in schools and universities. National programs for organic sector support have been core agricultural development strategies in a number of countries. India's national organic program, for example, encompasses the government's duty to establish institutions that are in charge of certification, administration, and evaluation (India Department of Commerce 2001: 16) as well as research promotion (Garibay & Jyoti 2003: 33) and information availability (ibid.: 10 ff.).

A national action plan, which includes educating and informing the general public about biological farming and its benefits, is moreover suggested by Sarker et al. in an article

about organic agriculture in Bangladesh. According to the authors such a program would be of great importance to the development of Bangladesh's organic sector (Sarker et al. 2010: 45). For Leslie A. Duram politics, including certification and specialized organic action plans, also counts among the factors that foster organic farming expansion. She mentions education and research subsidies as equally important steps the government has to take to help develop the bio farming sector (Duram 2000: 40 ff.). The importance of political support for the expansion of a country's organic agriculture is furthermore stressed by Wheeler, who conducted a broad survey among agricultural experts in Australia, and concludes that the lack of government assistance is a strong barrier to a proper evolution of the organic sector (Wheeler 2008: 163 f.). Niemeyer & Lombard's article on inhibiting factors to organic farming development in South Africa affirms Wheeler's conclusion and thus also classifies political support as a factor that is essential for the active engagement in fostering growth in that very area (Niemeyer & Lombard 2003: 15). To sum up, the following keywords have been mentioned by researchers when mentioning political factors of organic farming support: national programs, regulations and policies, financial support, institutions that provide assistance and information (communication between authorities and society), certification, standards and institutions that supervise their implementation, laws, funding and promotion of research and development, education, and information.

Aside from support by the national government, economic aspects are also regarded as crucial for organic farming development by numerous researchers all over the world. However, economic circumstances cannot always be separated from politics, as the government interferes with market mechanisms in many cases. It is not only Michelsen et al. who claim that the economy, i.e. an existing market plays an important role in how agricultural sectors evolve (Michelsen et al. 2001: 172). Details about what market conditions favor the development of organic methods and products are discussed in a study about the market for organic products in selected European countries. In that text Michelsen et al. analyze market development according to several aspects. The factors examined in that report include general characteristics of national markets for organic products (Michelsen et al. 1999: i), sales channels that help to market organic produce (ibid.: ii), national standards and product ranges (ibid.: iii), ways of promoting organically produced foods (ibid.: iii f.), prices and premiums (ibid.: iv), markets for organic feed (ibid.: iv f.), and factors that foster long-term market development (ibid.: v).

A brief outline of which components exactly the authors look at concerning each factor is to be explained in the following.

Michelsen et al. found that the market share of organic products and the area cultivated with green methods are crucial to define a general market for organic products (ibid.: 12). As to sales channels, i.e. what kinds of localities sell organic products, the authors distinguish between little shops or farmers that focus on green produce and common supermarkets that incorporate a certain portion of bio products into their product line (ibid.: 28). Concerning bio products and national standards, Michelsen et al. mention that organic market development depends on the certification system of a country, and what standards are defined, but also how many types of biological products there are (ibid.: 51 f.). According to the authors the promotion of green farming is another aspect that fosters the development of a market for organic products. The promotion of such products can take different forms. It can either take place in supermarkets and shops directly, or in the context of advertisements on television, radio, internet, or in newspapers. In order to guarantee a proper promotion, responsible authorities have to ensure that organic labels are standardized and easy to understand. There are moreover different reasons to be put forward by supermarkets and retailers in order to advertise organic food, as for example health improvement, food safety or environmental protection (ibid.: 53 f.).

Michelsen et al. also point at a third way, namely the “indirect promotion” (Michelsen et al. 1999: 53) of green products. Such a way of promotion is happening rather due to food scandals and environmental problems. Concerns about these topics lead to consumers turning towards alternative nutrition, as for example biologically grown foods, which are considered less harmful than ordinary ones. The consumption of biologically grown produce, however, is not directly promoted in this case, as the term *promotion* implies intentional action. Changes in consumer behavior are unintentionally provoked by the above mentioned issues as well as by correspondent media reports as opposed to being stimulated actively by authorities (ibid.: 53).

The survey by Michelsen et al. revealed that in European countries it is mostly processing companies and associations that are responsible for the lion’s share of organic farming promotion (ibid.: 56). The authors also point out that considering prices and premiums is important when assessing the market development and economic surroundings for green prod-

ucts. Due to higher production costs and the consent among buyers to pay more for products generated by environmentally friendly means organic goods are usually sold at a higher price than regular ones. Those price premiums can vary as a result of various conditions, e.g. in its processing method or way of advertising among other factors. Moreover, differing revenues in different countries can also lead to a variation of price premiums, as consumers with a higher salary would rather be willing to pay premiums than those with a lower income. Michelsen et al. also suggest considering the amount of organically produced goods that are actually sold on the organic market. In some countries premiums might be rather low or certification processes too complicated and costly, so that it is not profitable for some farmers to sell their goods on the designated market. This aspect can influence prices of green products as some of them might have to be sold on general markets, where their price might even drop below that of conventional products due to their potentially less attractive appearance<sup>4</sup> (ibid.: 59 f.).

In order to assess the organic market development Michelsen et al. furthermore suggest giving a short glimpse into the market for organic fodder (ibid.: 73). According to IFOAM guidelines farmers have to feed their animals mainly with organic grain and crops for the sake of receiving proper organic certification (IFOAM 2006: 5.6.1.). Michelsen et al. found that in European countries markets for organic feed were relatively small in the 1990s, which might, for example, be due to a lower consumer interest in organic animal than plant products and a lack of prevailing standards concerning the breeding of organic farm animals<sup>5</sup> (Michelsen et al. 1999: 80). The fact that at present at least 50 % of feed has to be produced by the very farm that breeds the livestock or with the assistance of nearby farms (European Commission 2008: Section 3, Art. 19, Paragraph 1), also implies that the possibility of a proper development of a market for organic fodder is limited.

Finally, Michelsen et al. point out five aspects that foster the long-term development of a market for organic products. The first aspect, namely the marketing of green products

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<sup>4</sup> According to Michelsen et al. the quality of conventional products is largely assessed by consumers on the basis of their physical looks, how they are packed and how they taste, whereas green goods are rather expected to contribute to environmental protection and physical health (Michelsen et al. 1999: 46).

<sup>5</sup> However, the EU regulation of 2008 specifically demands organic feeding of organic livestock (European Commission 2008: Section 3, Art. 19, Paragraph 1).

seems to be most efficient when applied in supermarkets rather than in small shops specialized in organically manufactured goods (Michelsen et al. 1999: 85). International and national policy measures – the second aspect – can have a major impact on how an organic food market grows in the long run. However, for the authors it has proven difficult to measure the exact effects of those guidelines, which is why their assessment is rather based on results from interviews with professionals in this area of expertise (ibid.: 85). Actors, as for example farmers, farmer associations, certification agencies, organic movements or advertising companies are the third aspect to influence the long-term development of organic markets. According to the authors three driving forces, namely supply, demand, and subsidies make up the fourth aspect having an impact on market development. It is thereby important for the three factors to be balanced and interacting rather than one being dominant (ibid.: 93 ff.). As a fifth aspect the authors mention those factors that hinder a successful long-term market development. An unstable supply of bio products based on unfavorable climate conditions, for example, can lead to shortages, which then again has negative effects on the organic market. Furthermore, factors such as a complex and lengthy certification process or elaborate processing procedures belong to those obstructing a fluent market development (ibid.: 100 ff.).

The preceding text by Michelsen et al. essentially summarizes the economic factors mentioned by several authors concerning what market conditions favor a positive development of organic farming. Not only did Wheeler, who conducted a survey in 60 countries, come to the conclusion that market mechanisms, the integration and advertisement of organic products in supermarkets are essential to support the development of the organic sector (Wheeler 2006: 14). She also revealed that in Australia, as expected, the lack of a real organic market, for example, represented one of the barriers to organic farming development (Wheeler 2008: 163 f.). Also Niemeyer & Lombard agree that if a country lacks market opportunities for green goods, the development of that sector is likely to remain static (Niemeyer & Lombard 2003: 15). Rech & Tischler mention that part of the success of Austria's organic sector is based on favorable economic circumstances, which for example includes positioning green products into regular supermarkets at tolerable prices (Rech & Tischler 2012: 32 ff.). In summary, central terms regarding economic support for organic farming have been the following: general characteristics of markets for organic products, sales channels, product ranges, promotion, prices and premiums, and market for organic feed.

The third main pre-condition many researchers mention when talking about supporting and inhibiting factors of organic farming is support within society. For Michelsen et al. an organically-minded community is essential for biological agriculture to develop. If a suitable platform can be created for that community, exchange and interaction between the individual stakeholders would take place and give room for new ideas or mutual advice and thus promote organic methods. Specialized institutions or counseling agencies are examples of such platforms (Michelsen et al. 170 ff.). In some countries NGOs already play an important role regarding the promotion of organic agriculture. Thailand is an example where such organizations support organic projects and help implementing them (Rattanasuteerakul & Thapa 2009: 59 f.). As has been mentioned earlier in the text, NGOs in India are majorly involved in supporting the national government's intention to expand organic farming throughout the country. They take on tasks such as organizing information and education events, assisting bio farmers in meeting requirements to keep organic certification labels, or providing advice to those who seek it (Garibay & Jyoti 2003: 11 ff.). Informing the general public about benefits of organic farming is in fact an idea that is advocated by many experts and has also become part of numerous countries' support programs for biological agriculture. Schmid et al., for example, claim that an OAP is only successful if enough people can be convinced that organic production has positive influences on their lives and is beneficial for the environment as well (Schmid et al 2008: 19). For Padel et al. the belief in organic farming by consumers and producers is a major pre-condition for the success of alternative farming methods. The authors point out that in order for that belief to develop changes within people's minds must occur. Organic farming must therefore be identified as a better and positive alternative to conventional methods based on the general understanding that the contemporary way of handling food crises and environmental problems is not sufficiently sustainable. Such changes of attitude within a society are largely dependent on information availability, among other factors (Padel et al. 1999: 304). Furthermore, even in countries in which organic farming is in its infancy, experts have realized that providing training and guidance counts among the most important support mechanisms for further development of the bio farming sector.

Having conducted a study among Bangladeshi farmers on triggers for a possible conversion from general to alternative farming methods, Sarker et al. discovered that the positive attitude towards organic farming was one of the most decisive factors for them. The authors thus recommend spreading information about the positive effects of green farming methods

by launching nation-wide programs that would teach the general public about sustainable agriculture (Sarker et al. 2010: 45). In countries that have already adopted organic farming to a certain extent, such as Austria, the awareness of the advantages of such farming methods or at least the perception about biological agriculture in general has rather successfully reached the whole range of social classes. Through the promotion of organic products in supermarket chains and discount stores, for instance, members of the lower classes of society have also received the chance to become acquainted with bio vegetables, meat, fruit, or dairy products (Rech & Tischler 2012: 32 ff.).

In Germany the authorities attached importance to supporting the organic farming sector also by awarding an annual prize to those farmers who help to advance the sector in the most notable way. This gesture appeals to the bio farmers' motivation and thus strengthens their belief in their work and besides the positive image of organic agriculture among the general public (Nieberg & Kuhnert 2007: 97 ff.). According to Larsson et al. external happenings influence consumer behavior massively. Regarding organic farming the main driver in the European Union has been health issues and environmental considerations that have gained more attention by consumers in recent years, as society has moved towards being more conservation-conscious and attentive to their nutrition. The authors also point at the fact that farmer unions can have a positive effect on the organic sector's development as they represent organic farmers' interests. If granted enough influence, unions can arrange for certain farmer demands to be realized and thus contribute to a rapid progress of organic farming methods (Larsson et al. 2013: 9). Especially in Austria organic farmer unions play a big role, as they provide practical guidance and information on how to convert from general farming methods to alternative ones and thus represent a drop-in center for various concerns (Rech & Tischler 2012: 39). To sum up, concepts that are mentioned by researchers as supporting organic farming development through society include attitudes, beliefs and involvement in society, organic community, NGOs, counseling agencies, information and education events, promotion of organic products in supermarkets, rewards and prizes, and unions.

In the course of reviewing the individual supporting and inhibiting factors to organic farming development in diverse regions it became clear that the researchers roughly agree on a small number of general areas that mainly influence the development of alternative farming methods. These areas are: politics, economic circumstances, and social factors.

The three areas are thus to be the central criteria forming the theoretical framework for the analysis of the organic farming sector development in China and Japan. However, as has been elaborated, there are numerous sub-criteria that can be related to each central category for the purpose of maintaining a clear system. These are to be the main examination points in the analytical part of this thesis.

Furthermore, this thesis will not cover all sub-criteria with the same thoroughness. This is due to the fact that a few factors are not measurable and cannot be evaluated adequately merely through literature research. Some sub-criteria, especially those regarding a supportive attitude towards organic farming within society, would have to be examined through separate field studies, which would exceed the feasible realm of this paper. In order to analyze those criteria in depth, extensive surveys would have to be conducted among Chinese and Japanese consumers as well as in supermarkets. For example, data on attitudes towards bio growing methods or changes within people's minds about organic farming would have to be gathered through interviewing individuals from different ages, backgrounds, and areas in order to be able to provide realistic statistics. This may, however, remain subject to further research. In order to provide the broadest possible picture of organic farming support in China and Japan these factors will nevertheless be looked at, although the findings may not be based on substantiated scientific sources. Examining these sub-criteria might be an interesting supplement to support a broader impression about the organic farming sector in China and in Japan. The support factors that will not be examined in depth and will be summarized under the heading *social factors* are: non-governmental actors, motivation of organic farmers through rewards and prizes, consumers of organics, and promotion of organic products.

Moreover, the three main criteria, i.e. politics, economic circumstances, and social factors, are not to be regarded as completely separate areas but as having blurred boundaries. As has become apparent, several of the sub-criteria can be attributed to more than one main criterion at the same time, which suggests that politics, economy, and society overlap in parts and are interdependent as well. In some situations the support of at least two areas might be needed in order to reach a certain goal. For example, if consumer awareness of the benefits of bio products is to be encouraged, political authorities might integrate organic farming topics into the education system, which leads to the provision of information that is then ideally spread

further among society. Consumer awareness can thus be attributed to both political and social support.

For a clear outline of the main influential factors of organic farming development and correspondent sub-criteria please see Table 5. For the sake of completeness the table includes all supporting elements found and, due to the reasons mentioned above, individual factors appear more than once. In this paper's analysis, however, thematically similar factors will be merged in order to avoid repetition.

The single research criteria examined in the analytical part of this paper are thus the following:

#### Politics

- > National guidelines
- > Financial support
- > Official authorities that provide assistance and information
- > Certification
- > Labeling
- > Laws and standards
- > Funding and promotion of research and development
- > Education and information

#### Economic Circumstances

- > Market for organic products and organic feed
- > Sales channels
- > Price premiums

#### Social Factors

- > Non-governmental actors
- > Motivation of organic farmers through rewards and prizes
- > Consumers of organics
- > Promotion of organic products

#### Barriers

| Politics                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Economic Circumstances                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                     | Social Factors                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>National program; regulations and policies</b></p> <p><b>Financial support</b></p> <ul style="list-style-type: none"> <li>▪ direct payments</li> <li>▪ loans</li> <li>▪ premiums</li> <li>▪ grants</li> </ul> <p><b>Communication between authorities and society</b></p> <ul style="list-style-type: none"> <li>▪ institutions that provide assistance and information</li> </ul> <p><b>National certification and labeling</b></p> <p><b>Laws and standards</b></p> <p><b>Appropriate institutional framework</b></p> <p><b>Funding and promotion of research and development</b></p> <p><b>Education and information</b></p> <p><b>Barriers</b></p> | <p><b>General characteristics of national markets for organic products</b></p> <ul style="list-style-type: none"> <li>▪ Market share</li> <li>▪ Organically cultivated area</li> </ul> <p><b>Sales channels</b></p> <ul style="list-style-type: none"> <li>▪ Little shops/ farmers</li> <li>▪ Common supermarkets</li> </ul> <p><b>National standards and product ranges</b></p> <ul style="list-style-type: none"> <li>▪ Certification system</li> <li>▪ Standards</li> <li>▪ Types of bio products</li> </ul> <p><b>Promotion</b></p> <ul style="list-style-type: none"> <li>▪ Supermarkets/shops</li> <li>▪ Media advertisement</li> <li>▪ Easily understandable organic labels</li> <li>▪ Arguments why to buy organic goods</li> <li>▪ Indirect promotion</li> </ul> <p><b>Prices and premiums</b></p> <p><b>Market for organic feed</b></p> | <p><b>Factors fostering long-term market development</b></p> <ul style="list-style-type: none"> <li>▪ Marketing of organic goods</li> <li>▪ Policy measures</li> <li>▪ Actors (farmers, farmer associations, certification agencies, organic movements, advertising companies)</li> <li>▪ Supply, demand, subsidies</li> <li>▪ Obstacles</li> </ul> | <p><b>Attitudes and involvement in society</b></p> <ul style="list-style-type: none"> <li>▪ changes within people's minds</li> <li>▪ organic farming as an alternative to status quo</li> <li>▪ drivers of attitudes (e.g. health and environmental concerns, positive aspects of organic products)</li> </ul> <p><b>Organic community</b></p> <ul style="list-style-type: none"> <li>▪ platform for new ideas, mutual advice, exchange and interaction</li> </ul> <p><b>Counseling agencies and NGOs</b></p> <p><b>Information and education</b></p> <ul style="list-style-type: none"> <li>▪ information availability</li> <li>▪ assistance and information about benefits of organic farming</li> <li>▪ training and guidance</li> </ul> <p><b>Organic promotion</b></p> <p><b>Contests as motivators</b></p> <p><b>Unions</b></p> |

**Table 5.** Aspects that influence organic farming development (own elaboration)

### 3. ANALYSIS

#### 3.1 CHINA

##### 3.1.1 Politics

###### National Guidelines

Since the last decades of the 20th century the Chinese government has pointed out ecological agriculture as one topic among several that support a sustainable development of the country.

This movement began roughly in the 1980s when the concept of more environmentally-friendly farming methods came up. It was then when China's State Council initiated a conference on environmental protection and announced that the current agriculture should be directed towards one that reduces soil pollution and fosters deeper consideration of environmentally-friendly farming technology. Therefore the State Council encouraged the cooperation between environmental organizations and government departments (Ross 1988; in: Tian 2003: 199).

In the 1990s agriculture that protects the environment instead of exploiting it, it is, for example, mentioned in the white paper *China's Agenda 21*, in which it counts as one of the major goals China's decision-makers want to achieve [own transl.] (State Council of the People's Republic of China 1994: Art. 11, Paragraph 32). Yet, especially in the first decade of the 21st century, alternative farming methods became part of official government programs. One of these was the *Program of Action for Sustainable Development in China in the Early 21st Century*, which was released in 2003 and included a paragraph particularly about the encouragement of biological agriculture. According to the program specific laws should be enacted that regulate eco-farming in order to ensure the preservation of existing natural areas and support the most environmentally protective methods possible dealing with these resources. Moreover, a special focus is to be put on preliminary models to evaluate which eco-farming methods are suitable for which areas and what situation. Farmers that would be willing to terminate utilizing synthetic insecticides and fertilizers are to be supported thoroughly so that a solid base of green agricultural food supply can be guaranteed. For the development of a comprehensive eco-management scheme decision-makers and key players should also concentrate on formulating clear guidelines, standards and evaluation systems [own transl.]

(State Development and Reform Commission 2003: Art. 4). In 2004 a document, namely the *Perspectives of the Ministry of Commerce, the Ministry of Science and Technology, the Ministry of Finance, the Ministry of Railways, the Ministry of Transport, the Ministry of Health, the State Administration for Industry and Commerce, the General Administration of Quality Supervision, Inspection and Quarantine, the Ministry of Environmental Protection, the Food and Drug Administration, and the Certification and Accreditation Administration on the Active Promotion of the Organic Food Sector Development* several Chinese ministries communicated five common ideas on how to support organic production and consumption. Main points included the strict supervision of standards, a reliable management of organic production conditions, stringent legal execution, development of organic food services as well as a market for such products, and a stronger cooperation between respective public departments [own transl.] (Ministry of Commerce 2004: Art. 1-5).

In 2008 the State Council, which is equal to the country's government [own transl.] (State Council of the People's Republic of China 2014), issued the *National 11th Five-Year Plan for Environmental Protection*, which underlined the urgent need of decision-makers becoming more active in preventing further expansion of problems created by environmental pollution [own transl.] (State Council of the People's Republic of China 2008: Art.3). Amongst others the document particularly advocates biological farming and mentions that in the future the government is to support organic food production strongly by furthering a solid foundation in that field [own transl.] (ibid.: Art 3, Paragraph 5).

China's currently most important development plan, namely the *12th Five-Year Plan*, which is formulated every five years and includes guidelines and goals for the country's future development, does not explicitly elaborate extensive support for organic agriculture as one of the government's targets. Nevertheless, sustainable principles concerning environmental protection methods and methods aimed at agricultural development are part of this scheme. Article 3, for example, identifies conservation of natural resources and the protection of the environment as two of the plan's main objectives [own transl.] (National People's Congress of the People's Republic of China 2011: Art. 3). At the same time the document highlights the aim to modernize and develop China's agricultural sector [own transl.] (ibid.: Art. 4), to ensure the reliability of the country's crops, improve the quality of goods, support the construction of further irrigation systems, and develop a highly productive, high-quality, efficient, and ecological farming system. Moreover, a healthy development of forestry and produce from aquacultures is to be supported. The *12th Five-Year Plan* also encourages the installation of

public establishments for disease and pest control and for the supervision of product quality. The introduction of farmers' associations as a platform for professional guidance and mutual exchange of experience is furthermore one of the factors to foster agricultural modernization [own transl.] (ibid.: Art. 5). The plan likewise promotes the reduction of environmental pollution, especially in terms of pesticide and chemical fertilizer control, clean water management, and the supervision of minimizing soil contamination. Additionally, negative impacts of industrial and metropolitan pollution on rural areas should be strictly prohibited [own transl.] (ibid.: Art. 7).

However, according to a report about organic agriculture in China, which was partly funded by the EU and published in 2008, China has not succeeded in formulating a general national policy particularly directed towards the support of biological farming in the country (EU-China Trade Project 2008: 11). A fundamental support for organic farming projects has rather been realized by local governments (ibid.). It is mostly the economically stable and rather wealthy areas in China's east and south that have promoted the realization of individual green farming programs. And even though the Chinese government has not yet issued a national support policy for organic farming, according to Feng et al. a generally approving view on the topic is evident, since there are a number of little projects concerning alternative agriculture development that have been funded by the central government (Feng et al. 2005; in: Qiao 2011: 134).

### Financial Support

To begin with, Chinese organic farming projects were mainly supported by trading and processing firms, both international and domestic. Investing in and supporting organic agriculture was becoming an issue particularly for Chinese companies after the country had become part of international markets. New business possibilities led to a growing interest with trading companies, both public and private, to get involved in exporting diverse products. And as demand for organic goods in Western countries increased in the 1990s, Chinese firms began selling organically grown tea to Europe and the U.S. and thus played a major part in the development of China's organic sector (International Trade Centre 2011: 1). These companies contract with local farmers and collectives and provide the capital to run the farms. In many cases such businesses are producers of bio-fertilizers or other means of production, which they also provide as a support for their organic contract partners. While the farmers are required to produce organic goods that correspond to ecological standards, the companies then arrange for packing, storage, and distribution of the products (Sternfeld 2009: 3).

