Chapter 4
Agricultural Cooperation

Cooperative settings, if judged from a utilitarian perspective, can be justified in two distinct ways. The first is that individual utilities can be enhanced if forces are joined together in a cooperative setting, while the second argument concerns utility interdependencies. The fact that my well-being is dependent on my neighbour's well-being not only has added complexity within the mathematical landscapes of utility theory, but has also been used as a theoretical concept to explain practices such as donations (Yandle 1974).

As discussed above, cooperative settings are likely to cause moments of extreme happiness, although such cooperative settings might also result in extreme failure. In this chapter, the incidents of trial and error encountered along the agri-food chain will be investigated and commented on.

4.1 Producing Jointly

There is little doubt regarding the long historical tradition of joint land management. Indeed, the German revolutionary Engels (1882 (1962)) offered an overview of the long history of jointly organising agricultural production over the centuries, exaggerating, perhaps a little, the size of the communities during earlier periods of history in which members would care for each other. His conclusion was that contemporary private farming units, which had been liberated from aristocratic estate owners, would be far too small to be competitive, particularly if America chose to enter global food markets.

Less normatively, a question arises concerning why land management should have become less and less collective over the centuries. Engels explained this by means of political pressure, with an aristocratic elite using wars and laws to expropriate farmers, thereby exploiting them with regards to their accumulated holdings. Economists prefer a different explanation. They cite transaction costs as the main driving factor. If all decisions have to be taken jointly, the decision-making process

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requires a significant amount of time and effort, and more efficient management can often be achieved by putting land under the full control of a single skilled producer. The progress achieved by installing such small management units led, for example, to Alpine villages from around 300 AD that managed to supply themselves with sufficient heating and feeding material to sustain the inhabitants over the winter.

What was known during the 20th century as Marxism and what was largely built from a concept that Friedrich Engels helped to develop, led to the top-down organisation of collective land management in many countries. This resulted in cooperation within a hierarchy. In order to know more about cooperation in its pure form, it is more interesting to observe cooperative land management that has emerged through a bottom-up process. Hence, three examples of this process will be presented in this chapter.

While all three examples face their own specific challenges, they do not reflect the numerous attempts at joint agricultural production that have completely failed. An infamous history of such attempts is still waiting to be written and would probably begin with the British entrepreneur Robert Owen (1771–1858), who provided land that he split into "quadratic paradises" on which everybody was welcome to farm jointly. His experiment certainly suffered from the fact that most of the people who were attracted to the idea could not cope with society as it was—and it had to be abandoned after three years, during which time debts had been accumulated and members had become frustrated.

4.1.1 Alpine Grassland

When it was mentioned above that land in Europe originally used to be managed collectively before, over the centuries, it moved into private hands, this was correct for the majority of the agricultural area. Up to the present day, many forests are still owned by a cooperative. For the realm of agriculture, the summer farming areas in the Alps are the exception that proves the rule. Systematic readers of this book will remember the earlier brief encounter with the people who spend three months of the summer travelling into areas in which neither men nor cattle live during the rest of the year, using (once again) the Swiss situation as a case in point. Around half of these people work for private enterprises, while the others are employed by collective enterprises. Some of these collective enterprises are legally part of the municipality, while others are organised as cooperatives.

After previously determining the profile and motivations of their employees, it is perhaps worthwhile briefly explaining the economic rationales of these organisations in only being physically active between June and September. While the costs involved are mainly labour costs, the revenues come from two sources; they charge farmers to look after their animals and they receive transfer payments from the government because of the positive effects Alpine farming has on both biodiversity and the landscape.

In the Valais Canton, Switzerland's most remote area, one of these collective organisations has become relatively well-known among social scientists. Törbel has not achieved this prominence by being more innovative than the adjacent collective organisations, but rather because the anthropologist Netting (1974) happened to choose Törbel as a location for his research and, more importantly, the political scientist Ostrom (1990) used Netting's findings as a case study during her seminal systematic exploration of the realm of cooperation.

The origins of the Törbel cooperative date back to 1293, when one landowner sold four pastures to the local community. The owner retained the right to let his animals graze on the land, so that the financial arrangement was similar to today's mortgages. Unfortunately, we do not know whether and how the land was commonly managed during these early times.

The next information regarding the cooperative dates from the 14th century, when 40% of Törbel's land was commonly managed by nine farmers, while the remainder of the land was in the hands of aristocratic families. At that time, however, the role of the land rents being paid to aristocratic landlords was already in decline.

The formal foundation of the cooperative dates from February 1st 1483, when 22 local farmers signed a joint agreement to better regulate the use of their grassland and forests. One important element of this agreement was exclusion. If external persons were to purchase land in their village, it would not imply the right to use land belonging to the cooperative. This rule has remained fairly typical to date. Most Alpine land cooperatives are not accessible for external persons. Membership remains a privilege for those families who have been members for many generations.