According to Egelyng et al. the Chinese national government does not provide direct financial support for organic agriculture. However, in some provinces local authorities give monetary subsidies to biological farmers by paying for fees that arise for certification (Egelyng et al. 2013: 211). In most cases such financial assistance is currently directed towards big projects. Families or small communities that decide to pursue alternative farming methods thus do not have the opportunity yet to receive benefits of specialized financial support, which leads to small-scale organic farming still being limited in China. At present only farms that own an organically cultivated area of at least 6.7 hectares qualify for grants. The majority of little family farms dispose of smaller farm areas (Cheng & Shi 2014: 142).

An example of financial subsidies by local governments is the support scheme for organic farmers situated around Beijing initiated by the city's municipal government during the period of the Olympic Games in 2008. According to the program, all Olympic athletes were supposed to receive healthy food during their stay in China. Therefore organic farms were given tax reductions and could receive payments to cover certification costs (Sternfeld 2009: 4). Another example is a financing scheme offered by the local government in Shanghai. Within the framework of this initiative biological farming entities can receive organic fertilizers produced by firms in Shanghai, which is refunded by the local authorities. The city of Shanghai moreover provides reimbursements to organic enterprises and farmers for special lamps that are equipped with solar cells and are a biological tool designed to keep off insects. (EU-China Trade Project 2008: 5).

#### Official Authorities that Provide Assistance and Information

In China, those farmers who aim to convert from general to organic farming do not have the possibility to receive assistance and information on how to do so with any governmental bodies, as consulting services are not offered by public institutions. The Chinese government furthermore does not support counseling facilities in the organic farming sector with any public money (Qiao 2011: 135).

It is rather companies and agricultural research centers founded by universities that function as consulting institutions for farmers, as for example the *Nanjing Global Organic Food Research & Consulting Center* (OFRC). It was established under the auspices of Nanjing Agricultural University (Qiao, Y. 2010) in 1999 and since then offers assistance for companies, farms and international clients concerning organic production, technology, and certification. For that purpose OFRC employs professors as well as researchers and counselors from China and other countries (Nanjing Global Organic Food Research & Consulting Center

(OFRC) 2006). Another example of such a consulting company for organic farming advice is *Dalian Swift Information Consulting Service Ltd., Co.* Similar as the OFRC, it offers information for the initial needs of organic farming, and further steps, such as trading and processing. Yet, according to Egelyng et al. companies are the major customers for this consulting center in Dalian, whereas individual farmers are not mentioned (Egelyng et al. 2013: 213).

Farmers who have already acquired the necessary knowledge about how to convert to organic methods and how to cultivate biological vegetables or breed biological livestock, as well as eco-firms that need management advice, have the possibility to turn towards consulting agencies specializing on anything needed to properly run a business. *Agrachina* is an example for such an enterprise, as it offers business support services especially for organic farmers or processing companies in the bio-farming sector. Services include consulting in terms of accounting, business relations, or information technology advice (Agrachina 2014).

Furthermore, there are also little private enterprises that serve as a type of consulting facilities for people interested in organic farming. Such as *Shared Harvest*, which is a company working according to Community Supported Agriculture (CSA)<sup>6</sup> principles. The firm functions as an intermediary between locals and local organic farmers and tries to bring them together in order to become active in shared biological farming. Moreover, *Shared Harvest* itself cooperates with educational facilities amongst others that buy organic goods from the company or provides day tours for students who learn about organic farming (Shared Harvest 2013). Just as this organic enterprise, there are similar models in the country, as for example *Little Donkey Farm* close to Beijing. Aside from the regular function of a CSA farm founded in cooperation of two universities, it also offers interested citizens to visit the farm and take part in related information activities and active participation events. There is an internship program *Little Donkey Farm* operates in addition, which provides young people with the necessary knowledge about organic farming. It appears that a number of former interns have initiated their own organic farming projects after their internships at the farm (Shi et al. 2011: 553 ff.).

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<sup>6</sup> Community Supported Agriculture is a farming concept introduced in the 1980s in the United States. Within this scheme an organic farmer makes an agreement with a number of people about dividing costs and outcomes of his field. Per season each member is obliged to periodically buy a pre-determined amount of vegetables from the farmer, so that he does not have to struggle finding customers. Additionally, the farmer does not have to borrow capital from banks in order to pay for seeds and other items to start the growing process, as the people who take part in the agreement are also responsible to pay for such costs up-front, including the farmer's hours of work. In that way both sides share wins and losses and it is not only up to the farmer to compensate for a poor harvest. Moreover, CSA creates an opportunity for locals to support small-scale farms (Fieldhouse 1996: 43).

However, activists in the field of CSA programs have expressed concern about the government's toleration of their farming arrangements. Although a number of national and international non-profit organizations and especially universities are active supporters of *Little Donkey Farm*, for example, confusion about the duration of land tenancy, which lies in the hands of public authorities, exists among CSA supporters in China. It is consistently unclear whether farmers within organic CSA projects will in the future be authorized to make use of the land they currently grow their vegetables on. Additionally, the fact that there are communities which are practicing alternative methods of food production may indirectly communicate protest against conventionally grown food and may thus be regarded as disapproval of the central government's way of food supply for Chinese citizens (ibid.: 556).

Aside from companies and centers that provide consulting services, there are also examples of citizens that try to support organic farming development by counseling interested farmers or introducing the topic of alternative farming methods to individuals who have never heard of the subject. As Patrick Scally reported in an article in *Chinadialogue*, a bilingual non-profit website that mainly provides news about current environmental issues, Li Yuan, a journalist in Yunnan Province has dedicated herself to the promotion of organic agriculture. By launching group excursions to rural sites where biological farming is practiced, she offers citizens the possibility to learn about green agriculture. By now she has established her own consulting center in Kunming assisting people from the city to grow vegetables without the use of chemical fertilizers and has initiated an educational film about the topic (Scally 2014).

Chinese citizens and farmers that are interested in organic agriculture can also find some information and assistance on Chinese websites dealing with green farming methods. *Organic Farming Web China* (中国有机农业网) is an example for a platform that offers news about organic growing, technology, trade fairs, certification requirements, or laws. One can also find detailed organic growing instructions for particular vegetable types, as for example cilantro, beans, or garlic [own transl.] (Organic Farming Web China 2014).

### Certification

According to a study by the IFOAM, certification standards are one of the top priorities of decision-makers in the Chinese organic farming sector. A large portion of the sector's development has only happened due to this set of defined standards and it is considered as one of the tightest certification schemes worldwide (Källander & Rundgren 2008: 14). There are about 26 national certification bodies for organic products, among which some are connected

to agricultural universities, some are private institutions, and some are connected to government authorities. Among these there are four certification agencies that appear most prominent, namely the *China Organic Food Certification Center* (COFCC), the *Organic Tea Research and Development Center* (OTRDC), the *Organic Food Development and Certification Center* (OFDC), and the *Wantai Quality Certification Co. Ltd.* (WIT) (EU-China Trade Project 2008: 26). Besides, there are governmental authorities, such as the *Certification and Accreditation Administration of the People's Republic of China* (CNCA), that officially authorize and accredit these certification bodies before these are entitled to perform any certification inspections and labeling of organic produce (ibid.: 22).

The approval before the actual accreditation – the first of two authorization steps – is mainly conducted by the CNCA, a sub-organization of the *General Administration of Quality Supervision, Inspection and Quarantine* (AQSIQ), which is an institution with ministry-like competences. This step, which lasts around three months, requires the inspection of certain requirements stated in the *Regulations of the People's Republic of China on Certification and Accreditation*, a general document that is not particularly valid only in the organic farming sector, but binding for any type of certification activity in China (ibid.). The applying institution must, for example, have a certain amount of assets, employees on site, technology, and compulsory establishments at its disposal [own transl.] (State Council of the People's Republic of China 2003: Chapter 2; Art. 10). For those institutions that are applicants from other countries than China, identical requirements must be met; however, additionally they have to be approved certification bodies within their country of origin and prove three years of certification practice [own transl.] (ibid.: Art. 11).

CNCA is moreover responsible for periodical checks on the certification institutions and the organic farms that had been authenticated by the respective institution. Included in these regular inspections by the CNCA are evaluation documents that have to be presented every month and every year by the certification body containing information about newly certified farms, postponed and abandoned certification processes. In addition, all significant modifications regarding a farm's condition, such as relocation, must be forwarded to the CNCA by the certification body at once (EU-China Trade Project 2008: 24). The second step an institution applying for the accreditation as a certification body has to go through is an examination process that can take up to six months. During this check the applicant's capability to perform proper certification of organic farms is verified by the *China National Accreditation Services for Conformity Assessment* (CNAS), which is an institution affiliated with the

CNCA. If the application is successful and a new certification body is thus authorized, it is permitted to certify organic farms for a period of three years – in case of being a non-Chinese institution, for four years – and has to reapply for an extension of the certification license in order to continue its work. As to foreign certification agencies that are accredited in China, three types of enterprises are tolerated, namely foreign-Chinese joint-venture certification institutions, entirely foreign companies, as well as firms that sign sub-contracts with Chinese certification facilities (ibid.: 23).

Certification bodies can only appoint officially authorized personnel to perform examinations and the final certification of bio-farms. These inspectors receive a detailed course of instruction followed by explicit tests. All this is performed and prepared by the *China Certification and Accreditation Association* (CCAA), which is a sub-department of the CNCA, just as the CNAS (ibid.: 24).

However, a report by the EU-funded *EU-China Trade Project* (EU-China Trade Project 2008) revealed that despite the detailed allocation of competences there are a number of insufficiencies within China's certification scheme. It appears that a certain amount of certification institutions have completed the first step towards authorization but, while waiting for the second step to be terminated, are believed to give out certificates to agricultural entities without the official license. Such impressions do naturally not support an image of reliable, safe and properly labeled organic products from China. Additionally, the report criticizes the apparent lack of a sufficient number of authorized inspectors for organic farm checks.

The rules according to which organic certificates are issued were written down in three official documents in 2005. These are the *Administrative Measures on Organic Certification Management*, the *China National Standard for Organic Products*, and the *Implementation Rules for Organic Product Certification* (ibid.: 29 f.). Details about the contents of these regulations are to be explained later in this work. Moreover, in the second decade of the 21st century the People's Republic introduced stricter rules for organic certification. In order to eliminate corruption and other illegal activities and to raise general trust in Chinese organic certificates the amount of requirements to be granted an organic label has increased and also the inspection guidelines have become more tight (Wai 2013: 178 f.)

There are certain procedures and steps generally performed by most certification bodies when inspecting farms and deciding on granting them organic certificates. However, each

certifying institution is authorized to demand extra proceedings that other agencies might not require. The OFDC, for example, proceeds as follows.

After the applicant has approached the OFDC with a request to start the certification process, a document with questions about the farm's or company's production conditions is sent to the applicant by the certification body. The filled-out form is then explicitly evaluated by the OFDC concerning the farm's capability to convert to organic methods. Any suggestions on how the farm or company should change in order to meet certification requirements have to be put into action by the applicant, who, after having completed alterations, is to announce these to the OFDC. After that the certification body assigns inspecting personnel to the farm. The inspectors are to verify the changes and check the farm's suitability for organic production once again. This procedure may be repeated twice and in case of not presenting satisfactory conditions even then, the farm's application is to be declined. If, on the contrary, the applying establishment succeeds by demonstrating adequate prerequisites it will be granted the organic license. At last, the OFDC will also examine the crops or vegetables in the harvest season in order to determine whether they are pesticide-free (*ibid.*: 32).

The cost the applying farm or enterprise has to pay for such a certification procedure including the final license is around 10,000 Renminbi, which at present is equal to about 1,600 USD. However, the price for the procedure depends on the size of the farm. The costs of obligatory inspections and re-issuing of the organic certificate after a fixed period of time are somewhat lower than the initial certification costs. The duration period for the organic license is determined by the certification institution, with the utmost license durability being twelve months. For an extension of the organic certificate the farm including all related facilities, as for example offices, processing establishments or fields, has to undergo another inspection by the certification body's official sensors. The organic production site moreover has to provide product specimen and samples of planting ground and underground water. The certification experts check the samples in terms of chemical residues and contamination. Production sites that are located close to areas suffering from a high degree of soil or air pollution will have more frequent testing procedures than those in regions far-off from hazardous localities. In order to ensure product safety for consumers as well as credibility of the certification body, inspection experts may visit certified farms at any time (*ibid.*: 32 f.).

Furthermore, a number of international guidelines<sup>7</sup> for organic certification are utilized by non-Chinese certification institutions when giving out organic licenses and performing production site inspections (ibid.: 33).

The fact that one organic producer may be granted more than one certificate should be mentioned at this point. This is due to reasons such as one enterprise owning farmland that is locally separated as opposed to being close together, which is why each plot of land has to be certified independently. The different sites may also be in separate stages of conversion. The certifier will then grant regular organic licenses for sites that have completed all required conversion steps, whereas products from plots that have not fulfilled every step will be given a label indicating that they are currently in the middle of the conversion process. Furthermore, one farm may produce different types of organic goods at the same time, e.g. livestock and vegetables (EU-China Trade Project 2008: 34).

### Labeling

The People's Republic of China defines three basic levels of healthy food, namely Hazard-Free Food (无公害食品), Green Food (绿色食品), and Organic Food (有机食品). For each of these categories certification institutions have established separate labels. The *Center for Agri-Food Quality and Safety* and the *China Green Food Development Center* (CGFDC), two departments within the Chinese Ministry of Agriculture (MoA), are in charge of handling the former two labels (EU-China Trade Project 2008: 5). The latter category, i.e. Organic Food is managed by the CNCA and its accredited institutions that issue the organic certificates. However, at a glance the general overview of China's certification system and food labels has proven to be rather confusing (Sternfeld 2009: 6 f.).

Hazard-Free products have been marked as such by the MoA since 2002 and comply with basic Chinese food standards (ibid.). All food that has the minimum requirement of being safe for consumers to eat and not posing any threat to people's health is certified with the label of Hazard-Free Food (China Food Safety Strategy Research Group of Development Research Center of the State Council 2005; in: OECD 2005: 218). In the first decade of the 21st century 24 % of China's farmland for vegetables, fruits and crops and more than 23,000 goods were officially marked as being hazard-free (EU-China Trade Project 2008: 5).

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<sup>7</sup> The *European Union Organic Standard*, the guidelines from the *National Organic Program of the United States*, and the *Japanese Agriculture Standard* are the most prominent documents utilized for that purpose (EU-China Trade Project 2008: 33).

Green Food has been granted official labels since the 1990s by the CGFDC. According to the three-level certification scheme Green Food is the category that is one degree above Hazard-Free Food, when looking at food quality and amount of chemical residues. Products that are labeled with the Green Food certificate are partly treated according to biological methods. This means that chemicals may be utilized on Green foods, but only in a reduced manner and only up to exactly regulated maximum extents (Sternfeld 2009: 6). The use of extremely toxic chemicals is entirely forbidden for products with the Green Food label. Moreover, water that is used during the growing process of plants has to be free of harmful substances such as lead or mercury and has to be as clean as drinking water. Certificates for this food category are under the management of the CGFDC for the duration of three years and farmlands and products are examined periodically, even during the time the label is guaranteed. The CGFDC authorizes selected organizations to perform all steps of making inspections and granting Green Food labels (OECD 2005: 218). Later on, the Green Food certificate was split up into two sub-categories, namely Green Food A and Green Food AA. As opposed to food with Grade A, AA Green Food has similar requirements as organic food. Producers and processors of goods graded AA have to be marked on the product, so that they can be localized at any time. Additionally, artificial fertilizers and pesticides are prohibited to be utilized on AA graded food (Giovannucci 2005: 12).

Another food certificate worth mentioning, as it has appeared during the research for this paper several times, is the GAP certificate. It is handed out by about a dozen certification bodies, e.g. WIT which was mentioned above, and requires testing of the production procedure, however, not of any further processing of the agricultural goods. Just as under the Green Food AA certificate the GAP label is issued for products that are treated with a lowered amount of artificial substances. The certificate focuses on risk-free food production that is based on principles such as fair employment conditions, natural environment preservation and ethical treatment of farm animals (International Trade Centre 2014a).

Regarding consumers' food expectations in terms of product safety and lack of risk Organic Food is located at the top level of China's certification pattern. The COFCC is one of the certification bodies that have been issuing labels for organic products. In 2002 the COFCC launched the bio certificate, which is basically what the CGFDC's AA Green Food certificate had been until then. At the end of the first decade of the 21st century COFCC had already certified 30 % of all organic programs and thus counts as one of the major certifiers. COFCC uses combined standards from domestic and international institutions, such as the CGFDC, the European Union, the United States, Japan, and the IFOAM as a basis for their

certification guidelines. Organic tea has mainly been tested and certified by the OTRDC, which is a certification body specialized on this area (Sternfeld 2009: 6 f.). The OFDC is another certification body operating in the organic products sector. Organic labeling done by the OFDC is based on principles consisting of a combination of rules from the *China National Standard for Organic Products* as well as guidelines established by the IFOAM and own OFDC standards. Standards by the OFDC are designed to regulate each production and processing stage a bio product has to go through – from the initial manufacturing to the final placing on the market. Moreover, the OFDC attaches importance to a consistent report of all those stages and reserves its inspectors the right to check on any product stage at any time (International Trade Centre 2014b).

In order to standardize the country's bio-certification scheme, the PRC introduced two new organic certificates along with the *China National Standard for Organic Products*, in 2005. These labels have from then on been used by most organic certifiers in addition to the certification body's own label. This means that if, for example, COFCC authorizes a farm for organic production, COFCC's organic label will be placed on the farm's products along with the nationally uniform new label. The first national label – brown in color, with the title *Conversion to Organic* in Chinese and English – may be used by producers that are in the middle of the conversion process, whereas the second label – green-colored and marked by the term *Organic* and the Chinese equivalent 中国有机食品 – identifies those organic facilities that are fully authorized. Japanese, American, and IFOAM criteria were used as models for this type of organic certification (Sternfeld 2009: 7 f.). However, the fact that the use of the label for products that are in conversion to proper organic certification has been prohibited by law since May 1st, 2014, should be mentioned at this point (Wai 2014: 167).

It is obvious that China tries to adapt its certification regulations to international standards, amongst other reasons, in order to smooth the path of Chinese organic products onto the world market and extend trade options. However, bio goods from the People's Republic usually are tested again according to trade partners' standards or internationally accepted standards, such as those from Japan, the United States or the European Union, before being exported. This means that Chinese standards have not yet taken root on the international platform. The re-testing is typically done by fully foreign or joint-venture certification institutions on Chinese grounds. In case of a Chinese exporting firm selling organic products to different countries the long-winded process of testing the products by each importer's own standards is not uncommon. These difficult exporting conditions for Chinese bio products have, in return, led to a stricter handling of imports of bio products from abroad. Furthermore,

Chinese authorities have introduced new guidelines for the establishment of foreign certifiers in China that have made it more difficult for those bodies to operate (ibid.: 8 f.).

For an overview of China's certificates of food with reduced amounts of chemicals and no chemicals see Figure 4 hereafter.

|                                                          |                                                                                                                                                                                                                                                            |
|----------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Labels for farm products with reduced chemical treatment |                                                                                        |
| Examples of individual organic labels                    |    |
| National organic labels                                  |                                                                                     |

**Figure 4.** Labels for Green Food and Organic Products in China (See China Green Food Development Center; Development and Service Center for Quality Farm Products 2014; Baïke 2014; Paull 2008: 4; Organic Food Development and Certification Center of China (OFDC) 2009: 10; Sternfeld 2009: 6)

## Laws and Standards

There are two levels of regulations that are relevant for certification in the Chinese organic farming sector. The first level of legal guidelines regulates the official authorization of institutions that perform inspection procedures and grant organic certificates, i.e. the *Regulations of the People's Republic of China on Certification and Accreditation* (EU-China Trade Project 2008: 22). The basic outline of the authorization of certification bodies has been illus-

trated previously in this text, whereas the following will focus on the second level of certification regulations, namely the defining rules domestic certification bodies are bound to when issuing organic certificates. The fact that internationally acknowledged regulations are also important for the export of Chinese organic products should moreover not be neglected.

As has been mentioned previously, there are three main legal documents that form the basis for organic certification by authorized certifiers in China, namely the *Administrative Measures on Organic Certification Management* (有机产品认证管理办法), the *Implementation Rules for Organic Product Certification* (有机产品认证实施规则), and the *China National Standard for Organic Products* (中国有机产品标准) (EU-China Trade Project 2008: 30). Their basic points are to be roughly illustrated hereafter.

The *Administrative Measures on Organic Certification Management* have been officially valid since 2005 and were formulated by the CNCA; however, they have been revised in 2013. The document is divided into seven paragraphs, namely *General Principles*, *Execution of Certification*, *Organic Product Import*, *Certification License and Label*, *Surveillance and Administration*, *Penalties*, and *Additional Statements*.

The first paragraph mentions that the principles of the document correspond with national laws, such as for example the *Law of the People's Republic of China on Import and Export Commodity Inspection* and that they have to be followed by every institution of the organic farming sector. Furthermore, competencies are clearly defined for administration and implementation of the law and terms used in the text are clarified [own transl.] (Certification and Accreditation Administration of the People's Republic of China 2013: Paragraph 1). The second paragraph determines the duty of all involved parties to be authorized, such as the certification body and the inspectors. Additionally, the time between the reception of a farm's application documents and the certification body's decision whether to approve of the application should not be longer than 10 days. If the application is rejected, the certifying institution has to convey exact reasons. Further steps, namely the need to pass on the applicant's general data, e.g. the name, to the CNCA and then assign an inspector to perform the farm audit are specified as well. The obligation of writing a report about the certification process and the auditing, which has to be archived for at least five years, is also highlighted in this chapter. Finally, the document says that a product that has been further processed can only be marked with the term *organic* if it consists of at least 95 % of organic components [own transl.] (ibid.: Paragraph 2).

The subsequent paragraph deals with rules for the import of organic products from other countries to China. Such goods may be imported only after having completed an inspection process of their organic certificate from the country of origin. This procedure includes, amongst other steps, the completion of application forms and detailed reports on the manufacturing process. Every document utilized for this process has to be available in Chinese as well. All reports related with the import of a product have to be presented to the CNCA. The institutions responsible for the inspection of goods coming into the country shall also perform checks on the imported organic products [own transl.] (ibid.: Paragraph 3). Paragraph 4 determines the certificate duration of one year with the need to reapply in order to keep the certificate. It also specifies the exact content of the certification document in Article 27 and the duty of the certified producer to report any major changes within the farm to the certification agency. Moreover, situations are noted in which an organic certificate should be adjourned or invalidated. The organic label is introduced in this part as well, which is the national label for organic products in Figure 4. Additionally each organic product is to be marked with a code in order to ensure traceability [own transl.] (ibid.: Paragraph 4).

Paragraph 5 deals with the institutions that should be involved in supervising organic certification. These institutions mainly include the certification bodies, the CNCA, and local government authorities. Moreover, the local authorities' duty to regularly inform organic producers and certifiers about any type of imminent threats, for example epidemic illnesses or environmental dangers [own transl.] (ibid.: Paragraph 5). The sixth part of this legal document defines penalty fines of up to 30,000 Renminbi – an amount equal to almost 5,000 USD – for different types of delinquencies concerning organic certification. The unauthorized use of organic labels, the issuing of certificates without proper inspection procedures, or unlawful business with biological labels are examples of such cases [own transl.] (ibid.: Paragraph 6). Complementary Paragraph 7 establishes the AQSIQ as the highest authority of organic certification and declares the previous version of the *Administrative Measures on Organic Certification Management* to be invalid and substituted by this new one from 2013 [own transl.] (ibid.: Paragraph 7).

Due to the fact that the most important guidelines for certification bodies have already been explained previously in this paper, these points will merely be touched on in the following paragraph about the *Implementation Rules for Organic Product Certification*. These are a set of regulations that define a framework for certification bodies on different administrative procedures [own transl.] (CNCA 2012: Paragraph 1). The document stipulates what the pre-

requisites for a certifier are in terms of the company's official authorization with the CNCA [own transl.] (ibid.: Paragraph 2) and qualifications for certifying personnel [own transl.] (ibid.: Paragraph 3), and how the certification procedure is to be conducted including details about the forms applicants have to fill out, and that reports about all the certification stages have to exist in written form. Additionally, the regulations demand drafted propositions prior to farm inspections and state how the inspections are to be carried out [own transl.] (ibid.: Paragraph 5). According to Paragraph 6, the certifier's work is not completed after granting the certificate, but has to be followed by further farm checks and the provision of information by the organic farmer about, for example, the production process [own transl.] (ibid.: Paragraph 6). Apart from details about situations in which a certificate is to be taken away from an organic farm [own transl.] (ibid.: Paragraph 8), the document also provides a model of the organic certificate and the certificate for farms that are in conversion, both in English and in Chinese (ibid.: Appendix 2). For the example of an organic product certificate see Appendix 5.

Finally, the main points of the *China National Standard for Organic Products* (NSOP) are to be summarized in the following. This is merely to be the display of essential features, which is why the focus will be on rules for crop cultivation and breeding of livestock and poultry. There are four chapters in the NSOP, namely *Manufacturing, Processing, Label and Sales*, and *Administration System*. The first part, which is the most extensive of the four, deals with prerequisites and principles of manufacturing of organic food products, namely "[...] crop cultivation, cultivation of edible mushrooms, wild plant collection, breeding of livestock and poultry, aquaculture, apiculture, and transportation, storage and packaging of these products" [own transl.] (Standardization Administration of the People's Republic of China 2005: Part 1, Chapter 1). According to the NSOP organic agriculture is officially defined as a type of farming that "[...] does not allow any utilization of products that have been genetically transformed, artificial manure, pesticides, substances that control natural plant or animal development, synthetic forage ingredients [...]" [own transl.] (ibid.: Chapter 3.1). Only farms that comply with certain quality standards for air, soil, and irrigation water and are located in areas whose environment is not affected by pollution from exhaust fumes and other substances that are harmful to nature, are taken into consideration for organic farming [own transl.] (ibid.: Chapter 4.1.2).

The duration for conversion from general to biological farming – the time when the label reading *Conversion to Organic* will be granted – lasts 12 to 36 months depending on what type of crop is planted. Fields with crops that live for more than two years, i.e. perennial

crops, require a conversion period of three years, whereas the conversion period of crops that only live for one year, i.e. annual plants, is two years. Only for farmland that is free of chemical residues e.g. due to having been fallow ground or because the farmers only grew crops according to pesticide-free traditional methods a conversion period of 12 months can be permitted [*own transl.*] (ibid.: Chapter 4.1.4). Moreover, if a farm practices conventional farming methods and biological farming methods at the same time, all grounds the organic livestock grazes on, all studs the animals are kept in, their fodder and the final products have to be strictly separated from those that belong to the conventional production of the farm. The same rule applies to other production categories, as for example vegetable growing or aquaculture. Moreover, if a farm produces two kinds of products at the same time, i.e. organic and standard, the NSOP also forbids the farmers to use genetically altered products [*own transl.*] (ibid.: Chapter 4.1.5; Chapter 4.1.6).

From the beginning the farmers are obligated to plant their crops from organic seeds or those that do not contain any chemical residues. In order to maintain the variety of organisms in one area and to prevent the natural environment from endangerment only plants that are native to the area should be cultivated and the farmers should also adopt nature-friendly methods, such as companion planting<sup>8</sup> and crop rotation<sup>9</sup> [*own transl.*] (ibid.: Chapter 4.2.1; 4.2.2). As to keep the farmland balanced in terms of sufficient nutrients, the use of biological fertilizer only is allowed. The fertilizer should not come from other farms, but always be from the same farm. Human feces may be used as fertilizers only in exceptional situations and only if they do not touch any part of the plant that is edible [*own transl.*] (ibid.: Chapter 4.2.3). Organic farmers may use certain types of materials, such as vinegar, soda or bee wax [*own transl.*] (ibid.: Annex B) to limit the occurrence of insects or undesired plants, although they are obliged to focus on methods that do not require any use of additional substances. They should, for example, plant crops that have a resistant nature, because they are native to that area or because the very seeds they are grown from are strong, or they may utilize lamps to attract insects [*own transl.*] (ibid.: Chapter 4.2.4). In the two subsequent chapters, the Nation-

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<sup>8</sup> Companion planting is a cultivation method of placing two different types of plants to grow in immediate proximity to each other in order to reach better yields for one or both of them. Some gardeners, for example, plant cucumbers and sunflowers next to each other, because due to the shade from the sunflowers, cucumbers seem to grow better. In return, cucumbers provide humidity for the sunflowers (McLaughlin 2009).

<sup>9</sup> Crop rotation is a cultivation system according to which on one field different types of crops are planted after two to three seasons. If a piece of land is cultivated using identical plants constantly the soil would become less fertile. The purpose of this farming method is that farmland is not exploited and run down by identical plant types every season, but instead maintains a certain balance of nutrients in the soil and thus decreases pest risks and additionally raises output (Baldwin 2006: 1).

al Standard describes how mushrooms should be grown with organic methods [*own transl.*] (ibid.: Chapter 5) and what areas are suitable for the collection of wild growing plants [*own transl.*] (ibid.: Chapter 6).

Chapter 7 deals with the transport of organic products, the places they are stored at, and how they are to be wrapped. Essentially important in these three situations is the strict separation of organic and conventional products. It is also obligatory not to place the bio-goods in any area with residues from regular food products, which means that any area that has served as a storage place or transportation means for those, has to be thoroughly cleaned thereafter. There are also directions on what materials may be used to wrap biologically grown foods; recyclable materials are generally to be prioritized [*own transl.*] (ibid.: Chapter 7).

The subsequent part deals with organic production of animal products. Similarly as with organic crops, there are also compulsory periods for conversion from generally bred to biologically bred animals, which can last from six to twelve months depending on the species and whether animals are bred for meat production or the production of eggs and milk. The conversion period applies for farmland that serves as grazing land as well [*own transl.*] (ibid.: Chapter 8.1). For farms that practice breeding of organic and conventional animal husbandry at the same time, comparable rules as those for parallel crop production apply. This means that organically and conventionally bred animals have to be separated entirely during all times [*own transl.*] (ibid.: Chapter 8.2). Bio-livestock and poultry have to be fed mainly with organically grown fodder, although exceptions are permitted under certain conditions. In exceptional situations up to 15 % of general feedstuff per year may be added to the organic fodder. Additionally, the use of feedstuff from the same farm the animals live on is encouraged and young animals are not permitted to be fed milk substitute. The National Standard also establishes minimum duration times for lactation depending on animal species [*own transl.*] (ibid.: Chapter 8.4). Chapter 8.6 describes the circumstances under which organic animals are to be kept in order to ensure species-appropriate keeping. This involves sufficient outdoor areas with enough space for the animals to take shelter, suitable studs, constantly enough food and water supply, strategies to keep off wild animals, and other measures [*own transl.*] (ibid.: Chapter 8.6).

So as to avoid the spreading of infections among the farm animals, preventive actions, for example healthy feedstuff and other measures that support the animals' immune system, are suggested. Besides, the areas bio-livestock are kept in should be cleaned and disinfected in

the animals' absence periodically. In the case of detecting poor health conditions among the animals, chemical-free treatment, such as homeopathy or Chinese Traditional Medicine, is permitted. Conventional therapeutic methods may be allowed if the above-mentioned steps do not provide sufficient amelioration. However, these animal products may not be sold as organic goods for a certain time period thereafter. The guidelines permit a basic inoculation of organically reared animals, although the farmer is obliged to be granted permission by local authorities beforehand. Moreover, any case of animal sickness or treatment of biologically bred livestock and poultry has to be documented in written form [*own transl.*] (ibid.: Chapter 8.7). Organic animal husbandry allows the farmer to ask a veterinarian to perform particular types of surgical operations that support physical health of the animals and prevent situations that may result in the animal's discomfort. Such operations, for example, include removing horns or surgical removal of testes, whereas certain procedures are illegal. This includes operations such as the clipping of animals' toes and beaks [*own transl.*] (ibid.: Chapter 8.8).

Furthermore, farm animals should be guaranteed natural conditions for reproduction primarily; however, auxiliary reproductive steps that do not modify the livestock's genetic makeup are permitted in some cases, whereas methods such as artificial insemination are prohibited [*own transl.*] (ibid.: Chapter 8.9). Slaughter of biologically reared animals is also subject to strict guidelines. The animals should be provided a pleasant environment which minimizes stress to the highest possible extent throughout the transport to the slaughterhouse, right before and during the slaughter process. They are to be kept entirely separated from animals that are being or have been slaughtered. With the exception of slaughtering according to particular religious rules, livestock and poultry has to be benumbed before slaughter. The whole process of transportation and slaughtering should take as little time as possible in order to ensure appropriate conditions. Therefore the farmer should choose the closest slaughterhouse to the farm [*own transl.*] (ibid.: Chapter 8.10).

Finally, the NSOP stipulates that a balance between farm animals and their environment is to be maintained, so that the pastures and meadows the animals stay on do not become overgrazed [*own transl.*] (ibid.: Chapter 8.11). The second part of the NSOP deals with the processing of organic goods. It sets up rules for the areas in which organic food processing, storage or packaging takes place. Cleanliness has to be maintained at all times to ensure that the localities and transportation vehicles are free of pathogenic organisms, waste, exhaust fumes and other hazardous materials. Furthermore, the processing company or farm may add certified organic materials only in order to assemble the final product. However, in exception-

al situations up to 5 % of non-organic additives may be permitted and one ingredient may only be utilized in a single version, i.e. either in the organic or conventional version. The final organic product has to contain the majority of its original nutrients, which means that the processing has to be performed in a way that does not eliminate these substances. The processing enterprise also has to make an effort to use the most efficient, plain and recyclable materials for wrapping the product for transport [own transl.] (Standardization Administration of the People's Republic of China 2005: Part 2, Chapter 4).

Part 3 of the NSOP defines certification and management guidelines for organic products. In the section about certification the frame conditions of proper labeling of products that have been manufactured with biological methods is determined. Images of the national organic labels are presented as well. The second section of Part 3 contains rules concerning ways in which organic goods are to be marketed. In a shop organic products may not be placed in between conventional ones, but have to be put together in a separate organic area. When green products are brought to the location they are to be sold at, the organic certificate has to be carried along for display to the seller, who is also required to hold a copy [own transl.] (Standardization Administration of the People's Republic of China 2005: Part 3). The fourth part of the NSOP defines administrative requirements for every facility or company involved in organic product manufacturing or processing. Amongst other points the document demands detailed records of every step an organic product undergoes before being purchased [own transl.] (Standardization Administration of the People's Republic of China 2005: Part 4, Chapter 4.2.6) and the development of a detailed map of the manufacturing facility [own transl.] (ibid.: Chapter 4.2.2).

### Funding and Promotion of Research and Development

International agencies have been the main actors in research and development funding for organic agriculture in China. Examples are the *International Fund for Agricultural Development*, the *German International Cooperation*, the *Asia-Pacific Economic Cooperation* (APEC), and the *International Centre of Research in Organic Food Systems*, which have been part of joint research projects. Additionally, mainly private companies and local authorities joined in the funding of research activities in the organic sector by universities and research facilities (Feng et al. 2005; in: Qiao 2011: 134 f.). However, research is also funded by the central government. The *National Natural Science Foundation of China*, which is an institution under the umbrella of the State Council, manages a fund for the support of research and development in natural sciences, including agriculture, crop and food science. Any education

or research facility that researches one of the topics covered by the fund may apply for financial subsidies (National Natural Science Foundation of China 2007). The CGFDC, which is under the jurisdiction of the MoA and mainly handles the Green Food label, also organizes events and workshops with Green Food as a topic. Such events include presentation, information and research (China Green Food Development Center 2015).

An example of an international research project jointly carried out by a foreign and a Chinese institution was one from 2008 to 2011 about how to recycle agricultural organic residues. It was funded by China's Ministry of Science and Technology and the German Federal Ministry of Education and Research. For the project experiments were conducted in different areas of China in order to research organic fertilizer, efficient use of manure, organic meat manufacturing and organic feeds (Institut für Angewandtes Stoffmanagement 2015).

Individual research and experimental sites in the form of pilot farms are also operated in China. One example is *Hongyi Organic Farm* in China's northeastern Shandong Province. It was founded by Jiang Gaoming, a professor of ecology in 2006 and has since then been a model farm for biological growing methods and thus serves as a center for research activities. Scientists from the *Shandong Eco-civilization Research Center* regularly use *Hongyi Farm* for their tests and studies. Additionally, experts from numerous countries as well as students have conducted on-site experiments regarding organic farming. The local government of Shandong Province and the *China Scientific Development Research Center* have provided funding for *Hongyi Organic Farm* (Hongyi Organic Farm 2011).

As indicated above, private trading and processing companies of organic products have become major drivers of research and development in China's organic sector. One example is the *China Dalian Xinglongken Organic Products Company*. Although the firm mainly engages in the manufacturing and processing of bio products, it cooperated with Northeast Agricultural University to found the *Organic Agriculture Research Institute*. This facility focuses on establishing the most efficient techniques of green farming on the farms of *Xinglongken Company* and improving them by finding the most adequate way of biological farm management (China Dalian Xinglongken Organic Products Company 2015).

### Education and Information

During the 1990s the integration of sustainable development and environmental issues into the education system was discussed by China's decision-makers. The initiative was fueled by discussions in the media, among experts and the general public about heavily pol-

luted water and soil in some parts of China. The Ministry of Education revised national school curricula at the beginning of the 21st century, which from then on stipulated that learning about the environment more thoroughly had to be part of every Chinese child's education. The new guidelines also resulted in the emergence of *Green Schools*, which will be evaluated later in this chapter. Diverse universities and colleges began to offer classes in environmental education so that teachers could be academically trained in conveying well-founded knowledge. At the same time new textbooks were published, which include environmental topics addressed in biology, science and language classes (Lin & Ross 2005: 74 f.).

The concept of so-called *Green Schools* is a relatively new trend in China, which is supported by the work of non-governmental organizations, but initiated by the *State Environmental Protection Agency* (SEPA), which is now the Ministry of Environmental Protection, and the Ministry of Education. A large portion of the curriculum of a *Green School* consists of topics that promote the awareness of environmental issues and ways to deal with them. Additionally, students are supposed to live these principles by engaging in research activities and training, as for example biological gardening. Only if certain criteria, i.e. classes on special topics, outside school activities to raise awareness, the installation of ecological management systems on school grounds, are met, a school can officially call itself a Green School. In 2001 more than 4,000 schools were granted *Green School* status all over China. However, the spread of this school system is partly slowed down, amongst others, by educators who have an aversion to teaching new materials and topics and schools not being up-to-date about trends and new findings in that area of expertise (Lin & Ross 2005: 76).

Not only *Green Schools* have been active in teaching students about the environment, but individual learning projects on sustainable development have been performed in many conventional schools across China as well. Due to the fact that in China the eastern regions are more developed, education there is more advanced than in rural parts of the country, where children often only receive basic schooling. This is also the reason why education about sustainable development and related topics, such as organic farming, is rather available in the big cities in China's eastern provinces (Duan et al. 2014: 118). According to Xu & Qian who published a book on sustainable development education in rural China, some primary and secondary schools have nevertheless initiated projects on learning about organic farming, biological food products in order to support the awareness of such ideas in their communities (Xu & Qian 2012; in: Duan et al. 2014: 118).

Organic agriculture has moreover been integrated into academic curricula of China's universities. More than five universities in China, including China Agricultural University in Beijing, Nanjing Agricultural University, and Zhejiang University offer classes on biological farming. However, in most cases organic farming does not take up an entire academic program, but is rather part of another program's schedule (Qiao 2010).

Individual private initiatives to educate people on organic farming can also be found in China. During the research for this paper, an advertisement was found through internet research, in which a small organic community family farm in Guangdong Province is searching for volunteers to help with farming activities and learn how to cultivate organic plants or raise organic poultry. The initiative is furthermore planning to establish a modern private school teaching various sustainable topics (Workaway.info 2015). Other farms that mainly manufacture organic goods, occasionally offer educational courses on green farming methods or learn to cultivate crops by taking part in the farm's daily production procedures. Examples for such farms are *BIOFarm* and *Ecoland Club Farm*, which are both located close to Shanghai (GoodtoChina 2015).

### **3.1.2 Economic Circumstances**

#### Market for Organic Products and Organic Feed

The share of farmland that is being cultivated with organic methods is about 0.4 % of the total agricultural land in China (Willer & Lernoud 2014: 186). Compared to other countries China possesses a large organically cultivated area, which grew from about 1,850,000 hectares in 2009 to 1,900,000 hectares in 2012 (ibid.: 48). In 2013 China had about 10,000 establishments that were officially granted organic certification. Out of these approximately two thirds were producing farms and the rest were trading companies or processing firms (Wai 2014: 167). There are no official data on how many organic producers there are in total in the PRC (Willer & Lernoud 2014: 281). However, the range of products manufactured with organic methods is wide. It includes livestock products, tea, fruit and vegetables, crops and pulses, vegetable oil, textiles, herbs for medicinal purpose, fishery products and processed goods, such as dried fruit, frozen products, or canned goods. Continuous data on the amount of organics produced are not available, however experts have expressed estimations on some

areas of the bio manufacturing sector. Whereas in 2003 the value of produced organics was equal to 200 million USD, the same data for the year 2008 were at about 2.4 billion USD<sup>10</sup>. The total production amount of organics in 2006 reached 3.85 million tons<sup>11</sup>, out of which 13,000 tons were organic tea. The output of bio tea increased to 15,000 tons one year later.

China's main export partners for organic products are the U.S., Mexico and Canada, Europe, and Japan. As to organic imports these countries principally purchase processed vegetables, honey, green tea, herbs, beans, soybeans, and crops from China. As to organic imports, China mainly imports sugar, honey, nuts, and dried fruits from other countries in order to process them and then again export the final products. Additionally, food products that are not produced in China, as for example organic coffee or organic tropical fruits, are imported for domestic consumption. Before the turn to the 21st century organic production in China concentrated rather on export, however, foreign markets were not ready for the large amounts of bio produce that came from China. This phenomenon led to a focus shift of Chinese organic producers on the domestic market after the year 2000, which has been continuously expanding since then (International Trade Centre 2011: 5 f.).

Data about a market for organic feed could not be retrieved within the feasible research realm of this paper. However, as has been mentioned already, organic farmers are encouraged by law to feed their livestock on products from their own farm (Standardization Administration of the People's Republic of China 2005: Chapter 8.4). It remains unclear, to what extent this is practiced. But if farmers follow the legal promotion to mainly use products from their own farms as organic fodder, this might be an explanation of why a market for organic feeds might be only very small and is thus not a relevant topic for researchers.

### Sales Channels

In China organic goods are sold in large supermarkets, such as *Parksons*, *Carrefour*, *Jusco*, or *Walmart*, but also in small stores specializing on organic produce. In one type of these small-scale shops, retailers sell a big variety of organic goods in shops for healthy and environmentally friendly products that they purchase from different sources. The other shop type is smaller and owned by producers or processors, who sell their own products only, i.e.

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<sup>10</sup> By comparison: China's total production value in the agricultural sector was 836,125 billion USD in 2010 (FAOSTAT 2012; in: FAO 2012: 2).

<sup>11</sup> By comparison: The total production amount of rice in 2010 was 197.2 million tons, that of pork was 51.7 million tons (FAOSTAT 2012; in: FAO 2012: 3).

only limited assortment of bio goods are available in such stores (International Trade Centre 2011: 12). As the consumer groups favoring organics are higher in big cities, these are also the locations where most specialty shops for bio products can be found. There are around 9 in Beijing, 10 in Shanghai, five in Nanjing, two in Hangzhou, three each in Guangdong and Shenzhen. Further organic food shops are located amongst other cities in Xiamen, Quanzhou, Dalian, Shenyang, Haikou, and Wuhan (ibid.: 26). However, most organic products are sold through the big supermarket chains (ibid.: 12). Recently, organic farms have also introduced home delivery services and internet platforms where consumers may order their products without having to visit the producing farm (Lagos et al. 2010: 1). Additionally, there are farmers markets, where organic products are sold and farms that directly sell their products on-site (International Trade Centre 2011: 11).

Accumulation zones of organic production in China are mainly located in urban and suburban areas. As many of China's metropolises lie in the eastern coastal regions, organic manufacturing facilities, which are chiefly small-scale farms, are located in eastern provinces. A new trend has emerged in suburban areas of large cities, such as Shanghai or Beijing, with companies that invest in renting out plots of land to consumers, who may cultivate their own organic vegetables there. The rents for farm plots are relatively high, which still makes such undertakings only affordable for wealthy Chinese. The largest organic production areas, which also manufacture most organic goods in China, are in Jilin Province, Liaoning Province, and Heilongjiang Province in the northeastern part of the country. However, since the domestic organic market has become more important for consumers across the country, less developed areas in China's western part, i.e. Gansu or Xinjiang Province, have also become active in the production of biological livestock foods (Lagos et al. 2010: 2).

### Price Premiums

Just as in many other countries, organic products are sold at a higher price than conventionally produced goods. Biologically cultivated vegetables, for example, are at least 3 times more expensive than those grown conventionally (Lagos et al. 2010: 4). According to media one head of cabbage from conventional growing costs about 5 Renminbi, which is equal to 0.8 USD, whereas an organic cabbage is sold at 35 Renminbi (Tang 2011). Consumers may also get organic food delivered by the producing farms, as for example from *The Mahota* near Shanghai. This farm offers delivery packages that can be bought in different combinations of vegetables, rice, and pork. A package of three kilograms of vegetables and two kilograms of rice delivered twelve times per three months costs 2,000 Renminbi, an

amount equal to about 320 USD (The Mahota 2014). *Fields*, a company that offers delivery services of different products, including organic goods from domestic and overseas manufacturers, sells 10 organic eggs from Anhui Province for 38 Renminbi (Fields 2015), whereas the average price for 12 conventional eggs ranges from 7 (EF English First 2015) to 12 Renminbi (Numbeo 2015). Moreover, *Fields* sells about half a liter of organic milk for 26 Renminbi (Fields 2015), whereas one liter of milk from ordinary supermarkets can be bought at 7 (EF English First 2015) to 13 Renminbi (Numbeo 2015). Chinese researchers agree with these data and estimate that price premiums for Green Food may vary between 10 and 50 % above prices for conventionally produced goods, and organic products may even have a price premium that is 50 % higher than that of ordinary foods (Xia 2002: 3).