The fact that there were no terms in the agreement concerning conflict resolution indicated that there was a broad acceptance of the terms of the collaboration. The next information source we have is an inventory of the cooperative, which was recorded in 1507. A more comprehensive collection of legal regulations was then introduced in 1517, which have remained valid until now. In particular, a second provision prohibiting the overuse of the grassland was installed. Each member of the cooperative was only allowed to send as many cows to the common land during the summer as he was able to feed through the winter; otherwise, high penalties would apply. Additional prescriptions regarding immigration and emigration, hunting, veterinary control, dispute settlement, village administration and the construction of joint housing were added to the regulations in 1531.

Törbel and many other cases of collective Alpine grassland management that have persisted over the centuries show that this type of land lends itself to the possibility of collective management. The main conclusion Netting (1974) derived from his research concerned the importance of natural conditions. It was no coincidence, he argued, that arable land, intensive meadows and settlement areas were rarely collectively managed, while forests and extensive pastures were more often collectively owned and managed. In fact, Alpine pastures offer several amenities when managed collectively:

– If everybody had to look after their own animals, particularly in the case of herding, labour costs would be much higher.

Table 4.1 Decisive factors for cooperative land use

	Collective land use	Individual land use
Production value	Low	High
Potential for intensification	Low	High
Use frequency	Low	High
Use dependency	Low	High
Yields	Low	High
Area	Large	Small

- There would be a need for a lot of fences and rules of access for remote pastures in the case of private properties. Control costs would also be much higher.
- Avalanches can be better prevented by forests if forest management is jointly planned.
- It is likely that externalities are taken into account more strongly if a larger number of local stakeholders are involved in decision-making process.
- If stones obtained from the land can be used without limitations, then it reduces transaction costs.

All these considerations can be generalised into an appraisal of the merits of collective land use, as depicted in Table 4.1. Based on this appraisal, large, extensively used areas appear to offer more benefits than pitfalls if they are managed collectively.

4.1.2 African Pastoralism

Studying the Swiss case highlighted the significant importance of natural factors. In Switzerland, the political framework has remained extremely stable over the centuries, meaning that the effects of changes in the institutional framework could not be studied appropriately in Switzerland. That does not mean, however, that political forces are unimportant. Pastoralism in Africa, which was described as "the least expensive method of livestock raising" by Konczacki (2014: 168), is a rather convenient example of the importance of this set of factors.

Mobility is a convenient case in point. The collective use of grassland only works if herds can move freely in order to avoid overgrazing on single spots of lands. However, if the political situation does not allow mobility, it becomes vital to adapt the regime in the best possible fashion. The sustainable management of collectively used land can only be achieved if natural and political conditions are aligned in an appropriate way.

A significant amount of African grasslands are not the subject of clear property titles and they are jointly managed by local groups. Nevertheless, these groups often allocate well-defined rights of use to their members, frequently taking into account flooding or dry periods.

Some scholars criticise the European perspective for misperceiving African landscapes as natural, while, in fact, they are strongly shaped by cultural influences (Haller et al. 2013). Such misunderstandings hamper a targeted discourse regarding appropriate options for development.

The Kafue Flats in Zambia offer a very well-documented example of the challenges such landscapes face today, challenges that range from a distortion of the natural environment (climate change leading to increased erosion and decreased quality of grasses) to the transformation from a collective to a private institutional setting initiated by colonial and postcolonial powers (e.g. Haller et al. 2013).

Today's tribes have inhabited the Kafue Flats since around 1800. They number around 27,000 persons, resulting in a population density of 18 persons per square kilometre. As the lowland is flooded during certain times of the year, villages were installed on the highland. The tribes originally had a chief who was able to define rules of access to the grassland that were broadly accepted. Spiritual aspects used to play an important role in this process. The spirits of the ancestors were asked to support the contemporary institutional framework, while ritual activities had to be carried out when moving the cattle. Every tribe consisted of several camps, with every camp housing several families who benefited from the land. A camp's coordinator was usually reimbursed with one calf per family per year. His job profile comprised

– settling emerging disputes,
– avoiding conflicts through good planning and
– defending the camp against predators.

In many cases, the camps had agreements with other camps so that mutual grazing would be tolerated.

The Kafue Flats represent a good example of the unintended consequences of measures instituted as a result of good intentions. One of these good intentions was the electrification of the region, for which a large dam was built in order to generate water power. However, the dam worsened the natural conditions of the flats. Bushes and invasive crops had to compete with the grass, which meant that less cattle in a less healthy state could be fed on the land.