### 3.1.3 Social Factors

#### Non-governmental Actors

Before looking into non-governmental organizations that support organic farming in China, a short note about Chinese NGOs will be provided. This general information might be helpful background knowledge for the reader to gain a more comprehensive understanding of this aspect in Chinese society. According to Ru & Ortolano, there is not merely one type of NGO in China. They generic term for such organizations in China is 社会团体 (shehui tuanti), which is equal to the expression *social organizations* (Ru & Ortolano 2009: 148). What belongs to this type of organization, is first institutions that are initiated and operated by governmental bodies, second those that are established by citizens, and third those that are mixture types between both former institutions. The government-organized institutions do not fulfill the criteria typically associated with an NGO in international circles, as they are practically operating according to governmental orders; however, in numerous cases scientists nevertheless handle these GONGOs – *Government-organized Non-governmental Organizations* – as if they were NGOs, which is why it has proven difficult to identify which type of organization is actually meant. Ru & Ortolano have found a total of 128 of what they define as *Citizen-Organized Environmental NGOs* throughout China as of 2004 (ibid.: 148 f.). Bao, who also researched environmental NGOs in China, agrees with Ru & Ortolano on the different categories of NGOs that exist due to government affiliation. He specifies that out of a total number of around 2,700 environmental NGOs, almost half are GONGOs, slightly more than 40 % are environmental NGOs run by universities, 2.5 % are Chinese divisions of international organizations, and around 7 % only are independent Citizen-Organized Environmental

NGOs (Bao 2009: 7). Examples of the latter are *Global Village Beijing*<sup>12</sup> and *Green Student Organizations Society*<sup>13</sup>.

There are very few non-governmental organizations that focus entirely on organic farming promotion in China. Usually it is rather the environmental NGOs mentioned above that include programs for biological agriculture support. The *Global Environmental Institute*, for example, is one of the non-profit organizations that cover different projects regarding a general promotion of the idea of sustainable development (Global Environmental Institute 2014). This organization is also one of the Citizen-Organized Environmental NGOs as defined by Ru & Ortolano (Ru & Ortolano 2009: 152). Amongst others the institute organized a seminar in Qinghai Province that aimed to draw attention to and evaluate local possibilities of organic farming. The seminar participants were university scientists and local residents including some that had been involved in organic farming pilot projects, who shared views and ideas in discussions (Global Environmental Institute 2014).

One of few NGOs whose focal point is organic farming is the *Pesticide Eco-Alternatives Center* (PEAC). The organization concentrates mainly on promoting the use of environmentally-friendly weed and pest management and is based in Yunnan Province. The organization initiates activities for the general public at organic farms in order to raise awareness of the positive effects of biological agriculture. With the support of German experts PEAC moreover established an e-learning platform. Interested individuals may take online courses on diverse topics including ecology, organic food, and environmental protection (Pesticide Eco-Alternatives Center 2014).

Chinese NGOs also have the opportunity to take part in international exchanges through the *EU-China NGO Twinning Exchange*, a program funded by the German foundation *Robert Bosch Stiftung*. The project annually provides the opportunity for 7 staff members from a German NGO and the same number of staff from a Chinese NGO to pair up as exchange partners and work in the environment of the partner NGO for several weeks. Ex-

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<sup>12</sup> This organization initiates diverse activities to raise awareness of environmental issues through TV and radio programs, newspaper articles, issuing a handbook about how to lead an environmentally-conscious life, a book for children on the same topic, organizing exhibitions, pilot projects, and lectures. Moreover, the organization is starting to establish a facility for growing organic vegetables (Beijing Global Village 2015).

<sup>13</sup> The Green Student Organizations Society was initially established in Chengdu, the capital of Sichuan Province, as an information web page and developed into an organization that engages in environmental promotion activities especially targeted at young people. The group has, amongst other projects, issued a guidebook for students about how to act environmentally-friendly in everyday life and started a program for green gardening on university campuses [own transl.] (Green Student Organizations Society 2015).

change partners are always paired up according to similar working areas, so that both partners have the chance to gain insight into how their work is done within the same area of expertise in the respective country. In 2014 four individuals from NGOs in the agriculture sector took part in the exchange program. They worked mainly on promoting sustainable farming methods and independence of small-scale farmers from commercial companies that sell fertilizers and pesticides (Stiftung Asienhaus 2013).

Additionally, there are associations in the Chinese agricultural sector, including some in the organic farming sphere, which have been formed by farmers themselves. However, such organizations are rather rare, as it is mostly the initiation by local authorities that drives the establishment. Despite the fact that NGOs were also partly involved in promoting such associations, the Chinese government was the major driving force in this process, for example, by issuing the *Farmer Professional Cooperative Act* in 2007. The lion's share of these organizations focuses on joint marketing of their products and operates as a business institution. Some of the cooperatives serve as distributors of their members' agricultural produce and work collectively to acquire input material (Song et al. 2013: 99 ff.). Farmer associations that have been established independently of government initiation are mostly targeted at developing sustainable living methods, i.e. maintaining the natural environment of communities without exploitation of natural resources, practicing organic farming and preserving the natural variation in the ecosystem. The majority of these groups have only sprung up in the 21st century. One example is the *Mashan Rongyan Ecological Farming Cooperative* established in 2012 by 28 farmers in Guangxi Province. The founders did not only want to develop organic farming practices in their town, but also protect their cultural identity by supporting understanding and ties within the local community. Their agricultural products are distributed through *Community-Supported Agriculture*, i.e. a system in which consumers and producers support each other by sharing risks and profits of the produced goods. Consumers guarantee to buy all the products harvested by the producers by paying beforehand for a whole year of food provision, whereas the producers deliver weekly packages to the customers. This particular cooperative is supported by membership fees and income from selling their organic produce and does not receive any subsidies from the government. Their activities have already expanded to other surrounding villages, and as more farmers joined the group the variety of products increased, too (ibid.: 102).

Aside from NGOs and farmer-initiated groups, which have been already mentioned above, other forms of citizen-based promotion channels also exist in China.

Markets, such as the *Beijing Farmers' Market* for organic produce, are an example of such platforms. This particular market takes place twice per week and provides the possibility to organic farmers around Beijing to sell their products to individual consumers and big trading companies. When it started in 2009 it was held once every four weeks and visited by around 200 consumers, whereas today the number of visitors is more than tenfold. The increasing popularity of the market has also led to a growing range of products that are now being sold there. Individual citizen groups consisting of consumers have moreover formed. They raise awareness among society by supporting activities that promote organic products and help spreading word about the benefits of organics among their friends and family. University groups have also been playing a role in supporting the organic farming movement. Some agriculture departments have established training courses regarding biological growing, and there is a *National Community-Supported Agriculture Forum* being jointly organized every year by Tsinghua University, Renmin University and others (Cheng & Shi 2014: 140 f.).

#### Motivation of Organic Farmers through Rewards and Prizes

In China official authorities stimulate proactive behavior in the environmental sector by organizing award-winning contests. Although no award especially directed towards organic farming could be identified during the research for this paper, there are several environmental competitions organic farmers may also be part of.

The former SEPA has introduced the *Chinese Environmental Award* at the beginning of the 21st century, which rewards those groups or individuals that show special efforts in preserving the natural environment (SEPA 2005; in Ten Brink 2011: 62). The Chinese government also awards the *Green Chinese Award*. The prize is jointly funded by five different departments of the government and the *United Nations Environment Program* and rewards individuals, who set a good example regarding protection of the natural environment. Examples of prizewinners are an NGO initiator and a senior citizen, who dedicated himself to massive tree planting (Xinhua 2007). Moreover, the environmental organization *Future Generations China*, that supports environmental protection and local community conservation, launches programs that are targeted at students in particular. These may take part in projects to raise awareness in their universities and in rural areas across China. Within the framework of the projects the *Green Seed Awards* are granted to student organizations that show special engagement regarding environmental protection. The awards include prize money as well (Future Generations 2010). There are furthermore competitions funded and administered by a Chinese and a foreign facility. An example is the *Tengtou Agricultural Science Award* that is

sponsored by the private company *Zhejiang Tengtou Landscape* and managed by the *American Society of Agronomy*. It rewards scientists from any country who have provided major research findings regarding farming in China. This can be new methods to advance scientific research in the area of agriculture, schooling of other researchers, or contributing to the establishment of new governmental policies in the agricultural sector (American Society of Agronomy 2015).

### Consumers of Organics

This chapter is to describe consumer types of organic products, places organic produce is predominantly purchased at, reasons for buying bio food, and the promotion of organics.

The majority of consumers of organic products live in the major metropolises in China, i.e. Beijing or Shanghai, as more well-to-do citizens are concentrated there. However, cities such as Chengdu or Nanjing have also been developing a basic network for organic product sales. (Lagos et al. 2010: 3). As has been mentioned previously, several specialty shops have sprung up in these cities, which is also a sign that the organic movement is growing in China. 90 % of organic products are bought by individual consumers, whereas 10% are purchased by luxury restaurants, hotels and irregular buyers of organics. Bio products are mostly bought by consumers from relatively high social classes, because these dispose over enough financial means to afford organics that are many times more costly than conventional products.

Around 40 % of consumers of bio goods in China are thus members from families with well-paid jobs and a high degree of education. The salary of this consumer group permits them to focus on the quality and safety of food. 10 % of organic consumers are families who have only one child. In these families both parents are working and they mostly earn enough money to afford highly priced products. As their attention is limited to only one offspring, they try to provide the food with the best quality to that child. Chinese consumers who suffer from chronic illnesses, such as heart disease or high blood pressure, also tend to buy organic food, because their doctors prescribe a beneficial diet or because they pay attention to healthy food themselves. These consumers make up about 10 % of the total of organic consumers and also come from well-off families. Other citizens, who can afford buying biologically produced goods due to high income levels, are civil servants and foreigners working and living in China. These two groups jointly make up for a market share of 17 %. The former is even given bonuses in the form of organic food. The latter is either used to consume bio products as a habit from their country of origin or buys organic food in China due to worries about chemical residues in conventional products. Furthermore, Chinese who had studied in foreign coun-

tries and return to China also tend to become consumers of organic products. They probably learned about bio food in the foreign country as part of the local way of life and try to keep those habits when they return home.

Additionally, citizens from Taiwan and Hong Kong, who work in business firms in Mainland China and usually earn a high income often purchase organic products, as they fear conventional food might not be safe to consume due to reappearing food scandals in China. Young Chinese, who are the first to adapt to modern trends and western influences flowing into China's cities, are increasingly becoming consumers of organic food. For them the consumption of healthy food is important and they tend to agree to spend more money on risk-free products even if their salaries are generally not very high (International Trade Centre 2011: 8 f.). Another type of buyers of organic products is companies, who traditionally provide gifts to their customers in order to continue good business relations. Organically produced foods have increasingly become items that are favored by the firms for such purposes (Lagos et al. 2010: 4). Specialty shops and supermarkets are preferable places to buy organics for parents with one child, as they are sure to find a big variety of products there, particularly including baby products. These consumers mostly tend to be irregular buyers of bio foods, as they focus on healthy food for babies and small children and as soon as their child is older they do not buy organics any more. The first type of consumers mentioned above, however, would regularly purchase organics. People with illnesses also buy organics at small bio shops, whereas young citizens prefer purchasing organic food from the producing farmer, and foreigners buy from small shops, supermarkets and directly from manufacturers (International Trade Centre 2011: 8 f.).

In terms of reasons for which Chinese consumers buy organic products, the majority does so, because they attach great importance to the safety of the food they consume. They are primarily worried about the impact food can have on their health, which is why consumers of organics prefer biologically produced goods. Another factor that majorly influences consumer demand for organics in China is the income level. As has been mentioned several times in this paper, the price of bio products in China is very high and thus not affordable for families or individuals with an average salary. Overall, the impact of factors such as conservation of the natural environment and understanding of organic food is relatively low compared to the reasons above (Yin et al. 2010: 1365 f.).

## Promotion of Organic Products

Diverse ways through which organic produce is promoted have emerged in China. The majority of these promotion channels have already been discussed earlier in this text. The following paragraph will merely provide a brief summary.

In general, activities that promote organics among society are not organized by government authorities, but rather by private people. Many groups have formed that consist of organic producers or organic consumers, who try to spread the organic movement. The former actors aim to expand business opportunities, whereas the latter may be part of so-called Citizen-Organized Environmental NGOs, who want to attract attention to their attitudes and beliefs. However, a large part of promotion for organic products in China, e.g. in the media, is funded by trading firms. They do not only make use of advertisements in newspaper, magazines, or on television, but as the internet is a popular means of information source for many Chinese, the companies advertise through web pages as well. Many organic farms also have established their own home pages in order to popularize the produce they sell. Popular methods to promote organic farming are furthermore membership systems, where consumers become members of farms or trading companies and are regularly granted discount prices, exceptional opportunities to take part in activities, as for example excursions to the respective organic farm. China also hosts several trade fairs, which become promotion platforms for organic products. The most prominent of these is *BioFach China*, which takes place annually in Shanghai (International Trade Centre 2011: 12 f.) and is the only event of such kind that concentrates entirely on organic products. The trade fair is a joint project of the German *NürnbergMesse* and CGFDC and has been running each year since 2007 (NürnbergMesse 2015). In 2014 a total of 41 exhibitors were from foreign countries, whereas 304 came from China. Partly due to active promotion visitor numbers have more than doubled since the trade fair was launched. *BioFach China* is being promoted by the organizing institutions through poster advertisement in shops, restaurants and organic farms, on the internet, through mail and telephone promotion, media reports and other channels (BioFach China 2014).

Indirect promotion affects the organic movement in China as well. It is not only through active support by the actors and events mentioned above that the consumption of organic products receives attention among the general public, but also through food scandals that have emerged in the recent past. In 2008, for example, Chinese consumers began to purchase large amounts of organic milk powder, as the substance melamine that was detected in conventional milk powder had caused illnesses of many infants and even two deaths. A num-

ber of similar cases of contaminated food among conventionally produced goods have added to the worries of Chinese consumers about food safety, and thus indirectly promoted bio products (International Trade Centre 2011: 13).

#### **3.1.4 Barriers**

As a consequence of the promotion of organics mentioned above, but also due to other reasons, the organic farming movement in China is advancing and organic product consumption is becoming an alternative throughout particular social classes. However, one cannot overlook the fact that there are some problematic issues China is still facing regarding its organic sector.

One problem mentioned by experts is the low level of knowledge about organic food among the general public in China. Due to the fact that many Chinese do not know how about the exact differences between organic and conventional food, they only perceive the higher price of organics and thus decide not to buy them. A certain degree of confusion also exists regarding the different certification labels that exist for non-conventional products, which adds to the lack of understanding among consumers. As a consequence of media reports about false labeling of products for increased profits and other unethical methods trading companies operate with, some people, who have knowledge about organic production methods, nevertheless oppose to purchasing them. Exported products labeled as organic have in some cases been discovered as mislabeled, which causes general doubt on the foreign market about organic imports from China. Such practices can have negative impacts on the entire Chinese organic export sector (Lagos et al. 2010: 5 f.).

Another constraint to the organic market, as indicated above, are fraud cases regarding organic labeling and certification. The PRC has not established one exact authority that only focuses on enforcing and supervising the set standards. This leads to the fact that different local governments do not have clear guidelines about what body is responsible. Some manufacturers of organic foods thus continue operating under expired certificates without any official monitoring institution that would perform regular checks. The awareness of such illegal practices and an insufficient control system by authorities has led to shops establishing their individual labels. Their intention is to gain further customers and keep existing buyers, as they develop more trust into a shop that consistently sells organics with one single label (Lagos et al. 2010: 11 f.). Besides, some certification bodies do not operate entirely according to official

rules. Reports claim that some certifiers issue organic certificates to farms, without actually having received the official authorization for issuing certificates. These semi-approved certifiers are mostly in the middle of the process to be authorized, however, they are not accredited fully yet (EU-China Trade Project 2008: 29 f.).

Moreover, some companies that deliver organic products from the producing farm to shops or consumers have difficulties of receiving a regular supply of products from the farms they work with. The farms occasionally decide to sell their produce to a different distributor that pays them more money. There are no real places where the different parties involved in bio product sale can establish contracts over product supply with each other and thus eliminate arbitrary business (Lagos et al. 2010: 11 f.).

Cheng & Shi criticize the fact that local governments only grant subsidies to organic farms whose farmland exceeds a certain number of hectares. It is clear that small-scale farms operated by families or communes can never afford cultivating the required minimum area, because they do not dispose of enough capital or workforce. Only large farms operated by big companies thus have access to the financial subsidies, whereas those organic producers that would need them more urgently cannot apply for the money. Furthermore, a problem Cheng & Shi address regarding the popularization of organic food among the Chinese society is the concentration of most promotion activities in urban areas. Rural area development regarding organic food consumption is still in its infancy in China. The majority of events organized by Citizen-Organized Environmental NGOs, organic farmers markets, or organic forums take place in big cities like Beijing or Shanghai. Although individual initiatives have been established in rural areas as well, the degree of involvement among citizens in smaller cities is very low and the lion's share of organic activity takes place in the metropolises (Cheng & Shi 2014: 142 f.).

## 3.2 JAPAN

### 3.2.1 Politics

#### National Guidelines

In 1994 the Japanese government formulated a set of directives, namely the *Basic Environment Plan* (BEP), which are designed to protect the environment and promote sustainable action. The plan focuses on four key goals. Firstly, Japan should establish a fair handling system in economy and society that aims to deal with any materials in an environmentally-conscious way. Secondly, a balance should be kept between humans and nature. Thirdly, a maximum number of citizens should be encouraged to support environmental protection actively, and fourthly, those citizens should also expand their engagement to other countries (Ministry of the Environment 1994: Foreword). Furthermore, the BEP provides the basic framework for the government's contemporary policy making regarding environmental topics (ibid.: Part 1, Section 3). Policy-makers should also formulate particular guidelines that support the evaluation of achievements and how individual means have been applied. In that way success and progress or areas that have to be improved are to be detected easily. Within this context research activities are to be supported in particular (ibid.: Part 2, Section 3). The BEP also demands financial subsidies and other means of support from the government for proper realization of the plan's goals (ibid.: Part 4, Section 3). Moreover, the encouragement of farming techniques that conserve the natural environment, such as a cutback on synthetic agrochemicals, is specifically mentioned (ibid.: Part 3, Chapter 2, Section 1, 2.2). The government should therefore formulate rules for the amounts of chemical fertilizer use for agriculture and determine particular situations in which the use of pesticides is not needed at all (ibid.: Part 3, Chapter 3, Section 4, 1.1.a).

In order to realize the transition towards a more environmentally friendly agriculture the Japanese Ministry of Agriculture, Forestry and Fisheries (MAFF) formulated basic concepts. These include five understandings based on which regulations should be defined, ten basic approaches on how to find the most suitable rules, and a suggestion on policies that should be established. The understandings contain principles such as the interplay of urban and rural areas as well as of organic producers and consumers, or also the general ambition of directing all actions and regulations towards sustainable solutions. According to the basic approaches the general public's ideas about environmentally friendly production should never

be disregarded, the public should always have the opportunity to receive information, and regulations regarding sustainable farming should be transparent, easily understandable, and scientifically substantiated. Therefore policies should cover the preservation and improvement of water quality, the deceleration of climate change by decreasing greenhouse gas emissions, making use of manure and biomass while reducing the use of chemical substances that are harmful to the soil, the protection of the natural environment and habitats, the promotion of research, and the expansion of education about the environment and nutrition (Ministry of Agriculture, Forestry and Fisheries 2015a).

Japan's MAFF has moreover published a document, which includes some general propositions on how biological farming should be encouraged. According to the MAFF easily accessible supportive structures in the sector should be reinforced in order to help initiators start their own projects without having to go through discouraging administrative barriers. Moreover, a platform should be established that serves as a meeting point for farmers, consumers, and processors. In order to pave the way for the awareness and proper understanding of organically produced goods a focus has to be put on spreading as much information as possible about bio-food, and especially about how it is manufactured, how it is handled, and what the benefits are for purchasers and the environment. Consumers' interest in and proper understanding of the advantages of organic produce should also be supported by clear and comprehensible marking of the goods with organic labels. The support of close communication between different actors in the organic farming sector is another vital point the MAFF suggests. In this manner the single groups, for example organic farmers and urban citizens, can exchange knowledge and thus tutor the others in related projects and information events. This could also lead to researchers and students being encouraged to find out more about biological farming and initiate associated studies. Such events should moreover highlight the advantages of buying food grown locally as opposed to produce that has been exposed to long distance transportation. Additionally, the organic farmers' views and ideas should be evaluated individually and handled with respect (Ohtani 2007: Chapter 1).

The document has also set up some areas that require special attention by decision-makers in terms of improvement. Research and development should mainly focus on expanding technological aspects of biological agriculture. The research should ideally be conducted in collaboration between universities, private researchers, and local authorities to derive the most effective results, which should also be provided to organic farmers and other interested groups (ibid.: Chapter 3, Paragraph 2). Financial support should moreover be provided for the

education of young citizens about organic farming, and also for facilities that function as centers for bio-farming advice and training. The Japanese government should support the commercial distribution of organic produce and therefore actively assist with the establishment of specialized shops (ibid.: Chapter 3, Paragraph 1). It should not only serve as a supporter for local governments in order to facilitate their initiation of organic agriculture projects, but also provide assistance for carrying out the organic farming laws formulated by the central government (ibid.: Chapter 3; Paragraph 7).

### Financial Support

The Ministry of Agriculture, Forestry and Fisheries has introduced the *Law for Promoting the Introduction of Sustainable Agricultural Production Practices* in 1999. This law allows farmers who have applied for starting organic production at their prefecture and handed in an exact plan about how to realize their project, to access the *Agricultural Improvement Fund*. The farmers can receive loans from the fund for the sake of establishing the necessary production facilities (OECD 2015a). Organic farmers may also be granted tax reduction in order to concentrate on financing their organic farming manufacturing, equipment they need and the required space. Facilities that specialize on material circulation, as for example the conversion of manure into organic fertilizer are encouraged to hold up their work by being offered monetary subsidies. Through financial support programs local governments are urged to install their own establishments for recycling farm waste and buy technical equipment and machines that can then be used by the organic farmers in the region. Financial support provided by local authorities includes direct payments to eco-farmers in order to foster the increase of farming methods that do not harm the environment. Direct payments are moreover granted to farmers whose lands are located in the mountains. In that way officials do not only aim to uphold diverse farming techniques, but also keep as much cultivated land as possible or even extend farming areas (OECD 2015b: 3). In order to receive the payment organic farmers have to agree to pursue their biological farming activities for a minimum of five years. Due to more difficult conditions the production of organic goods is more expensive in mountainous areas. This cost difference between mountainous and regular farmland is covered to around 80 % by the direct payments. In the first decade of the 21st century more than 80 % of farmland in the mountains took advantage of this financial support mechanism (OECD 2009: 96).

The Japanese government has established an institution, called *Japan Finance Corporation* that offers loans to small private businesses or individuals for diverse areas. Farmers,

both conventional and organic, are one of the many recipients who can be granted a loan and can thus finance their farming activities (Japan Finance Corporation 2015).

However, not only the government on the national level has been active in establishing financial support programs for farmers. One such project was supported by the NGO *Earthquake Relief and Recovery Fund* that provided a grant of around eight million Yen to *Fukushima Organic Agriculture Network*. The latter is an organization in Fukushima Prefecture that had fostered organic farming development in the region by encouraging interaction of individual bio farmers and propagating the positive effects of organic agriculture around the area. After the nuclear incident in Fukushima and the resulting problems in the proximity of the power plant the grant aimed to support farmers who lost their occupation or had to move by encouraging their integration into new farming communities (Japan Center for International Exchange: 2015).

Farming communities operating according to the traditional *Teikei* system in Japan – a type of Community Supported Agriculture – have developed their own ways of financial support. The *Teikei* principle involves partnerships between organic farmers and consumers in which the latter buy products directly from the farmers at previously arranged prices. By guaranteeing to purchase a certain amount of organic goods from the farmers, the buyers provide stable financial support to the producers who can thus ensure to provide a periodic supply of goods (Japan Organic Agriculture Association 1993).

#### Official Authorities that Provide Assistance and Information

Concerning the topic of what types of authorities communicate with the Japanese society and offer help and information about sustainable farming it appears that it is not primarily on the national level that such services are offered. Assistance is rather offered by organizations in local communities or prefectures as explained hereafter.

The *Japan Organic Agriculture Association* (JOAA) is one of the few institutions on the national level serving as a platform where assistance and information about organic agriculture can be retrieved by farmers and those simply interested in sustainable farming techniques. The fact that different actors in the field – mainly researchers, producers, and purchasers of organic goods – are members in this institution provides the possibility to learn about organic farming from diverse sources. Interested individuals may participate in numerous activities organized by the JOAA, including conferences, workshops, local fairs and information activities or instruction lessons (Japan Organic Agriculture Association 2015).

Another widely operating institution providing information services to organic farmers is the *International Nature Farming Research Center* (INFRC). This institution is authorized to perform organic certification, but also offers training for interested farmers, study tours, and workshops. Moreover, the organization issues a newsletter that contains information about recent research results and current news on biological agriculture (International Nature Farming Research Center: 2015).

At this point the *Center for Food Quality, Labeling and Consumer Services* should be briefly mentioned as well. Although the organization's main duties are the evaluation and research in terms of quality of organic labeling, it is also obligated to distribute the information about its work (Ministry of Agriculture, Forestry and Fisheries 2006: 4).

However, as has been mentioned above, institutions and groups on a local level are the major parties providing training and information on organic farming. It is mainly individual farms or farmer groups that offer courses. *Joetsu Organic Farm*, which is located in Niigata Prefecture in Japan's northwestern part, for example, provides the possibility for national and international students to take part in classes about how organic farming works in practice (Fujimoto 2012: 16 f.). The *Southern Nagasaki Farmers' Union*, an institution consisting of more than one hundred farm families does not only grow their own organic food, which is distributed and purchased all over the country, but also organizes various events in order to establish an interactive relationship with consumers. In that way individuals can take part in activities that inform and teach them about biological growing methods. The group is furthermore active in various media. It publishes articles about organic farming in local papers, issues its own magazine each month and through media offers support for interested individuals who wish to begin working in the organic sector. Therefore the union provides help throughout the initial phase of growing organic products by offering to select suitable farmland for beginners and then train them through a green agriculture preparation class (Moen 2002: 68).

The *Network for Organic Agriculture in Fukushima Prefecture* is a similar group that includes farmers, scientists, buyers of organic products, and even public authorities, who cooperate in order to promote sustainable farming. The institution serves as a meeting point and place for exchange for all the actors in organic farming. Conventional farmers may find support for conversion to biological growing methods and organic farmers can seek help if they face challenges, for example with finances. Moreover, the network offers training and education programs and activities that distribute the idea of organic farming further across the region (United Nations Centre for Regional Development 2012: 1).

Additionally small individual farms, such as *Hello Farm Organics*, offer information and consulting services for interested people. This is mainly done through being part of national and international volunteer programs. Volunteers registering with such programs agree to work at an organic farm and thus get the opportunity to learn about green agriculture. School groups may also sign up for training days and workshops (Hello Farm Organics 2015). Another example is that of *Frostpia Farm* with its owner Mr. Kaneko, who has been one of Japan's pioneers in organic farming. He began growing organic products in the 1970s and since then has been educating other farmers about alternative cultivating methods. Japanese students and also those from abroad regularly take part in Mr. Kaneko's classes and 12-month training programs. He is moreover active in local media where he gives interviews and informs the general public about biological growing and has also written several books (Colquhoun & Bosch 2010).

### Certification

Certifying bodies in Japan must be accredited by the MAFF. There are two types of certifiers in the country, who are authorized to certify biologically grown products, namely the *Registered Certifying Bodies* and the *Registered Overseas Certifying Bodies*. (Ministry of Agriculture, Forestry and Fisheries 2006: 4).

More than 50 Japanese institutions are authorized to perform the certification of organic products. The areas in which they certify vary according to the size of the institution. Some only certify organic processed food or organic agricultural products, whereas numerous certify both categories and additionally organic feed and organic livestock products. There are around 25 so-called *Registered Overseas Certifying Bodies* active in the Japanese organic sector, as for example the *Canadian Mill Services Association*, the *Norsk Treteknisk Institutt*, and the Indonesian organization *Pt. Mutuagung Lestari*. Additional foreign certifiers accredited by the MAFF are from the United States, Australia, Germany, China, the Netherlands, Italy, Switzerland, New Zealand, and Mexico (Ministry of Agriculture, Forestry and Fisheries 2015b).

In order to request the authorization as a certifying body with the MAFF, an institution must submit an official application including a number of specifications about itself. The *Food and Agricultural Materials Inspection Center*, which is a government agency, may inspect the applying organization and verify the provided data (Ministry of Agriculture, Forestry and Fisheries 1950: Section 2; Art. 16). The accredited certifiers must periodically issue a report about their business operations and archive the reports for at least five years. Any inter-

ested individual is authorized to view the reports (ibid.: Art. 17-9). Similarly, foreign certifiers may apply for accreditation by the MAFF (ibid.: Art. 19-9). Domestic applicants have to pay a fee of more than 100,000 Yen, which is about 850 USD, at the point they receive official registration with the MAFF (Ministry of Agriculture, Forestry and Fisheries 2009a: Art. 3) and have to renew their accreditation after four years (ibid.: Art. 4), whereas foreign applicants pay a slightly lower fee (ibid.: Art. 6) for the same registration period of four years (ibid.: Art. 8). For both types of certification bodies, the fee for the renewal of their accreditation is lower than the initial registration payment (ibid.: Art. 5; Art. 9).

Certification bodies must submit data to the MAFF about the certified farm or distributor after granting them an organic label. The report must contain names of the certified facility, what products are being certified, where the facilities are located and when the certificate was issued (ibid.: Art. 47).

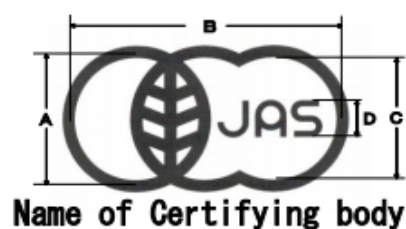
The certification process for an organic farm depends on the certification body's guidelines. An exemplary process, as it is performed by the *Organic Certification Organization* (OCO), will be illustrated below. At first, the applying farm must request the necessary forms from the OCO, which are then sent to the farm. Before being allowed to submit the completed forms, the farmer or the farm's personnel have to take part in a special training class that teaches them about the Japanese laws on organic farming, relevant standards and other pre-conditions to begin alternative farming. The certification fee also has to be paid prior to submitting the application. The completed form is reviewed by OCO and in case of a positive evaluation the farm is contacted in order to arrange a date when the OCO visits the farm for inspection. After the inspection the auditor writes a report and as a result either issues an organic certificate for the farm or a negative rating with the denial of a certificate. If the organic label is granted, the certified farm must agree to annual or even random on-site inspections by OCO auditors (Organic Certification Organization 2011).

A similar certification process is also performed by the *Japan Organic & Natural Foods Association* (JONA). JONA certifies products that have been cultivated under organic standards for at least three years and processed goods that consist of 95 % of biological ingredients. Even products that do not belong to a category of the *Japanese Agricultural Standard*, such as aquaculture produce, may be granted a certificate by the JONA. If a company that processes food which consists of 70 % to 95 % of organic ingredients applies for certification, the JONA may grant the products the label of "made with the ingredients certified by JONA" (Japan Organic & Natural Foods Association 2015: 2). The fee for the evaluation of applica-

tion forms with the JONA is 20,000 Yen regularly and 10,000 Yen for small farmers, which, converted to USD, is about 85 and 170 USD. Additionally the farm has to pay an inspection fee if the JONA's auditors visit the farm for on-site evaluation (ibid.: 3).

### Labeling

In Japan the *Japanese Agricultural Standard* (JAS) is the fundamental set of guidelines underlying organic certification and labeling. Originally, i.e. at the time of establishment in 1950, it did not include regulations about organic agriculture. These were only added in 2000 and came into effect on April 1st 2001<sup>14</sup>. The JAS organic label is strictly regulated and may only be placed on products that fulfill JAS standards (Maruyama 2010: 108 ff.). Under the organic JAS crops, fungi, products from organic livestock, animal feed, and processed products can be certified, whereas it is not possible to obtain organic labels for apiculture and aquaculture products, goods for medication, alcohol for the purpose of consumption, or algae (Battini 2015). For an image of the organic JAS seal see Figure 5 below.



- (1) A shall be longer than or equal to 5mm.
- (2) B shall be twice as long as A. D shall be three-tenths of C.
- (3) The height of names of Certifying Bodies shall be the same as D.
- (4) The names of Certifying Bodies can be described as abbreviated names.

**Figure 5.** JAS organic label (See Ministry of Agriculture, Forestry and Fisheries 2014: 2)

For other JAS labels please see Figure 6 in the following. The JAS marks are placed on products that comply with certain standards reviewed by certification bodies. Aside from the food label the certified products must contain pre-defined information, such as e.g. the place of origin and the name of the distributor (Ministry of Agriculture, Forestry and Fisheries 2007).

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<sup>14</sup> A detailed list of all products regulated by the JAS may be found on the MAFF web page: [http://www.maff.go.jp/e/jas/jas/pdf/jas\\_list.pdf](http://www.maff.go.jp/e/jas/jas/pdf/jas_list.pdf).

| General JAS Mark                                                                  | Specific JAS Mark <sup>15</sup>                                                   | JAS Mark for Production Information <sup>16</sup>                                   |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|  |  |  |

**Figure 6.** JAS Marks (see Ministry of Agriculture, Forestry and Fisheries 2007)

### Laws and Standards

A cornerstone for Japan's integration of organic farming into the legal system was the *Act on Promotion of Introduction of Sustainable Agricultural Production Practices* in 1999. This law is aimed at encouraging farmers to increasingly turn towards organic farming methods and stipulates that Japanese farmers should use organic substances, such as livestock manure on their farmland and reduce the use of synthetic fertilizer (Kato & Ray 2002: 173).

Law No. 175 about *Standardization and Proper Labeling of Agricultural and Forestry Products* that was issued in 1950 serves as a legal basis for Japan's standards for organic agriculture. This law regulates general certification methods and sets up essential standards every product for consumption must comply with (Morgera et al. 2012: 249). However, "[...] liquors and drugs, quasi-drugs and cosmetics [...]" are not regulated by this law (Ministry of Agriculture, Forestry and Fisheries 1950: Art. 2). Moreover, according to Article 8 of Law No. 175 any interested individual or local authority may suggest further products from forestry or agriculture to become part of the JAS (ibid.: Art. 8). The Organic JAS has been established later by the MAFF with latest revisions in 2012. The standards include plants, processed foods, feeds, and livestock products that are manufactured with biological methods. The main points of each standard will be briefly explained in the following passage.

Organic plant production must be carried out in a way that does not harm the natural surroundings of the collection or harvesting area, but rather supports its conservation. Furthermore, the use of chemical substances must be avoided (Ministry of Agriculture, Forestry and Fisheries 2012a: Art. 2). The area on which plants certified as organic are grown has to be

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<sup>15</sup> Specific meat products, naturally grown chicken, organic foods, and products with production information may be labeled with this mark since 2006 (Ministry of Agriculture, Forestry and Fisheries 2007).

<sup>16</sup> Mark for products that contain production information, such as the name of the supplier and the place of origin. The label was established in 2003 in order to strengthen consumer trust and increase traceability of the product. The mark is used for beef, pork and agricultural products (Ministry of Agriculture, Forestry and Fisheries 2007).

free of chemical treatments for at least three years when cultivating perennial plants and two years in the case of others. Generally, farmers may not use chemical fertilizers, but only those from natural origin, such as composted plants from the same field or closely located biologically cultivated fields. If a field does not regain the desired fertility, exceptional substances, such as sulfur, products obtained from fermented food, or processed substances of animal origin obtained from slaughterhouses or fish production, may be applied. Pests and weeds must only be eliminated by natural methods, such as working with microorganisms or light and sound. However, if such methods fail and the plants are endangered, extraordinary materials for pest control may be used. Such materials are, for example, lime sulfur powder, copper sulfate, vinegar, calcium oxide and others. When organic plants are stored, transported, packed or handled in any way after harvesting, they must not come in touch with products that had been treated in a different way than organic plants (ibid.: Art. 4). Organically grown plants must be labeled in the correct way, which always has to include the term *organic* on the product. Additionally, if plants that are sold from fields or areas that are in their conversion period, these plants must be explicitly marked as such by adding the expression *under the conversion period* (ibid.: Art. 5).

The JAS defines organic processed foods as such that do not contain more than 5 % of other than biologically grown or manufactured plant and animal products (Ministry of Agriculture, Forestry and Fisheries 2012b: Art. 3). Ingredients that are not permitted to be used are ionizing radiated food products and goods obtained by genetic mutation and modification methods, whereas salt, water and additives defined by the standard, such as beeswax, wood ash, or gelatin, may be added. Processed foods certified as organic must be kept separate from other than organic products during transport, packaging, storage or further processing. In order to eliminate pests and weeds, natural methods should be preferential, however, if such methods are not sufficient, pre-determined chemical substances, e.g. ethanol or carbon dioxide, may be used. (ibid.: Art. 4). Furthermore, just as for the case of organic plants, organic processed foods must be marked as *organic* or must contain the supplementary term *under the conversion period* if they include plants cultivated on fields that are currently under conversion (ibid.: Art. 5).

The *Japanese Agricultural Standard for Organic Feeds* dictates that feed granted an organic certificate may only contain 5 % of other than biological ingredients. These can be conventional agricultural substances, conventional milk, and fish products (Ministry of Agriculture, Forestry and Fisheries 2012c: Art. 3). The other 95 % must consist of organic plants

and agricultural products, organic processed products, organic milk and feed, goods from aquacultures, salt, water, as well as untreated organogenic limestone and natural additives. Products that are results of genetic modification and those emitting ionizing radiation are prohibited as ingredients of organic foodstuffs. The biologically produced ingredients of organic feeds may not come in touch with other than organic materials during production, storing, packaging, or processing. If a facility manufactures fermented ensilaged fodder explicitly defined substances may be added, as for example honey, natural yeast, sea salt, lactic bacteria, or whey. As to limiting weeds and pests, natural methods should be preferred, although others are permitted if natural techniques do not have the desired effect. Ethanol, potassium soap, and boric acid are examples of substances allowed in exceptional situations (ibid.: Art. 4). The term *organic* or *under the conversion period* – in relevant cases – must be visible on the organic feed product (ibid.: Art. 5).

Products manufactured from organic livestock include goods from the following domestic animals and poultry: Cattle, horse, sheep, goat, pig, chicken, quail, and duck. These farm animals must have the opportunity to take shelter in clean studs that possess an appropriate amount of air, light, space, feeds, drinking water, dry floors with straw or soil, and perches for poultry. The studs must only be cleaned with pre-defined products, as for example soap, alcohols, iodine agents, chloric agents, or hydrogen peroxide solution. Moreover, the animals must have access to open-air free runs, which must be 4-5 square meters per bovine, 13 square meters per horse, 1 to 3 square meters per sheep, goat and pig, and 0.1 square meters per chicken (Ministry of Agriculture, Forestry and Fisheries 2012d: Table 6). These must be separated from areas with prohibited substances and free of chemical treatment for at least two years, provide sufficient shelter opportunities, and protective facilities to keep out predators. Livestock that was born to mother animals kept with biological techniques for at least six months and is then kept organically as well, may be certified as organic.

Identical requirements apply for poultry, except for the fact that poultry may be categorized as organic if being raised with biological methods after hatching. However, bovine animals used for meat production and equine animals require a conversion period of 12 months or three quarters of their life span if they had been raised conventionally and should convert to being organically raised livestock (ibid.: Art. 4). If a farm faces difficulties in acquiring farm animals from their own breeding, 5 to 10 % of the total number of livestock may be brought in from outside and raised organically thereafter (ibid.: Table 8). If a farmer decides to first begin raising domestic animals or poultry for the purpose of producing organic

livestock products, animals that are either nulliparous, four to twelve months of age or weighing between 280 and 340 kilograms or poultry that is 3 days (for meat production) or 18 weeks (for egg production) of age may be purchased from external farmers (ibid.: Art. 4; Table 9). Organic livestock should be fed with organic feed (ibid.: Art. 4).

The standard specifies the minimal amount of feed each type of animal must be provided per day. A female milk-type bovine under milking, for example should be given 9 kilograms of feed daily, and the same type of animal not under milking and younger than 10 months should be provided 5.6 kilograms of feed. As to equines, a female horse in its breeding period should receive about 19 kilograms of feed each day (ibid.: Table 3). Around 30 % of the feed may be products that are labeled as under conversion, however, only after the livestock had been raised organically for at least three years. Organically bred animals can also be fed up to 5 % with marine products that have not been treated with chemicals. Enzymes and microorganisms may be part of the feed for organic livestock if they haven't been genetically modified. Maternal milk should be the primary feed for suckling young livestock, but if that is not sufficient natural or other milk may be fed as well. For the case that there is not enough organic feed for biologically kept livestock other products may be provided to the animals, however only up to 20 % of the total feed. If there is a shortage of feed for organic livestock due to natural disasters, for example, 50 % of other than organic feed may be added for a limited period of time.

Farmers are obliged to support the immune system of organically kept livestock in order to minimize the occurrence of diseases. Therefore the keepers must follow rules of adequate husbandry as explained above. If a treatment becomes essential due to an animal's health being at risk, the livestock should be treated in isolation and with the least painful or stressful method. Natural treatment should be preferred; however, if it is not sufficient, veterinary drugs may be used. The treatment of domestic animals and poultry with veterinary medicine, vitamins, and minerals for other than therapeutic purposes as well as the provision of growth or reproduction stimulating drugs is not permitted. Tranquilizers and devices that release electric shocks are prohibited during the management of organic livestock. Especially during transport and before and during slaughter stress situations must be minimized. Also, only a limited number of substances is permitted to be used for cleaning milking devices, as for example alcohol, soap, or iodine agents. When disposing of animal excrements the farmer must avoid contaminating soil and water. (ibid.: Art. 4).

## Funding and Promotion of Research and Development

Research and development were announced by the MAFF as one of the main objectives of how to promote organic farming throughout Japan in the first decade of the 21st century. Local governments are thereby encouraged to support and carry out the Ministry's plans. According to the MAFF research and development in the organic sector should be gradually increased by constructing pilot tests of technologies that have been invented by private companies. Furthermore, a cooperation of different parties, i.e. local authorities, universities, private institutes is essential in order to assemble the most effective results. According to the MAFF Incorporated Administrative Agencies (Ohtani 2007: 2), which are independent institutions that conduct research and evaluation, amongst other services, in a certain area of expertise (Ministry of Economy, Trade and Industry 2015), are also facilities that should be part of organic farming research (Ohtani 2007: 2). The agencies are affiliated to the ministries, which issue particular targets regularly that are subsequently implemented by the agencies. However, the way in which the agencies achieve results is not the ministries' sphere of competence, which grants the agencies considerable autonomy. In order to ensure that the results of the research are completely unbiased, the agencies generally ask independent specialists to assess the results (Ministry of Economy, Trade and Industry 2015). More than ten Incorporated Administrative Agencies conduct research for the MAFF, including, for example, the *Food and Agricultural Materials Inspection Center* (FAMIC), the *Japan International Research Center for Agricultural Sciences* (JIRCAS) and the *National Agriculture and Food Research Organization* (NARO) (Cabinet Secretariat 2013: 114). To a large part these agencies are financed by the ministries (Japan International Research Center for Agricultural Sciences 2011a). However, only few of these research institutions engage in research and development of organic farming. For an exemplary illustration of the work of Incorporated Administrative Agencies the research activities of the FAMIC, the JIRCAS and the NARO in the organic sector will briefly be displayed in the following.

Although the FAMIC is rather an institution that inspects food products, fertilizers and agricultural goods, one service area of the agency is also researching if the JAS, including the one for organic products, is implemented appropriately and thus sufficiently serves its purpose. Moreover, the FAMIC is constantly working on optimizing techniques for residue testing on agricultural plants (Food and Agricultural Materials Inspection Center 2014: 4 f.). The JIRCAS is an exceptional example of an Incorporated Administrative Agency as it does not only conduct research on domestic agricultural topics, but also extends its activities to developing countries. The main areas the JIRCAS aims to develop are new methods to counter en-

vironmental issues and secure food supply. Therefore the institution gathers research data and evaluates them so as to come up with technologies that are sustainable for global farming systems (Japan International Research Center 2011b). One of the fields NARO researches is how to optimize production in sustainable agriculture. The agency thereby focuses on systems for soil fertility maintenance, alternative ways of pest control, such as predator bugs against harmful insects, and manufacturing technologies that are environmentally friendly and may easily be modified according to local conditions. Moreover, the NARO joins cooperative research groups with universities and private companies (National Agriculture and Food Research Organization 2014: 6).

Another branch that engages in research on organic farming is education facilities, such as Tokyo University of Agriculture. The Department of Agriculture, for instance, researches environmentally friendly techniques to grow crops or methods of appropriate biological waste composting and effective use of compost. Moreover, the department is searching for biological ways of constraining weeds and pests on cultivated land, e.g. by researching natural enemies of insects that infest plants and crops (Tokyo University of Agriculture 2009).

Private institutions are also active in organic farming research. One of such establishments is the INFRFC. It focuses on training and education of individuals interested in biological growing methods, but it also operates farms and testing facilities for the purpose of researching how to identify harmful chemicals in plants and farm soil. Other research topics include natural management of pests and weeds, quality assessment techniques, methods to adjust the way of farming and selection of crops to local conditions, and maintenance of soil fertility (International Nature Farming Research Center 2015).

### Education and Information

Although organic farming does not seem to be officially part of Japan's school curricula, related subjects are nevertheless taught in primary and secondary schools. At the end of the 1980s the Ministry of Education announced that environmental education had to be part of school teachings from then on and issued related instruction manuals for educators (Inoue 2014: Chapter 5). In 2006 the authorities revised the *Basic Act on Education* and stipulated that schools had to "[...] foster an attitude to respect life, care for nature, and contribute to the protection of the environment" (Ministry of Education 2006: Art. 2). Later on the Ministry of Education also promoted increased teaching of other sustainable development topics and encouraged projects for that matter (Inoue 2014: Chapter 5).

In 2000 Japan established a new subject to be taught in schools, i.e. integrated studies. This subject teaches a mix of different topics, as for example environmental education, health studies, and international communication, mostly through activities that may be chosen by the students (National Institute for Educational Policy Research 2014: 4).

Individual farms have been initiating their own educational activities regarding organic farming. Some especially target their education towards children, as for example the *Pocket Farm Doki-Doki* in Japan's eastern part or a farm park close to Tokyo. The farms encourage children to help them with watering plants, harvesting vegetables or weeding in order to learn about how food is grown. Others offer organic cooking courses that are supposed to encourage young people to start preparing their own healthy food. There are moreover several cooperative organic farms that offer education programs for university students, who spend a couple of days in the summer to learn about biological growing methods (Hill & Kubota 2007: 270). Another example of educational courses on organic farming is *Oak Village*, a farm close to Tokyo, where people may rent and cultivate their own plots of land. The institution also offers classes for farming beginners and includes the possibility for them to sell their produce at the farm's own market (Tokyo Weekender 2011).