Many economists, including those working for the World Bank and the International Monetary Fund, consider clear property rights to be a precondition for economic development. During the 1980s in particular, this led to clear recommendations being made to many governments, including Zambia's, to define property rights. The government complied with such recommendations in 1995 by allocating the right to issue property certificates to the president as well as tribal chiefs. This was intended to generate incentives for investments in the land. In the Kafue Flats, traditionally a stronghold of the opposition, one of the opposition politicians managed to obtain property rights over large segments of the land so that he could charge the local population for tenure. At the same time, a local chief began an irrigation project with the aim of improving the food security of the land. Additionally, as another change, the state introduced inheritance rights, which also supported property rights concerning the cattle.

It is, of course, more difficult to wander around with your cattle if you have to ensure that you do not accidently enter land that you are forbidden to access. The introduction of property rights therefore decreased the pastoralists' mobility considerably. In addition, the new actors started using land that had been traditionally restricted to the native population, partly illegally. Both factors resulted in the overgrazing of the land, thereby causing a decrease in the quality and productivity of the land. As a result of such natural and institutional changes, Merten and Haller (2008) could show a sharply decreased level of food intake among the local population as well as the impaired growth of children.

As Merten and Haller (2008) noted, "the paradox of a state that is simultaneously absent and present" is causing grave distortions in society. The state is present where traditional institutions are dismantled and replaced by new ones, but it is absent where the new framework needs to be implemented in a reliable and sustainable way. After all, pastoralism in the Kafue Flats is an example of a bottom-up cooperative scheme that is being replaced by more market-based settings—with doubtful outcomes.

4.1.3 The Kibbutzim

Although "Israel" may be the initial association when people hear about the Kibbutzim, this way of institutionalising cooperative production is actually older than Israel itself. Jewish settlers, having few chances to organise communities except for joint farming, founded the first Kibbutz in 1909 in Palestine. For Jews in Palestine, that is, before Israel was founded in 1948, the Kibbutzim were more or less the only institutionalisation of Jewish communal life.

This situation changed, of course, when Jews got their chance to run their own state. The young state of Israel attracted a lot of immigrants. In particular, hundreds of thousands of immigrants from Eastern Europe, often with little formal education, ended up in the Kibbutzim as low-cost workers. They soon dominated agricultural production. The 1970s can be considered the heyday of the Kibbutzim as the institutionalisation of joint agricultural production. They combined a rural work environment with a middle-class living style.

Russel et al. (2011) elaborate the challenges that the Kibbutzim subsequently faced, which can be summarised in three main points:

- While the Kibbutzim had been constructed around the notion of joint property and the cooperative management of assets, an increasing number of labour contracts with external persons provided a challenge to the original concept, since there were clearly differences in wealth between insiders and outsiders.
- The cooperative momentum that made individuals forget about their personal standard of living was part of the pioneering spirit of the young state of Israel. It is natural that this pioneering spirit faded over time, and with it, the willingness to live an ascetic life.

- Internationally, the downfall of real-world socialism did not have an encouraging effect on the concept of cooperative and solidary production.

The Kibbutzim survived, however, by adapting to external changes. They started, for example, to acknowledge private property, which was particularly important for many members when it came to their place of residence. They also started to install a differentiated wage system. Further, parts of their cooperative organisations were privatised, for example, educational or health service units. The most consequential step that was sometimes taken was the transformation into a Moshav, which still works the land jointly, but bids farewell to common property outside the realm of production. This may have seemed a step back in terms of cooperative settings, but it did justice to most members' preferences.

4.1.4 Water Management

In some countries, such as the UK or Switzerland, farmers barely think of water as a scarce resource. In most parts of the world, however, water is among the scarcest of resources, particularly in the agricultural sector. Further, if compared to other important factors such as land, seeds or tractors, water usually has far less clear property rights associated with it because it is much more, well, fluid.

One of the least contested scientific findings regarding water management was described a long time ago by White (1957: 160): "If there is any conclusion that springs from a comparative study of river systems, it is that no two are the same." Considering that many farmers use ground water rather than river water as well as the fact that this institutional arrangement of ground water utilisation also shows significant diversity, it becomes clear that a library rather than a paragraph in a socioeconomic textbook would be needed to do justice to the diversity of arrangements concerning water management in different parts of the world. Further, only some of these arrangements are cooperative in nature. In many cases, companies market water to farmers as a simple commodity. In other cases, the state has enacted clear laws regarding how much water farmers are allowed to use, meaning that a hierarchical setting applies. But still, many institutional arrangements are built on cooperation, either partially or fully. This applies at both the local and the international level.

On the local level, a Kurdish colleague once told me that the main motivation for attending Friday prayers at his village's mosque for most local farmers was the opportunity to coordinate the use of the water available for irrigation. A more systematic analysis of local conflicts about water (Böhmelt et al. 2014) revealed that most difficulties can be solved on a political or even personal level; few violent conflicts emerge around water. Intensified agriculture, urbanisation and climate change, however, are all factors that are likely to aggravate the necessity of good governance regarding water.