Universities in Japan offer academic programs that include organic farming. For example, at Tokyo University of Agriculture and Technology students can take a master's program at the Department of International Environmental and Agricultural Sciences. During the two-year program students may take classes, amongst others, in ecological manufacturing of food products, environmental protection, and the recovery and sustainable handling of resources (Japanese Grant Aid for Human Resources Development Scholarship 2014). Shinshu University, which is located on five campuses in Nagano Prefecture, also offers academic programs that integrate organic farming into their curriculum. The university's Department of Food Production Science offers a course in agronomy. Apart from management of organic farms, weed science, and sustainable manufacturing of crops, students have the opportunity to take part in workshops on biological farming methods and internships at actual farms (Shinshu University 2010).

### 3.2.2 Economic Circumstances

#### Market for Organic Products and Organic Feed

Farmland that is being cultivated with organic methods in Japan has increased from 9,067 hectares in 2009 to more than 10,000 hectares in 2012 (Willer & Lernoud 2014: 49). This results in organic agricultural land having a share of 0.27 % of the total agricultural area in the country (ibid.: 283) compared to 0.1 % in 2001 (Motomura 2013: 3). In 2010 a total of almost 12,000 organic farms were estimated to produce bio goods in Japan. Out of these, around 4,000 had an organic JAS certificate, whereas the rest, i.e. more than half of all organic farms, did not have official organic certification. The main reason for many organic farms in Japan not operating under the organic JAS certificate is the high cost for obtaining certification. As the majority of organic farms in the country are small-scale, many cannot afford certification costs. However, due to traditional custom Japanese consumers nevertheless buy non-certified organic products. Historically Japanese farmers have always sold their products directly to consumers, and in many areas these structures have prevailed until today (Ministry of Agriculture, Forestry and Fisheries 2013; in: IFOAM 2015: 3).

Although the size of organic farmland has increased in recent years, the market for organics has not fully developed yet due to several constraints, such as severe regulations on imported products or a lack of availability of organics produced domestically (Motomura 2013: 1). However, ranking after China, Japan still possesses the second largest market for organic products in Asia. According to recent data the value of products grown using fewer agrochemicals totals 600 billion Yen, which corresponds to around 5 billion USD, and the value of entirely organic products on the Japanese market is equal to around 180 billion Yen, i.e. more than 1.5 billion USD<sup>17</sup> (Ministry of Agriculture, Forestry and Fisheries 2013; in: IFOAM 2015: 1).

In 2012 more than 61,000 tons of organic vegetables, fruits and herbs and over 86,000 tons of organic processed products were granted the organic certification label in Japan. Regarding unprocessed organic products most of Japan's bio goods are organic vegetables, organic rice, organic fruits, organic unprocessed green tea, and organic soy beans. In smaller amounts the following unprocessed organic foods are also produced: wheat, barley, buckwheat, beans, diverse grains, sesame, other unprocessed tea, coffee beans, nuts, sugar cane,

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<sup>17</sup> By comparison: In 2012 the total production value in the Japanese agricultural sector was 10,335 billion Yen (Ministry of Agriculture, Forestry and Fisheries 2012f; in: Statistics Bureau Japan 2014).

roots, mushrooms, plant seeds, mulberry leaves, maple sap, and other products from plants. As to the major processed organic food products, Japan manufactures soy milk, tofu, soy sauce, tea drinks, vegetable and fruit juices, and soybean paste (Ministry of Agriculture, Forestry and Fisheries 2012e).

In 2011 Japan imported more than 27,000 tons of soybeans, which is almost 40 % of the total amount of organic imports. Vegetables ranked second (28.9%), followed by fruits (19 %), green tea (2.9%), wheat (1.3 %), rice (0.9%), and others (7.4 %). In terms of organic processed goods, vegetables, fruits, soy products, and other products were imported by Japan in 2011 (Ministry of Agriculture, Forestry and Fisheries 2011; in: Organic Trade Association 2011: 2 f.). Data for the export of Japanese organic products could not be found within the feasible research possibilities of this paper. However, according to the MAFF's web page, which displays diverse documents implying organic exports, Japan does export organic products to the United States, Canada, and the European Union (Ministry of Agriculture, Forestry and Fisheries 2015c).

Information and data about a market for organic feed could not be obtained. However, information about the organic certification system for feeds in Japan appears on a web page of an Australian retailer of organic feed. This may be an indicator that Japan does import organic feed from abroad (Aus Organic Feeds 2015).

### Sales Channels

Organic foods are distributed through the *Teikei* system, specialty shops and regular supermarkets, home delivery, and cooperative institutions. Under the *Teikei* system consumers buy their organics directly from farmers. In some cases the consumers do not have to come to the farm to buy the products, but the farm sets up locations that are easy to reach for various buyers and these can collect their pre-ordered vegetables there. When organically grown food became popular in Japan it was only sold through *Teikei* (Japan Organic Agriculture Association 1993). Organic products can now be found in many Japanese supermarkets, department stores and small shops. Recently, small-scale supermarket chains specializing on organic products, such as *Natural House* and *Mother's Organic Market* have been established. However, the range of products these stores and shops provide is mostly limited (Motomura 2013: 11). Huge cooperatives with large numbers of consumers and producers as their members have been acting as distributors of organic products as well. One example is *Daichi Mamorukai*, which has a total number of almost 70,000 members and purchases organic products from Japanese farmers and distributing them through specialty shops, supermarkets, school lunch projects, and home delivery (Daichi Mamorukai 2015).

Organic production is not concentrated in any geographical area in Japan, but rather evenly distributed on three main islands of Japan, i.e. Kyushu, Shikoku, Honshu. On the fourth main island, namely Hokkaido, there are mainly organic grass and pasture lands, which, however, make up only 4 % of Japan's total organically cultivated land. About half of the organically operated farmland is used for crop and vegetable production, more than 30 % for rice cultivation, and about 12 % for fruit trees (Ministry of Agriculture, Forestry and Fisheries 2009b; in: Kirchner 2012: 31).

### Price Premiums

The prices for organic produce are still very high in Japan, which also poses an impediment to an expansion of the organic market. As in other Asian countries, e.g. China, bio products in Japan are rather purchased by wealthy customers, because they cost up to three times more than their conventionally produced counterparts (Ministry of Agriculture, Forestry and Fisheries 2013; in: IFOAM 2015: 1).

In Japan one kilogram of conventional wheat flour costs around 200 Yen (Xpat.Life 2015). The price for around one kilogram of organic wheat flour from an online shopping web page, however, is 950 Yen (Tengu Natural Foods 2015), which means that the organic flour is more than four times more expensive than the conventionally produced counterpart.

### **3.2.3 Social Factors**

#### Non-governmental Actors

When researching non-governmental groups that are active in the Japanese organic sector and have contributed to the movement of organic food production, the JOAA is an organization that often appears first. Members in the JOAA include farmers, consumers, scientists, and journalists, amongst others. The association serves mainly the purpose of providing a platform for exchange of ideas and knowledge between the different actors in the organic sector. Additionally, the JOAA supports campaigns against diverse activities that prevent further development of biological farming, such as genetic engineering. The organization also emphasizes that its work is not based on economic profit, but rather on the wish to support an “[...] organic community through mutual understanding, aid and assistance” (Japan Organic Agriculture Association 2015). The JOAA is a non-profit organization whose membership fees are entirely funding its activities. The Japanese government does not provide any finan-

cial support to the JOAA nor does the organization earn money from advertisements on their web page or newsletters (Japan Organic Agriculture Association 1993).

The organization has moreover been prominent in actively supporting the *Teikei* system across Japan and with the aid of the IFOAM making it known abroad as well. In the United States, for example, the development of *Community-Supported Agriculture*, a similar distribution system of agricultural products as *Teikei* was mainly influenced by the JOAA and the IFOAM (Moen 1997). In 1978 the JOAA moreover established the *Ten Principles of Teikei*, the fundamental criteria according to which the organization works and encourages its members to work. These are, for example, fostering democratic behavior, mutual support, arranging product prices that are profitable for both the farmer and the consumer (Japan Organic Agriculture Association 1993). Partnerships between organic farmers and consumers are relatively common in Japan. Another example is the *Group for the Production and Consumption of Safe Foods*, which was established, just as many others, in the 1970s in Miyoshi, a village not far from Tokyo. According to their principles consumers pay an initial deposit that serves as financial support for the farmers if needed, the farmers determine their product prices, and consumer members guarantee to purchase the produced goods. In that way the farmers are financially secured and agree on their side to make prices negotiable if yields are stable. Meetings between farmers and consumers to evaluate the partnership are also taking place regularly (Moen 1997).

Environmental NGOs are also part of the supportive structure for organic farming in Japan. Even if not entirely focused on organic farming only, one example is the *Central Union of Agricultural Cooperatives*, an umbrella organization of diverse co-operatives in the Japanese agricultural sector. Co-operatives that work under the union operate throughout Japan. The umbrella organization provides diverse services to its members all targeted towards improving farming and living conditions (JA-Zenchu 2015). Japanese NGOs are also active internationally to support the development of organic farming. Only recently, one of such non-governmental bodies, i.e. the *GLM Institute*, began promoting green agriculture in the Philippines (Embassy of Japan in the Philippines 2013). *Daichi Mamurokai*, which was mentioned in the previous section on the organic market in Japan, was initially an NGO and only later established a business for the distribution of organic food. However, the company claims to still operate under NGO principles, such as fair prices, fair conditions for workers, and protection of the environment (Daichi Mamurokai 2015). The IFOAM also established a branch in Japan in 2001 and supports the development of organic farming in the country by organizing events that promote sustainable agriculture. Furthermore, the organization communicates

ideas and requests of farmers and consumers in the organic sector to decision-makers, such as the MAFF (IFOAM Japan 2015).

Aside from NGOs and co-operatives of farmers and consumers, which have been mentioned above individual scientists also initiate awareness-raising activities, such as for example a group of researchers from Hiroshima University. The group conducted a workshop open to the general public in a residential part of the city of Hiroshima. The workshop included activities to learn about biological farming from both consumer and producer side, to understand the Japanese organic certification system and other international certification systems, to develop more conscious eating habits, and to come up with one's own ideas how to further advance organic farming. The participants of the workshop also engaged in food preparing activities at an organic farm and were finally asked to reflect on what they had learned from the workshop (Kohmoto 2015).

#### Motivation of Organic Farmers through Rewards and Prizes

As to how farmers are motivated to increasingly engage in organic farming individual examples of competitions for farmers have been found. In the 20th century in Hyogo Prefecture the use of compost was encouraged by awarding a prize to those farmers in each county who could provide proof of having the pile of compost with the best quality for reutilization. The winner of one county would then participate in the next competition round against winners from other counties, and the winner of the whole prefecture was granted a final prize (King 1911: 397). If this competition is still being organized today remains unclear.

There are, however, several prizes an organic farmer may win nowadays as a reward for engagement in diverse areas. The president of *Kanazawa Daichi Organic Farm* in Japan's western Ishikawa Prefecture has received a number of prizes. For example, in 2008 the farm received an *Outstanding Management Award* and in 2009 the *Top Prize* at the *Nippon Fan Awards for Food Action* (The Art of Travel 2014).

Motivation and encouragement to promote organic farming among the Japanese society is moreover achieved by cultural events, such as the *International Film Festival on Organic Farming*, which is held in Tokyo annually, as from 2007. At the festival different films from diverse countries that relate to sustainable farming methods are shown to raise awareness of the topic (International Film Festival on Organic Farming 2011).

## Consumers of Organics

The following chapter is to take a look at who purchases organic products where, what the reasons are for consumers to buy bio food, and how organic products are promoted.

As to the consumer base of organic products it appears that there is no clear pattern. A study by Kim et al. revealed that Japanese consumers attach great importance to certification and labeling of foods, as it communicates that products are safe to consume and of high quality (Kim et al. 2008: 68 f.). On the other hand there are two types of people who purchase bio products in Japan, namely those who buy food from farmers who are not certified according to official organic standards and those who have a JAS certificate. Goods produced at farms that are not certified are mainly bought by customers who have personal ties to the farmers, those who live close to the farms, or are part of a *Teikei* group. Additionally, consumers who defend the idea of a movement against modern agriculture would support farmers who get by without official certification. Officially certified products are purchased by consumers who buy from large distributing companies, for example, or especially urban clients for whom officially declared safety of the food products is most important (Davis 2012: 125 f.). The JOAA, for example, openly opposes official organic JAS labeling and thus supports organic farmers who operate without certification. The organization claims that the authorities that introduced the labeling were influenced by groups that focus on economic profits. And because of lax formulations in the organic JAS guidelines the number of loop holes was large, which provided numerous opportunities for fraud (Japan Organic Agriculture Association 1993).

In general, organic food is also becoming increasingly popular among young people in Japan. Many restaurants and cafés in big cities, such as Osaka and Tokyo, now offer biologically produced foods and drinks. Combined with chic shops and a modern appearance they are specifically attractive to the urban youth (Motomura 2013: 11).

The JOAA conducted surveys among consumers and *Teikei* members in 2009 and 2010 amongst others asking about the places where organic products were bought and the reasons for which consumers preferred organic goods to conventional ones. The results showed that clients, who only occasionally bought organic products, did so in supermarkets, whereas regular consumers of organic products purchased from farms or through *Teikei*. This implies that regular buyers rather focus on supporting the whole idea of organic production, whereas for irregular buyers the product itself and its momentary effects are more important. Besides, only few consumers stated that they bought organic products in specialty shops, on the internet and other places. As to the reasons why they bought bio products, the majority of

consumers mentioned food safety, followed by less pollution of the environment and health factors, taste, support of farmers, and others (Japan Organic Agriculture Association 2009, Japan Organic Agriculture Association 2010; In: Yoshino 2010: 267).

### Promotion of Organic Products

Organic products are promoted through diverse channels in Japan. A number of these have individually been mentioned throughout this paper. However, in order to provide a complete overview a short summary will be presented in the following passage.

As organics are sold in diverse places in Japan, consumers are able to choose between a large number of possibilities of where to purchase bio products. Whoever aims to buy organic vegetables, fruit, processed products, meat, or livestock products may either become part of a *Teikei* group, which guarantees regular supply, or purchase them according to demand in supermarkets, specialty shops, from home delivery companies, online stores, or directly at an organic farm. These distribution channels promote organic products simply by selling them and making sure they are clearly separated from conventional products.

Diverse organizations and facilities, including organic farms try to spread the organic movement by organizing theme-related events. Such activities are often arranged by groups consisting of farmers, consumers, and researchers, e.g. the *Japan Organic Agriculture Association*, the *International Nature Farming Research Center* or the *Southern Nagasaki Farmers' Union*. Additionally, individual farms who engage in school lunch programs or organize family events and classes on bio farming also contribute to promoting interest in sustainable agriculture.

Organic products are furthermore presented to the public through specialized trade fairs. Examples of such events are the annual *FOODEX Japan*, a fair for food and beverages that includes a presentation of organic products (Japan Management Association 2011) and the *Tokyo Health Industry Show*. One focal point of the latter is organics, i.e. food, cosmetics, and textiles (Tokyo Health Industry Show 2015). Cultural events, such as the *International Film Festival on Organic Farming*, may also become drivers of the organic farming movement, as films are media that appeal to a broad spectrum of people.

The consumption of organics is moreover triggered indirectly, namely by food safety concerns of Japanese consumers. As mentioned in the introduction of this paper these were caused in the recent past by outbreaks of diseases, such as BSE. Additionally, scandals about chemical residues that were increasingly found in conventional food products led to an increase of alert Japanese consumers and a growing consciousness for the need of alternative foods (Yokoi Yukio 2003: 295).

According to the FAO, the main channels through which Japanese consumers receive information about organic products are postal advertisements, promotion through media, presentation of products in shops, and word-of-mouth-recommendation (Liu et al. 2004: 11).

### 3.2.4 Barriers

Although the organic sector in Japan is slowly growing and the population is becoming more attentive of biological farming and organic products, there are some challenges that prevent the sector from faster expansion.

The main challenge put forward by many experts is the lack of awareness of the organic JAS label among consumers. Due to the fact that the national certification system for organic products has only been introduced recently, according to Motomura, many people are confused about the existence of different terms in the labeling of products. Before the introduction of the organic JAS certificate there were different categories of food. Products were all labeled individually by the producers, ranging from products grown with a reduced amount of chemical substances to products without chemical residues. Many consumers were confused regarding these classifications, which, amongst other reasons, led to the standardization of the organic certification system by the MAFF. However, some degree of disorientation about the organic food label and even distrust has remained among many consumers, as the JAS contains regulations about products with reduced chemicals as well. This results in confusion about the different types of foods (Motomura 2013: 2). Additionally, the implementation of the official standards remains in the hands of each prefecture. The individual prefectures handle their function as a supervising institution very differently, and some even establish their own certification system for products that are not produced conventionally, which makes it difficult for consumers to identify the desired product and thus only adds to confusion. Especially regarding imported products, prescribed limits of chemicals used on food vary by local authority (Liu et al. 2004: 12). According to a news release by the *Japan Association for International Collaboration of Agriculture and Forestry* (JAICAF), an NGO that is under jurisdiction of the MAFF and the Ministry of Foreign Affairs, the occurrence of fraud within the area of food labeling, including the labeling of organic products, is not rare. In 2003 the MAFF investigated whether the labeling of products in 17,000 selected food shops was done properly. Around 7 % of the shops were discovered to be selling organically produced goods without being labeled with the official organic JAS tag, which counts as a violation of legal regulations (JAICAF 2004).

Moreover, just as in other parts of the world, conventional farmers in Japan are often concerned about negative side-effects if they converted to organic farming methods. According to a survey by the MAFF in 2008, Japanese conventional farmers expressed worries about more workload that organic methods would require, about less yields in the initial phase, which would result in lower income, about costly input technology and material, and about an effective way of promoting the foods (Ministry of Agriculture, Forestry and Fisheries 2008; in: Qiu et al. 2013: 236).

## 4. DISCUSSION

The following chapter will summarize the major findings of the analytical part of this thesis in the order of the researched criteria. In that way an immediate comparison of the same criteria for China and for Japan can be made so as to determine similarities and differences. In the final part of this chapter the answers to the research questions posed in the introduction of this paper will be drawn up.

The first factor that has been analyzed is national regulations China and Japan issued, which contained plans to promote organic farming. Although official authorities in China had already been advocating organic farming for two decades, since the beginning of the 21st century biological cultivation methods have become an inherent part of government plans, such as the *National Five-Year Plan for Environmental Protection* (State Council of the People's Republic of China 2008: Art. 3). Moreover, some common ideas have been formulated by administrative authorities on organic sector development that include organic standard supervision, management of organic production conditions, implementation of respective laws, market development, and continuous cooperation between the handling departments. Nevertheless the Chinese government has not issued an actual national policy that is entirely focused on supporting organic farming. Japan's central set of guidelines that include the intention of developing the organic agriculture sector, i.e. the *Basic Environment Plan*, was issued in the 1990s (Ministry of the Environment 1994: Foreword). Later on, the MAFF formulated two different documents that specify the spheres which have to be taken into account when establishing policies regarding organic farming. Spheres mentioned include the involvement of the general public's ideas, support for research and education, financial subsidies for information centers, and the establishment of a platform for exchange between producers and consumers (Ministry of Agriculture, Forestry and Fisheries 2015a; Ohtani 2007: Chapter 1).

Both countries have established national regulations that include directions on how organic farming should be supported. Apart from the fact that China seems to have begun earlier to incorporate active organic farming development into official guidelines, China and Japan have both formulated objectives that need to be considered by the addressees when establishing the concrete support means or legal documents.

The second factor, i.e. financial support, is handled quite differently in both countries examined. In China no monetary subsidies are provided by the national government for organic farming activities. There are nevertheless possibilities for farmers or producing compa-

nies to receive financial support, namely from local authorities. Local governments provide loans and direct payments to individual farms, so far, however, these subsidies are mainly limited to large-scale production companies, which leaves out small-scale family farmers as recipients (Cheng & Shi 2014: 142). But in big cities distinct financing projects have increasingly been springing up. Another possibility for organic farmers to receive financial support is to cooperate with distributing companies, who provide monetary means and in return receive a certain amount of produce from the farm regularly (Sternfeld 2009: 3). Japan has established a stable system of financial support possibilities for organic farmers. The *Agricultural Improvement Fund*, which has been initiated by the government at national level, provides loans to any farmer who can provide an exact plan how to realize his or her organic farming project (OECD 2015a). Additionally local authorities receive certain amounts of financial means in order to provide support for organic farming projects. Some local governments use this money to establish recycling facilities for farm waste or buy technical equipment that they provide to any organic farmer from the community (OECD 2015b: 3). Bio farms may furthermore be granted tax reductions for their farming practices or receive direct payments if their farms are located in mountainous areas (OECD 2009: 96). There are also a number of institutions, both private and government-sponsored, that offer loans for organic farmers amongst others (Japan Finance Corporation 2015; Japan Center for International Exchange: 2015). Numerous bio producers, who are members of *Teikei* groups, have established their own financing system. Consumers, who buy products from these farmers, are bound to them by contracts to guarantee to purchase their produce. The income of *Teikei* farmers is hence secured and provides them with the financial support they need (Japan Organic Agriculture Association 1993).

As demonstrated, Japanese organic farmers can resort to diverse financial support measures both at local and at national level, whereas in China it appears more difficult for bio producers to find an institution that provides subsidies. However, due to increasing initiatives from private companies and local governments, possibilities of financial support for organic farmers are growing.

As a third aspect institutions have been researched that offer advisory services and information to those citizens who are interested in organic farming or farmers who either need advice on how to convert to organic methods, or farmers who are already practicing organic farming and need concrete solutions for a problem they encountered. Numerous institutions in China offer advisory services and information regarding organic farming. These are mainly

private companies, university centers, or firms that provide assistance for management of businesses in general (Nanjing Global Organic Food Research & Consulting Center (OFRC) 2006; Egelyng et al. 2013: 213; Agrachina 2014). There are also little companies in the CSA sphere that organize information activities for young and old citizens (Shared Harvest 2013). Individual activists, who try to promote a lifestyle that involves consuming organics and protecting the environment, organize events for interested people as well. Such events can be visits to organic farms or special consulting days (Shi et al. 2011: 553 ff.). Another channel through which information about bio agriculture can be gathered is web pages (Organic Farming Web China 2014). In Japan information services are generally offered on a local level. However, there are big institutions operating nationally, as for example the JOAA. One of the services the JOAA offers is information provision for the general public and organic farmers through fairs, workshops, conferences, and instruction lessons. Moreover, Japanese citizens can receive information on related topics through regular newsletters published by national research centers (Japan Organic Agriculture Association 2015). The majority of advisory services are nevertheless offered through small institutions, i.e. organic farms or farm groups (Fujimoto 2012: 16 f.; Moen 2002: 68).

Regarding this aspect the situation in China and Japan is very similar. Information services and assistance to organic farmers or interested consumers are mainly happening through small-scale activities initiated by privately run institutions. The range of opportunities to receive advice on anything concerning organic farming is very broad in both countries. It reaches from individuals who want to promote an organic lifestyle, to farmer groups offering workshops, to bigger research institutions.

The fourth factor that has been analyzed was the certification institutions, their official authorization and certification processes they perform for organic farms. It appears that both China and Japan have established similar regulations in this area. There are detailed regulations about the process how certifiers receive their authorization in both countries. In China the highest authority accrediting organic certifiers is the CNCA, whereas the MAFF is the analogous institution in Japan. Both institutions have affiliated sub-departments that support them in different steps of the accreditation process, such as on-site inspections of the applying institution or screening application forms. Another similarity in the field of certification in China and Japan is that the certifiers must check certain criteria at a farm that is applying for organic certification. These criteria are defined by official documents in both countries. Certifiers in both countries may, however, perform the certification process according to individu-

ally established steps. A difference that appeared during this paper's research is that in China the cost of certification of a farm appears to be higher than certification costs in Japan, although the real amount of costs remains unclear due to variations according to farm size or additional fees. China and Japan moreover differ regarding the number of domestic certifiers. In China there are 26, although these data are from 2008 (EU-China Trade Project 2008: 26), whereas 50 domestic certifying bodies operate in the organic sector in Japan (Ministry of Agriculture, Forestry and Fisheries 2015b).

For the case of China the fifth research aspect, namely the labeling of organic products, appears rather unclear at first glance. It has become apparent, however, that China identifies three food categories, according to the amount of chemicals that is used during production. For all of the three types food labels have been established (Sternfeld 2009: 6 f.). The fact that every certification body issues its own label and places it on the products in addition to the organic label might be the main source of confusion. Additionally, detailed information on what labels exist apart from the three mentioned above proves to be rather vague. During the research for organic labeling in Japan it became clear that the organic JAS mark is the only official label designating a product manufactured with organic methods (Maruyama 2010: 108 ff.). There are no specific labels that mark products with reduced chemicals, such as in China. As indicated in previous parts of this paper, foods with less chemical treatment do nevertheless exist in Japan; however, it is not clear how they are marked exactly. Additionally, the JAS issues labels for other than organic products as well, but the difference between these, as explained on the MAFF's English web page, could not be definitely clarified. A difference between organic product labeling in China and Japan has been identified: the latter country does not issue organic labels for aquaculture and apiculture products (Battini 2015), whereas the former has certification for crabs, shrimp, fish and other food from aquaculture production (International Trade Centre 2011: 5) as well as certification for apiculture products (Standardization Administration of the People's Republic of China 2005: Part 1, Chapter 1).

To sum up, it can be concluded that both China and Japan have a rather clear labeling system for organic products, whereas other food labeling, particularly including that of products with reduced chemical treatment, is partly unclear.

Regarding the sixth category of organic farming in China and Japan i.e. the respective laws, the research for this paper identified detailed legal documents in both countries. In comparison, both countries have established a clear legal framework for the certification of different categories of organic food products. The laws for requirements of organic goods are rather

detailed in both countries, containing, for example, the detailed definition of substances organic livestock and poultry that suffers from a disease may be treated with (Ministry of Agriculture, Forestry and Fisheries 2012d: Art. 4), as well as lists of substances that may be used as fertilizers in exceptional situations (Standardization Administration of the People's Republic of China 2005: Chapter 4.2.3.). Administrative requirements and proceedings of organic certification bodies are also specified by official laws in both countries.

With regard to institutions that support research and development activities in the organic farming sector, i.e. the seventh research factor of this paper, in China it is mainly actors in the private sector, i.e. domestic companies and international institutions that provide funding for these activities (Feng et al. 2005; in: Qiao 2011: 134 f.). Some research projects are also funded by the national government and by local governments (National Natural Science Foundation of China 2007; Hongyi Organic Farm 2011). However, there is little detailed information about what development projects exactly were publicly funded. Data on research funding are generally rather scarce. In Japan research on organic farming is partly supported by agencies affiliated to the MAFF, partly by universities, and also by private institutions (Ohtani 2007: 2; Tokyo University of Agriculture 2009; International Nature Farming Research Center 2015). It is unclear which of the supporters of organic research funds the biggest share and which the smallest.

The fact that research activities are conducted in both countries seems apparent, as well as the fact of different actors being involved in funding these activities. However, neither for China nor for Japan, it has become clear from the research of this thesis to what extent which actor is involved in the funding. The scarce information on details of funded projects may be an indicator that in both countries research and development of organic agriculture is not performed intensely, but is rather still in its infancy.

The eighth aspect addressed in the analysis of this paper is in what way Chinese and Japanese citizens are educated and informed about organic agriculture. In China organic farming is not explicitly mentioned as an individual topic or class in primary and secondary school curricula. Green cultivation methods are nevertheless embedded as part of more general school courses, namely in particular in environmental education. As stipulated by the government, environmental education has become a fixed chapter in school education in China. This has moreover led to the establishment of *Green Schools* that lay a special focus on sustainable development topics in their education plan (Lin & Ross 2005: 74 f.). Such curricula are yet mainly implemented in China's metropolitan areas, as the awareness of environmental

topics is generally higher among the urban population (Duan et al. 2014: 118). Chinese universities also offer courses on organic farming; however no study programs have been identified that focus entirely on biological agriculture (Qiao 2010). Some educational activities also take place as a result of private initiatives at organic farms (GoodtoChina 2015). In Japan environmental topics are also part of school curricula, but other than in China, there has not been a detailed government plan to support such courses. However, a revision of the *Basic Act on Education* now includes the intention to enhance the teaching of environmental topics in schools (Ministry of Education 2006: Art. 2). The availability of organic agriculture in higher education is similar to that in China. Japanese universities also offer more general study programs that give students the opportunity to take individual classes on organic farming, but there is no entire study program on the topic (Shinshu University 2010). In Japan private initiators have been establishing education courses at their organic farms, just as in China (Tokyo Weekender 2011).

The integration of organic agriculture into the education system has proven as very similar in both countries studied. The only difference that could be detected is that in China environmental education has been promoted more intensely by official authorities than in Japan and that in China a whole school concept which actively supports environmental awareness has developed as a result.

The ninth factor that has been analyzed is the organic market conditions, which also included the research of data about distribution channels in each country, about price premiums, share of organic farmland, and the types of bio products manufactured. Although China's farmland area cultivated with biological methods is almost 200 times larger than that of Japan the share of organic areas is only 0.4 % of the entire agricultural area in China. Japan's share of the biologically cultivated area is only slightly less than that of China. However, regarding the total size of both countries, it seems remarkable that China with its huge land resources does not use more of them for organic cultivation. Generally speaking, the share of organic farmland in both countries is similarly low, especially when looking at shares in other countries, such as Austria (almost 20 %), Sweden (14.1 %), or Uruguay (6.29 %) (Willer & Lernoud 2012: 44). In China the amount of produced organics is equal to 2.4 billion USD per year (International Trade Centre 2011: 5 f.), whereas in Japan an equal of 1.5 billion USD of organic products are annually manufactured (Ministry of Agriculture, Forestry and Fisheries 2013; in: IFOAM 2015: 1). These data correspond with the larger area of organic farmland China disposes of, which results in a larger amount of produced organic goods in China than

in Japan. However, if China possesses a total organic area that is 200 times larger than that of Japan, then the Chinese annual organic product value, which is not even three times higher than that of Japan, does not seem to stand in a comprehensible relation. The total number of producers cannot be compared, as there are no official data for that category in China.

In both countries a wide range of products is organically produced, Japan however concentrates on the production of organic vegetables, organic rice and organic soybeans (Ministry of Agriculture, Forestry and Fisheries 2012e). China imports organic sugar, honey, nuts and organic products that are not manufactured in China (coffee, tropical fruit) (International Trade Centre 2011: 5 f.), whereas Japan primarily imports organic soybeans, vegetables, and fruits from other countries (Ministry of Agriculture, Forestry and Fisheries 2011; in: Organic Trade Association 2011: 2 f.). The fact that Japan imports organic soybeans, vegetables and fruit, whereas China's organic imports include products such as honey, nuts etc., implies that in Japan the demand for organic products exceeds the supply. The main imported products in Japan are such that are the primary products in the Japanese daily diet, which suggests that the domestic bio production of these major foods is not sufficient to satisfy the demand for these products among the Japanese. In comparison, the imports in China are only made up of ingredients for meals, which are not necessarily part of the Chinese traditional diet. Hence, one can conclude that the domestic organic products sold on the Chinese market roughly satisfy what the population demands for everyday consumption.

Production areas for organics are rather evenly distributed in Japan (Ministry of Agriculture, Forestry and Fisheries 2009b; in: Kirchner 2012: 31), whereas in China they are concentrated in eastern and northeastern provinces, although some organic livestock production has been springing up in the west as well. According to research data the demand for organic products in big Chinese cities is higher than in rural areas, as the accumulation of population with enough financial means to buy the costly organics is higher in cities (Lagos et al. 2010: 2). The demand for organics may thus be especially high in those parts of the country, as many of these metropolises are located in the northeastern and eastern regions. For Japan, one could thus conclude that as organic production is evenly distributed, the high-income-population that can afford organic food may not be limited to big cities. However, the even distribution of organic production might also be a result of other phenomena. One cannot ignore that the total size of the country is only a small percentage of China, so that there is limited living and production space in Japan, which forces both the population and the producers to spread out across the country. Additionally, the traditional *Teikei* system might also be a

reason for the even distribution of organic production. *Teikei* communities have developed over several decades across the entire country, and due to the fact that they focus on organic production the manufacturing of bio goods by these communities is practiced throughout Japan.

Distribution channels for organic products have developed similarly in both China and in Japan. Both countries dispose of specialty shops, supermarkets that offer organics, home delivery systems, markets, and farmers who sell their produce directly to consumers. However, through the big popularity of *Teikei* in Japan the distribution channel mentioned last is more developed there. In China, on the contrary, renting farm plots for organic growing has increasingly become popular among urban consumers (Lagos et al. 2010: 2). The prices of organic products are very high compared to conventionally produced goods in both Asian countries. This also leads to the phenomenon that organic food is mainly bought by citizens with high incomes, whereas the low-income population is inevitably excluded from purchasing bio food. Regarding a market for organic feed, no data could be found for either country, which is why this category cannot be compared at this point.

The tenth aspect that has been analyzed regarding China and Japan was the existence of particular factors within society that may serve as drivers for organic sector development by supporting the promotion of bio farming among the population. The research focused on actors and activities advocating organic farming, consumer behavior and how organics are promoted. It proves difficult to estimate the actual effect groups and individuals have on society in China and Japan merely by relying on secondary sources. In order to measure and assess that, a separate study would have to be conducted including, for example, interviews among the population. Within the feasible realm of this paper, however, the fact that promotion activities and the willingness to support organic farming exists among societies in both Asian countries has been demonstrated. Although many non-governmental organizations in China are actually affiliated with the government (Ru & Ortolano 2009: 148 f.), individual groups and people from the civil society have established ways to work independently in promoting environmental protection and sustainable farming among society. A number of independent environmental NGOs organized by citizens are hereby the major actors in China (Ru & Ortolano 2009: 148 f.). In Japan the government does not control organizations that are active among society. The main actors in society to promote organic farming are the JOAA, cooperatives of farmers or consumers, scientific researchers and environmental NGOs. However, although an exact assessment regarding this factor cannot be made, the fact that com-

munity-supported agriculture in the form of *Teikei* is so popular in Japan and may thus be an indicator that the Japanese population can act more independently from governmental constraints than Chinese citizens should be mentioned at this point. The tendency of a more sovereign society in Japan as opposed to China is moreover underlined by the fact that competitions with prizes awarded for environmentally-friendly activities are principally government-organized in China and mainly initiated by citizen groups or private companies in Japan.

As has already been mentioned before, the main type of consumers of bio food in China is people with high salaries. The same data have not been explicitly found for Japan, which is why this point cannot be exactly compared. Considering the widespread *Teikei* groups in Japan, however, one might assume that in Japan it might not only be wealthy consumers purchasing organics. Additionally, in *Teikei* communities prices are based principally on negotiations between the farmers and the consumers, so that one could presume that there could be cases in which *Teikei* groups decide on acceptable prices. An interesting phenomenon among Japanese consumers of organics is moreover that there are a large number of farmers cultivating bio products without official organic JAS certification (Davis 2012: 125 f.). These farmers nevertheless have a consumer base strong enough to continue their farming operations. This means that in Japan personal ties and trust among the population in the same area is an important driver of organic agriculture. In China, evidence for such trust-based consumer-producer relationships in the organic sector has not been found; on the contrary, many Chinese sources report of consumer distrust in organic food, as fraud cases regarding mislabeled products are a regular phenomenon (Lagos et al. 2010: 11 f.).

In China the most influential factors on purchasing organic products are safety and health concerns as well as the income level (Yin et al. 2010: 1365 f.). In Japan safety is the most important reason to buy organics, too, however, it is followed by aspects such as environmental protection, taste, or farmer support (Japan Organic Agriculture Association 2009, Japan Organic Agriculture Association 2010; In: Yoshino 2010: 267). The difference to the views of Chinese consumers in those last aspects is remarkable. This clearly indicates a higher level of consciousness of environmental issues and the awareness of the need to contribute towards protecting natural resources among the Japanese population. This could also explain why there is more activism within Japan's society than within the Chinese. Stating farmer support as one of the reasons to buy organics, furthermore suggests that Japanese citizens have a high sensitivity for other members in society. This might also be an explanation for an ongoing popularity of *Teikei* communities, as these clearly help to support local farmers. Chi-

nese consumers of organics, however, appear to attach more importance to what effects the purchase of organic products has on their personal life and well-being. However, a similar aspect among consumers in China and Japan is that in both countries organic products are especially attractive to young urban people, who are particularly responsive to modern trends coming from abroad (International Trade Centre 2011: 8 f.; Motomura 2013: 11).

As to institutions that actively engage in advertising organic products, many similarities have been found in both countries. However, two factors that do not exist analogously in each country are the following. In China membership systems that include discounts and other privileges for members, are an additional tool that is popular among farms and trading firms to advertise organic farming (International Trade Centre 2011: 12 f.). In Japan word-of-mouth recommendation is one of the advertising means for organic consumption (Liu et al. 2004: 11). The fact that a commercial channel is used to attract Chinese consumers, whereas Japanese consumers respond to what neighbors tell them, might only be coincidental, particularly as both methods are only one small channel for promotion out of many; however, incidentally it coincides with the previous assumption that personal ties are more crucial among Japanese, whereas Chinese consumers are more respondent to things that have a positive effect on them personally.

The eleventh aspect that has been addressed in the analysis is problems that exist in the Chinese and Japanese organic sector. A problem that is mentioned in sources for both countries is the lack of awareness of the existence of organic products and the confusion about different types of foods with reduced chemical treatment among the population. This is a sign that, although both China and Japan have established official labels that mark organic products, the promotion of these labels is insufficient. The governments would either have to increasingly initiate broad campaigns to spread explicit and clearly laid out information on organic certification and labeling through channels that would reach the entire population, and, for example, start the campaigns in schools, where at least the young generation would entirely be reachable. Another similar issue in China and Japan is the unclear division of responsibilities among national and local authorities. The organic sector seems to be embedded in a vague and unsteady administration system in both countries. In China authorities do not get clear orders about their duties, and in Japan each local government has its own way of implementing rules set by national law-makers. This results in loopholes for fraud and intentional mislabeling and in the end influences the consumers' distrust in organic products. In both countries there is thus an urgent need for reforming the administrative structures in the organ-

ic farming sector by establishing clear rules for every institution involved in certification and labeling. Although more constraints have been mentioned in sources of both countries, those mentioned in the paragraph above appear to be most influential, as they are rooted within entire systems.

The purpose of this thesis has been to detect supportive elements and barriers regarding organic farming development in China and Japan. And as a result, similarities and differences of factors that influence the Chinese and the Japanese organic farming sector were to be identified.

In order to research these factors in the PRC and Japan, the more general research question of what structures are commonly considered as influential on organic farming development by experts, had to be answered first. Only then could the aspects derived be used as a research framework to be applied to the specific case studies of China and Japan.

So as to find the influential factors, general pre-conditions for effective bio agriculture development were extracted from scientific literature. Altogether three main spheres have been found that appear to have a positive effect on the development of organic farming in a country, namely the political environment, economic circumstances, and support for bio agriculture within society. Each of the three areas contains individual factors that serve as the actual supportive elements, e.g. positive market conditions or clear legal guidelines. These individual factors have been assembled; and each has separately been researched for China and Japan.

The specific research questions regarding the existence of supportive structures in the Chinese and Japanese organic farming sector, to what extent they are developed, if they reveal common features, and what problems prevail in bio agriculture of both countries can thus be answered in the following way:

As has been demonstrated in the analytical part of this paper China and Japan both dispose of structures that foster the development of organic farming.

Concerning the political surroundings that have been analyzed, both countries have not only included the need for organic agriculture support in their national policies, they have also issued substantial laws that regulate organic food production and processing, and they have established national certification systems in order to standardize and ensure proper labeling of organic products.

Numerous institutions and centers have emerged in China and Japan that provide information and advice for organic farmers, even though these services are mostly offered by private companies, education institutions, or farmers themselves, rather than by government authorities, as suggested by scientific researchers, such as Michelsen (Michelsen 2002; in: Stolze & Lampkin 2009: 239). Regarding this aspect, the political support can thus be regarded as partly insufficient in both countries in equal measure.

Financial support is an aspect that seems insufficiently developed particularly by official authorities in China. Whereas the Japanese governments at national and local levels have established a balanced system of financial support possibilities, Beijing has not succeeded in doing so to the same extent. The PRC still lacks government-funded financial subsidies for organic farmers, in particular those engaging in small-scale production. However, in the private sector possibilities for bio farmers to receive financial support do increasingly develop.

As to research and development funding of organic farming, the information found was not sufficient enough to allow a realistic comparison between China and Japan. The fact that individual funding programs by the government exist in both countries should nevertheless be highlighted at this point. However, in China funding for research concerning organic farming is rather provided by institutions in the private sector.

Government authorities have increasingly been active to include topics related to environmental issues, including organic farming into school curricula in both countries studied. Universities in China and Japan moreover offer study programs that provide the opportunity to take classes on organic farming. As there are no school subjects or university programs that entirely focus on bio cultivation methods, it nonetheless appears that sustainable agriculture has not yet become a top priority teaching topic by itself in either country. Concerning this paper's research criteria, this means that the political environment in China and Japan has not shown sufficient effort in developing education about organic farming so far.

Elements from the political setting that support the Chinese and Japanese organic farming sector and that appear to have been installed in both countries in an efficient way are: National guidelines, certification, labeling, laws and standards. However, this does not exclude the possibility that some insufficiencies may nevertheless remain within these supportive political factors. In theory, each element mentioned above has been elaborated by the governments of both countries rather in detail, but the fact that consumers are confused about different types of food labels and the fact that fraud cases by certifiers and retailers are regu-

larly reported in both countries, suggests that the implementation of some regulations is partly deficient and that there is thus still room for improvement. Further factors that deserve more active engagement by the government are: financial support in China, government-supported advisory centers in China and Japan, research funding as well as school subjects and university programs on sustainable agriculture in both countries.

With regards to the economic circumstances, the positive aspects with both countries are that at present the range of bio products available in China and Japan is very broad and that there is a big variety of places at which consumers can buy organic food. The insufficiencies in the economic area, however, seem to exceed the positive aspects. It is not only the fact that prices of organic products are very high and thus only affordable for a small percentage of consumers that represents a major impediment to further development of the organic market. More significant even is that the low share of organically cultivated farmland in both countries reflects the immense barriers China's and Japan's organic farming sectors are still facing – not only limited to problems in the economic surroundings. The low share is a result arising from the entirety of all underdeveloped support mechanisms – regardless of the area – in both country cases. According to the FiBL and the IFOAM the percentage of organic farmland in a country's farming sector is one of the most crucial factors that determine the degree of development of the sector (Willer & Kilcher 2012: 25). This leads to the assumption that in spite of all the supportive structures for bio agriculture development identified for China and Japan, the organic farming sector of both countries appears to be in its infancy.

As to supporting factors within Chinese and Japanese society, the analytical part of this paper has demonstrated that the Japanese population is more government-independent than the Chinese. Japanese citizens are rather autonomous in forming groups, e.g. NGOs that engage in promoting organic farming throughout the population, whereas in China the registration and practices of such groups are often regulated by official authorities. This consequently sets boundaries to citizen initiatives in China. However, the fact that Chinese citizens have found ways to establish some independent associations that promote organic farming has to be mentioned at this point. The motivation to engage in environment-friendly activities through awards and prizes is supported by government institutions in China, and mostly by private firms and citizen groups in Japan, which also indicates that the Chinese government prefers to pull strings instead of granting more sovereignty to the population.

Another factor that appears to support a society in favor of organic farming in Japan is the importance Japanese people seem to attach to trust-based relationships which result in

many organic farmers being able to afford bio production without official JAS certification. This assumption is furthermore underlined by the fact that among Japanese consumers the most important reasons to buy organic food, aside from health benefits, are environmental protection and farmer support. As practices such as *Teikei*, are very common in Japan, it seems natural that many members aim to maintain these systems and, due to the close ties with the producing farmers, are thus willing to secure their existence. Japanese population thus shows a more community-focused and environment-oriented attitude, whereas in China the personal effects of organic product consumption are the main drivers for consumers to purchase organics. Due to the scarcity of *Teikei*-like communities and a large consumer base of organics in urban supermarkets in China, consumers seldom have the opportunity to establish personal relationships with farmers, which might be a major impediment for the wish to support organic farming out of empathy and appreciation. The distrust in bio food that some parts of the Chinese population have due to fraud scandals in the organic sector only add to the impression that the enthusiasm for supporting bio cultivation methods is low among consumers.

One factor that can support awareness of organic farming, however, proves as very similar in both countries, namely the channels through which promotion for that sector is carried out. Indirect promotion through recent food scandals occurs both in China and in Japan; additionally, advertisements by media, supermarkets, and organic farms raise awareness for organic products in both countries.

Aspects that inhibit further development of the organic farming sector are numerous. Whereas China primarily struggles with a vague division of responsibilities among authorities, cases of fraud, and a weak civil society – to mention only a few – in Japan mislabeled food products and consumers who are confused about different food labels, amongst other issues, pose major impediments to further development of the country's organic farming sector.

Put in a nutshell, this paper has shown that there are similarities and differences regarding the analytical results of individual research criteria evaluated for each country case. The majority of similarities can apparently be attributed to supportive structures established within a political frame, whereas the greatest differences between China and Japan have been identified among the social factors. Both countries show the very existence of political, economic, and social aspects that contribute to organic farming development. The degree, to which each individual aspect has evolved, however, reveals a variation by country, i.e. some structures are developed more extensively in China, whereas others are developed more ex-

tensively in Japan. Nevertheless, due to many existing barriers for organic farming development in both countries, the room for improvement is enormous.

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## LIST OF ABBREVIATIONS

|        |                                                                                  |
|--------|----------------------------------------------------------------------------------|
| APEC   | Asia-Pacific Economic Cooperation                                                |
| AQSIQ  | General Administration of Quality Supervision, Inspection and Quarantine         |
| BEP    | Basic Environment Plan                                                           |
| CCAA   | China Certification and Accreditation Association                                |
| CGFDC  | China Green Food Development Center                                              |
| CNAS   | China National Accreditation Services for Conformity Assessment                  |
| CNCA   | Certification and Accreditation Administration of the People's Republic of China |
| COFCC  | China Organic Food Certification Center                                          |
| CSA    | Community Supported Agriculture                                                  |
| EU     | European Union                                                                   |
| FAMIC  | Food and Agricultural Materials Inspection Center                                |
| FAO    | Food and Agriculture Organization of the United Nations                          |
| FiBL   | Research Institute of Organic Agriculture                                        |
| GONGO  | Government-organized Non-governmental Organization                               |
| IFOAM  | International Federation of Organic Agriculture Movements                        |
| INFRC  | International Nature Farming Research Center                                     |
| JAICAF | Japan Association for International Collaboration of Agriculture and Forestry    |
| JAS    | Japanese Agricultural Standard                                                   |
| JIRCAS | Japan International Research Center for Agricultural Sciences                    |
| JOAA   | Japan Organic Agriculture Association                                            |
| JONA   | Japan Organic & Natural Foods Association                                        |
| MAFF   | Ministry of Agriculture, Forestry and Fisheries                                  |
| MoA    | Chinese Ministry of Agriculture                                                  |
| NARO   | National Agriculture and Food Research Organization                              |
| NGO    | Non-governmental organization                                                    |

|       |                                                          |
|-------|----------------------------------------------------------|
| NSOP  | China National Standard for Organic Products             |
| OAP   | Organic Action Plan                                      |
| OCO   | Organic Certification Organization                       |
| OFDC  | Organic Food Development and Certification Center        |
| OFRC  | Nanjing Global Organic Food Research & Consulting Center |
| OTRDC | Organic Tea Research and Development Center              |
| PEAC  | Pesticide Eco-Alternatives Center                        |
| PRC   | People's Republic of China                               |
| SEPA  | State Environmental Protection Agency                    |
| U.S.  | United States of America                                 |
| USDA  | United States Department of Agriculture                  |
| WIT   | Wantai Quality Certification Co. Ltd.                    |

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## APPENDIX

### Appendix 1

| Country                     | Hectares   |
|-----------------------------|------------|
| Australia                   | 12 001 724 |
| Argentina                   | 4 177 653  |
| United States of America    | 1 948 946  |
| Brazil                      | 1 765 793  |
| Spain                       | 1 456 672  |
| China                       | 1 390 000  |
| Italy                       | 1 113 742  |
| Germany                     | 990 702    |
| Uruguay                     | 930 965    |
| France                      | 845 442    |
| India                       | 780 000    |
| Canada                      | 703 678    |
| United Kingdom              | 699 638    |
| Austria                     | 543 605    |
| Poland                      | 521 970    |
| Czech Republic              | 448 202    |
| Sweden                      | 438 693    |
| Falkland Islands (Malvinas) | 398 806    |
| Turkey                      | 383 782    |
| Mexico                      | 332 485    |
| Greece                      | 309 823    |
| Ukraine                     | 270 226    |
| Uganda                      | 228 419    |
| Peru                        | 216 756    |
| Portugal                    | 201 054    |
| Romania                     | 182 706    |
| Tunisia                     | 175 066    |
| Slovakia                    | 174 471    |
| Finland                     | 169 168    |
| Latvia                      | 166 320    |

**Table 1.** World: Organic agricultural land (including in-conversion areas) by country 2010 (sorted) (see Willer & Lernoud 2012: 39)

## Appendix 2

| Country                     | Share  |
|-----------------------------|--------|
| Falkland Islands (Malvinas) | 35.9 % |
| Liechtenstein               | 27.3 % |
| Austria                     | 19.7 % |
| Sweden                      | 14.1 % |
| Estonia                     | 12.5 % |
| Switzerland                 | 11.4 % |
| Czech Republic              | 10.5 % |
| Latvia                      | 9.4 %  |
| Slovakia                    | 9.0 %  |
| Italy                       | 8.7 %  |
| Dominican Republic          | 8.5 %  |
| Faroe Islands               | 8.4 %  |
| Samoa                       | 7.9 %  |
| Sao Tome and Principe       | 7.9 %  |
| French Guiana (France)      | 7.8 %  |
| Finland                     | 7.4 %  |
| Timor-Leste                 | 6.6 %  |
| Uruguay                     | 6.3 %  |
| Slovenia                    | 6.3 %  |
| Denmark                     | 6.1 %  |
| Germany                     | 5.9 %  |
| Spain                       | 5.9 %  |
| Portugal                    | 5.8 %  |
| Norway                      | 5.5 %  |
| Lithuania                   | 5.4 %  |
| United Kingdom              | 4.3 %  |
| Channel Islands             | 4.2 %  |
| French Polynesia            | 3.8 %  |
| Greece                      | 3.7 %  |
| Belgium                     | 3.6 %  |

**Table 2.** World: Shares of organic agricultural land by country 2010, sorted (see Willer & Lernoud 2012: 44)

## Appendix 3

| Areas of concern                    | Organic Action Plan policies                                                                                                                                                                                                                                                                                                               |
|-------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Information</b>                  | Promotion campaigns for consumer awareness<br>Educational information<br>Strengthening labeling and control<br>Market and production data                                                                                                                                                                                                  |
| <b>Training and education</b>       | Farmer education for organic systems development<br>Curriculum development for basic and higher education<br>Advisory services for farmers and organic food businesses                                                                                                                                                                     |
| <b>Research and development</b>     | Improving the efficiency of production techniques<br>Enhancing processing in line with production of high quality organic food<br>Facilitating organization and networks for research<br>Benchmarking organic food and farming performance<br>Analyzing impact of organic farming<br>Energy use and climate change                         |
| <b>Producer support</b>             | Financial support for conversion to & maintenance of organic farming systems<br>Encouraging cooperation and effective management<br>Improving economic performance of organic farming and food businesses<br>Support less developed sectors where there is consumer demand                                                                 |
| <b>Processing support</b>           | Investment for processing facilities<br>Innovation and development for processing<br>Development of infrastructure for improved processing and supply chains<br>Identify market success factors                                                                                                                                            |
| <b>Market development</b>           | Promotion and support of key market channels<br>Improve marketing efficiency<br>Encourage product diversification                                                                                                                                                                                                                          |
| <b>Certification and inspection</b> | Extension of standards to cover new areas – both food and non-food<br>Enhancement & development of standards in line with consumer expectations<br>Improvement of the efficiency of certification and inspection systems<br>Transparency of the results of inspection and certification (consistent with protection of individual privacy) |
| <b>Institutional development</b>    | Support &/or promotion of stakeholder organizations<br>Coordination of sectoral interests<br>Development of appropriate strategies (e.g. GMO)<br>Fund raising<br>Policy development                                                                                                                                                        |

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**Action plan admin  
and development**

Evaluation and monitoring of the Action Plan

Participation and contribution of advisory committees and expert groups

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**Table 3.** Areas addressed by Organic Action Plans – overview of different Action Plan policies (see Schmid et al. 2008: 25 ff.)

## Appendix 4

| Barriers                                                  | Total %<br>(n = 185) | General<br>sample %<br>(n = 119) | Targeted<br>(OF<br>experienced)<br>% (n = 66) |
|-----------------------------------------------------------|----------------------|----------------------------------|-----------------------------------------------|
| <b>1. Market issues</b>                                   | 27.2                 | 33.9                             | 18.7***                                       |
| Lack of consumer willingness to pay premiums              | 14.8                 | 19.6                             | 8.8                                           |
| Lack of consumer knowledge/education                      | 2.3                  | 1.6                              | 3.1                                           |
| Small market/marketing issues                             | 7.5                  | 11.4                             | 2.6                                           |
| Small scale issues                                        | 2.5                  | 1.2                              | 4.1                                           |
| <b>2. Information needs and Government support/policy</b> | 27.2                 | 20.8                             | 35.2***                                       |
| Large information needs                                   | 13.5                 | 12.2                             | 15.0                                          |
| Lack of research and development                          | 6.4                  | 3.3                              | 10.4                                          |
| Conversion costs                                          | 2.5                  | 2.4                              | 2.6                                           |
| Lack of extension/advice for OF                           | 1.8                  | 0.0                              | 4.1                                           |
| No overall research body or support                       | 1.6                  | 2.0                              | 1.0                                           |
| Bias from government/research bodies                      | 0.2                  | 0.0                              | 0.5                                           |
| Lack of practical farm demonstrations                     | 0.2                  | 0.4                              | 0.0                                           |
| Scientific research randomness                            | 0.2                  | 0.4                              | 0.0                                           |
| Misinformation from science about OF benefits             | 0.2                  | 0.0                              | 0.5                                           |
| Scientific perception of OF                               | 0.2                  | 0.0                              | 0.5                                           |
| Training needs for agricultural professionals             | 0.2                  | 0.0                              | 0.5                                           |
| <b>3. On-farm issues</b>                                  | 25.6                 | 28.2                             | 22.3*                                         |
| Uneconomic/not profitable                                 | 13.7                 | 18.8                             | 7.3                                           |
| Farm scale issues                                         | 3.0                  | 2.9                              | 3.1                                           |
| Weeds                                                     | 1.6                  | 1.2                              | 2.1                                           |
| Produce appearance problems                               | 1.1                  | 1.6                              | 0.5                                           |
| Pest/disease problems                                     | 1.1                  | 0.8                              | 1.6                                           |
| Lack of nutrients in organically farmed soils             | 1.1                  | 0.4                              | 2.1                                           |
| Increased costs                                           | 1.1                  | 0.4                              | 2.1                                           |
| Long-term sustainability problems                         | 1.1                  | 1.2                              | 1.0                                           |
| Animal health issues                                      | 0.5                  | 0.0                              | 1.0                                           |
| Increased risk as a farming system                        | 0.5                  | 0.4                              | 0.5                                           |
| Difficulty in only using certified inputs                 | 0.2                  | 0.4                              | 0.0                                           |
| Lower yield problem                                       | 0.2                  | 0.0                              | 0.5                                           |
| Supply chain issues                                       | 0.2                  | 0.0                              | 0.5                                           |
| <b>4. Farmer acceptance</b>                               | 10.3                 | 9.0                              | 11.9                                          |
| Lack of farmer acceptance                                 | 7.1                  | 5.3                              | 9.3                                           |
| Lack of farmer knowledge and negative perceptions on OF   | 1.6                  | 1.6                              | 1.6                                           |
| Need for increased farmer skills                          | 1.1                  | 1.6                              | 0.5                                           |

| Barriers                                                     | Total %<br>(n = 185) | General<br>sample %<br>(n = 119) | Targeted<br>(OF<br>experienced)<br>% (n = 66) |
|--------------------------------------------------------------|----------------------|----------------------------------|-----------------------------------------------|
| Organic farming has a negative image                         | 0.5                  | 0.4                              | 0.5                                           |
| Certification issues/monitoring                              | 3.7                  | 3.7                              | 3.6                                           |
| Fragmented industry                                          | 1.8                  | 0.8                              | 3.1                                           |
| Property rights issues (contamination issues, gene transfer) | 1.1                  | 1.6                              | 0.5                                           |
| Land access/suitability of land for OF                       | 0.7                  | 0.8                              | 0.5                                           |
| Philosophical/religious/social factors                       | 0.7                  | 0.0                              | 1.6                                           |
| Public good aspect—inability to capture full benefits of OF  | 0.5                  | 0.8                              | 0.0                                           |
| OF as a new scientific paradigm                              | 0.2                  | 0.0                              | 0.5                                           |
| Globalization issues                                         | 0.2                  | 0.0                              | 0.5                                           |
| Negative media portrayal of OF                               | 0.2                  | 0.0                              | 0.5                                           |
| Refusal of banks to lend money for OF                        | 0.2                  | 0.4                              | 0.0                                           |
| Externality issue problem for OF from other farms            | 0.2                  | 0.0                              | 0.5                                           |
| OF will not feed the world                                   | 0.2                  | 0.0                              | 0.5                                           |

Statistical significance comparisons are only made between major barrier categories, not between sub-headings.

\*\*\* Significantly different from general sample at 1% level with a two tailed t-test.

\* Significantly different from general sample at 10% level with a two tailed t-test.

**Table 4.** Barriers named by professionals towards further adoption of organic farming (OF) (Wheeler 2008: 164)

## Appendix 5



Registration No.: \*\*\*\*\*

# ORGANIC PRODUCT CERTIFICATE

Name of the applicant: \*\*\*\*\* CO.,LTD.

3.2.4.1.1.1.1 Address: \*\*\*\*\*

Base Name: \*\*\*\*\*

Address: \*\*\*\*\*

Category of Certification: *Production*

The standards for the products:

*GB/T19630.1—200\* Organic Products: Production*

*GB/T19630.3—200\* Organic Products: Labeling and Marketing*

*GB/T19630.4—200\* Organic Products: Management System*

**Total Acreage:**

| Product | Area | Quantity | No. of Logo<br>Issued | 3.2.4.1.2<br>Way<br>of<br>Log<br>o<br>use |
|---------|------|----------|-----------------------|-------------------------------------------|
|         |      |          |                       |                                           |
|         |      |          |                       |                                           |
|         |      |          |                       |                                           |

*(Additional sheet is permitted with the same effect as the certificate perse)*

3.2.4.1.2.1 This is to certify that the above mentioned products and their production method have been inspected and found to be in conformity with the requirements of Implementation Rules for Organic Product Certification.

***DATE OF FIRST ISSUE:***

***DATE OF ISSUE:***

***DATE OF EXPIRATION:***

**Authorized by:**

SEAL

**Certification Body Name**

**Certification Body addresses:**

**Tel**

(CB logo)

(Accreditation mark)

Source: CNCA 2012: Appendix 2

## **Appendix 6**

### **Kurzzusammenfassung**

Diese Arbeit befasst sich mit unterstützenden politischen, wirtschaftlichen und sozialen Strukturen für die ökologische Landwirtschaft in China und Japan. Dabei wird untersucht, ob diese in beiden Ländern existieren, und in welchem Maß dies der Fall ist. Das Ziel ist, diese unterstützenden Faktoren beider Länder zu vergleichen.

Dafür werden Gegebenheiten identifiziert, die nach Meinung internationaler Wissenschaftler einen positiven oder negativen Einfluss auf die Entwicklung ökologischer Landwirtschaft im Allgemeinen haben. Die einzelnen Aspekte werden anschließend im Bezug auf China und Japan untersucht. Strukturen, welche sich als beeinflussend auf die Entwicklung des Bio-Landbaus erweisen, werden im politischen, wirtschaftlichen und gesellschaftlichen Umfeld verortet. Im Hinblick auf die beiden asiatischen Länder wird demnach einer Analyse folgender Faktoren nachgegangen: Staatliche Richtlinien, finanzielle Unterstützung, Bereitstellung von Beratungs- und Informationsdiensten durch den Staat, Zertifizierung, Kennzeichnung von Bio-Produkten, Regelungen und Gesetze, Finanzierung und Förderung von Forschung und Entwicklung, Erziehung und Informationsübermittlung, Markt für Bio-Produkte und ökologische Futtermittel, Vertriebskanäle, Bio-Aufschläge, nichtstaatliche Akteure, Motivation von Öko-Landwirten durch Preisauszeichnungen, Konsumenten von Bio-Produkten, Werbung für Bio-Produkte sowie existierende Hindernisse für ökologische Landwirtschaft. Die Analyse dieser Faktoren beruht auf den entsprechenden chinesischen und japanischen rechtlichen Bestimmungen sowie Quellen in der Sekundärliteratur.

Die Ergebnisse dieser Arbeit zeigen, dass China und Japan grundlegende Elemente zur Unterstützung ihres ökologischen Agrarsektors eingeführt haben, was auf ein großes Potential zur weiteren Entwicklung dieses Bereichs hinweist. Ähnlichkeiten bezüglich der Unterstützungselemente in China und Japan bestehen vor allem im politischen Kontext, wohingegen Strukturen in den Gesellschaften beider Länder die größten Unterschiede aufweisen. Hinzu kommt die Erkenntnis, dass es aufgrund bestehender Barrieren und Probleme im chinesischen und japanischen Bio-Landbau großer Bemühungen beider Länder bedarf, um ein umfassendes System zu schaffen, welches die weitere Entwicklung dieses Sektors in beiden Ländern vorantreibt.

## **Appendix 7**

### **Abstract**

This thesis deals with supportive governmental, economic, and social structures in the Chinese and Japanese organic farming sector. It thereby examines whether such structures exist in each country, and if so, to what extent they have evolved. The aim is to allow a comparison of the supportive structures for the Japanese and the Chinese organic farming sector.

Therefore factors regarded by international scientists as having a positive or negative influence on the development of organic farming in general are identified. The individual aspects are subsequently researched for China and for Japan. Factors that influence organic farming development are found in the political, economic, and social sphere of a country. Hence, the following points are examined for the two countries: National guidelines, financial support, official authorities that provide assistance and information, certification, labeling, laws and standards, funding and promotion of research and development, education and information, the market for organic products and organic feed, sales channels, price premiums, non-governmental actors, motivation of organic farmers through rewards and prizes, consumers of organics, the promotion of organic products, and existing barriers. The analysis of the factors is based on Chinese and Japanese laws and secondary sources.

The results of this thesis reveal that China and Japan have succeeded in establishing fundamental supportive elements for their organic sectors, and thus possess great potential for further development. Similarities primarily exist among supportive factors in the political sphere, whereas the greatest differences have been identified among the social sphere. Additionally, the fact that major insufficiencies within the two organic agriculture sectors have been revealed shows that extensive efforts are needed in order to ensure a supportive framework that will facilitate organic farming development in both countries in the future.

## **Appendix 8**

### **Lebenslauf**

#### Persönliche Angaben

|                     |            |
|---------------------|------------|
| Geburtsdatum        | 31.08.1985 |
| Geburtsort          | München    |
| Staatsangehörigkeit | deutsch    |

#### Ausbildung

|                   |                                                                                                                          |
|-------------------|--------------------------------------------------------------------------------------------------------------------------|
| Seit 03/2012      | Studium des Masters East Asian Economy and Society an der Universität Wien                                               |
| 02/2012           | Beeidigung als Übersetzerin der Chinesischen Sprache am Landgericht München                                              |
| 10/2011 - 02/2012 | Studium des Masters Angewandte Kulturwissenschaft an der Alpen-Adria Universität in Klagenfurt                           |
| 07/2011           | Abschluss: Staatlich geprüfte Übersetzerin für Chinesisch (Fachgebiet: Wirtschaft)                                       |
| 09/2008 - 07/2011 | Fortsetzen des Studiums am Sprachen- und Dolmetscherinstitut München sowie an der Ludwig-Maximilians-Universität München |
| 2007/2008         | Auslandsstudienjahr an der Universität von Qingdao/China                                                                 |
| 09/2006           | Studium der Sprachen Chinesisch und Französisch am Sprachen- und Dolmetscherinstitut München                             |
| 2005 - 2006       | Studium der Sinologie an der Ludwig-Maximilians-Universität München                                                      |
| 2003 - 2005       | Abitur an der Deutschen Schule Prag                                                                                      |
| 2002 - 2003       | Austauschjahr in den USA (Concord High School, New Hampshire)                                                            |
| 2000 - 2002       | Josef-Effner-Gymnasium Dachau                                                                                            |
| 1996 - 2000       | Ignaz-Taschner-Gymnasium Dachau                                                                                          |
| 1992 - 1996       | Deutsche Schule Lagos, Nigeria                                                                                           |

#### Praktika

|                   |                                                                                                                                                                                                                             |
|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 07/2009           | Praktikum im Bayern-Shandong Verbindungsbüro in Qingdao (Allgemeine Verwaltungs- und Sekretariatsaufgaben, Bearbeitung von Präsentationen, Pflege der Kontaktdatenbanken, Aktualisierung der Webseite des Verbindungsbüros) |
| 06/2008 - 08/2008 | Praktikum bei Siegle&Epple in Shanghai (Übersetzungen, Assistenz der Marketingabteilung)                                                                                                                                    |

## Berufserfahrungen und Engagement

|                   |                                                                                                                                                                                                                                            |
|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 08/2014           | Ehrenamtliche Mitarbeiterin im Camp Barretstown in Irland für Kinder mit schweren Erkrankungen: Einwöchige Betreuungs- und Übersetzungsarbeit im Rahmen des dortigen therapeutischen Rehabilitationsprogramms                              |
| 04/2014           | Ehrenamtliche Leitung eines einwöchigen Jugendprogramms der internationalen Non-Profit-Organisation CISV (Thema: kulturelle Diversität) in Fürstenfeldbruck                                                                                |
| Seit 02/2014      | Studentische Nebentätigkeit als Aushilfskraft bei Tee Gschwendner München                                                                                                                                                                  |
| 12/2013 - 02/2014 | Studentische Hilfskraft an der TU München. Mitarbeit an der Profkom-Studie (Professionalisierung von zukünftigen Ärztinnen, Ärzten und Lehrkräften im Bereich der Kommunikationskompetenz) des Lehrstuhls für Empirische Bildungsforschung |
| 08/2013           | Ehrenamtliche Betreuerin einer Gruppe Menschen mit geistiger Behinderung auf einer einwöchigen Freizeitreise in Italien                                                                                                                    |
| 08/2013           | Ehrenamtliche Betreuerin einer Jugendgruppe im Rahmen eines zweiwöchigen Sommerprogramms der internationalen Non-Profit-Organisation CISV (Thema: Menschenrechte und Umwelt) in Seoul/Südkorea                                             |
| 05/2013           | Teilnahme an nationaler Begleiterschulung der internationalen Non-Profit-Organisation CISV                                                                                                                                                 |
| 08/2012           | Ehrenamtliche Betreuerin einer Jugendgruppe im Rahmen eines vierwöchigen Kulturaustausches der internationalen Non-Profit-Organisation CISV in Guangzhou/China                                                                             |
| Seit 02/2012      | Mitglied bei <i>Campus Compass</i> (gemeinnütziger Verein um Studieninteressierten den Studieneinstieg zu erleichtern)                                                                                                                     |
| 10/2011 - 02/2012 | Studentische Nebentätigkeit als Übersetzerin im <i>Deutsch-Chinesischen Kulturnetz</i>                                                                                                                                                     |
| 08/2011           | Ehrenamtliche Betreuerin einer Gruppe Menschen mit geistiger Behinderung auf einer 14-tägigen Freizeitreise in Italien                                                                                                                     |
| 05/2011 - 07/2011 | Teilnahme am Gebärdensprachkurs <i>DGS I</i> der Ludwig-Maximilians-Universität München                                                                                                                                                    |
| Seit 05/2011      | Ehrenamtliche Mitarbeiterin bei OBA (Offene Behindertenarbeit) in München                                                                                                                                                                  |
| 04/2011           | Teilnahme am chinesisch-deutschen Literaturübersetzerwettbewerb <i>Kreuzworträtsel</i> des Deutschen Generalkonsulats Shanghai                                                                                                             |
| 04/2011 - 10/2011 | Studentische Hilfskraft an der TU München. Mitarbeit an der Profkom-Studie (Professionalisierung von zukünftigen Ärztin-                                                                                                                   |

nen, Ärzten und Lehrkräften im Bereich der Kommunikationskompetenz) des Lehrstuhls für Empirische Bildungsforschung

03/2010 - 10/2010

Arbeit als Hostess am deutschen Pavillon auf der Weltausstellung in Shanghai (Betreuung der Gäste, Vermittlung von Informationen zum Deutschen Pavillon, zur EXPO 2010 sowie zu Deutschland und China allgemein, Erklärung der Exponate, Führungen verschiedener Gruppen durch den Pavillon, Unterstützung des Pavillonbetriebs)

09/2008 - 06/2009

Studentische Nebentätigkeit als Übersetzerin des *AFS Schüler Blogs* im *Deutsch-Chinesischen Kulturnetz*

### Sprachkenntnisse

Deutsch, Tschechisch

Muttersprachniveau

Englisch, Chinesisch

Fließend in Wort und Schrift

Französisch

Fortgeschritten

Latein, Russisch

Grundkenntnisse

## **Appendix 9**

### **Eidesstattliche Erklärung**

Ich versichere an Eides statt, dass ich diese schriftliche Arbeit in allen Teilen selbstständig verfasst und keine anderen Hilfsmittel als die angegebenen verwendet habe. Die Stellen der Arbeit, die anderen Werken dem Wortlaut oder dem Sinn nach entnommen sind, habe ich in jedem einzelnen Fall unter Angabe der Quelle als Entlehnung kenntlich gemacht.

Ich versichere weiterhin, dass ich die vorliegende Arbeit oder Teile davon noch nicht als Prüfungsleistung in diesem oder einem anderen Studiengang eingereicht habe.



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Sarah Täumer

Wien, den 01. Februar 2015