Transnationally, the same combination of market-based, hierarchical and cooperative settings can be identified. One example of an all-inclusive, long-term, cooperative

setting, however, can be found in the Niger Basin (Cascao and Zeitoun 2010). There, a river basin organisation was created that addressed a wide range of water-related and development issues, including non-governmental stakeholders. In this and other international settings, many aspects of power asymmetries may weaken the cooperative aspects, including the nation's bargaining power (in the case of unequal neighbours such as India and Nepal) or the question of which nation is situated upstream and which downstream. "Struggles for equity, challenging power asymmetries and seeking sustainable access and allocation […] make up transboundary water politics" (Mirumachi 2015: 152).

When compared to Alpine grassland, pastoralism and Kibbutzim, cooperative water management is far more widespread. This may be perceived as an advantage, although it also makes it more difficult to identify common patterns that contribute to a thorough understanding of cooperative governance in the farming sector.

4.2 Linking with Consumers

Cooperative production is certainly strengthened by the desire to join forces in a strong and cooperative social setting. But this very concept of joining forces is not, of course, necessarily limited to agricultural production. Linking economic activities with cooperation is also attractive in other sectors of the economy. Moreover, it requires an institutional setting suitable for equitable, egalitarian and fair approaches. Over the last 200 years, it generally appeared that cooperatives represent the most appropriate institutional setting for such purposes. Indeed, it is only in recent decades that alternative institutional approaches have surfaced, some of which will be discussed below.

4.2.1 Cooperatives

Many British intellectuals recognised the failed attempts made during the early 19th century to organise a new cooperative means of production. Men, however, are able to learn from their mistakes. In 1833, 28 weavers managed to form the "Rochdale Society of Equitable Pioneers", a cooperative based in a small town north of Manchester, which served as a role model for cooperatives over a long period of time. The climax of this role model function was reached in 1937, when the International Cooperative Alliance adopted the original Rochdale Principles as the general standards for cooperatives. These principles were:

– The political power within cooperatives is equally distributed among their members. Although shareholding companies are usually controlled by the wealthiest members, in cooperatives each member contributes equally to the cooperative's capital and has one vote.

– Membership is open and voluntary. New members may not be discriminated against.

These two pillars summarise the most important characteristics of cooperatives. The Rochdale Society, which was principally formed to supply its members with a low-priced and reliable supply of food, also had additional regulations such as the obligation to pay in cash and the requirement for political and religious neutrality. These requirements, however, do not resonate to the same degree in today's cooperatives due to their being rather context-dependent. The original Rochdale Society ceased to exist in 1976, when it was merged with the neighbouring Oldham Cooperative.

In Rochdale, participants noticed that their purchasing power was considerably higher if they acted as a unit against other participants in the market. This was, during the 19th century, the strongest force behind the emerging cooperative movement. In Germany, for example, cattle traders charged inflated prices. If peasants needed to access credit in order to pay them, the interest rates were likewise far above reasonable levels. This encouraged Friedrich Wilhelm Raiffeisen (1818–1888) to found a cooperative bank run by and for farmers. Around the same time and just a few hundred miles to the east, Hermann Schulze-Delitzsch (1808–1883) founded a cooperative organisation that helped farmers to purchase inputs for less and sell their produce for more.

These stories have become long-lasting success stories. Yet, the decades of entrepreneurial history have, of course, caused changes. There changes include the Bavarian farming cooperative Baywa and the Austrian Raiffeisen Bank, in which the cooperatives have, at some point in time, decided to leave this particular institutional setting and convert into a shareholding company without the burdens associated with being a cooperative. There are even more examples of agricultural cooperatives gradually leaving the shrinking farming sector and offering services and products to a largely non-agricultural (although often still predominantly rural) population. However, there are also many cooperatives still serving farmers' interests, having farmers as members and farmers serving on the board.

Cooperatives have attained a role in various societies that justifies a closer look at this most significant institutional form of cooperative action. In fact, the resistance against cooperatives is the strongest in post-socialist countries such as Russia, where only 10% of the population are members of one or several cooperatives. In the West, the figures are usually higher, ranging from 17% of the population of the UK to 57% of the population of the USA.

The above overview has made it clear that the role of cooperatives in marketing agricultural factors and commodities exceeds the importance of the relatively few cooperatives that are still active in agricultural production. Chapter 2 has introduced the central position of family farming in today's agriculture. However, in Europe cooperatives organise more than 50% of factor purchases made by farmers and account for more than 60% of marketing activities concerning agricultural products.

Figure 4.1 offers an example of how many cooperative organisations work. As all farmers are supposed to participate and decide on issues in their cooperative, they

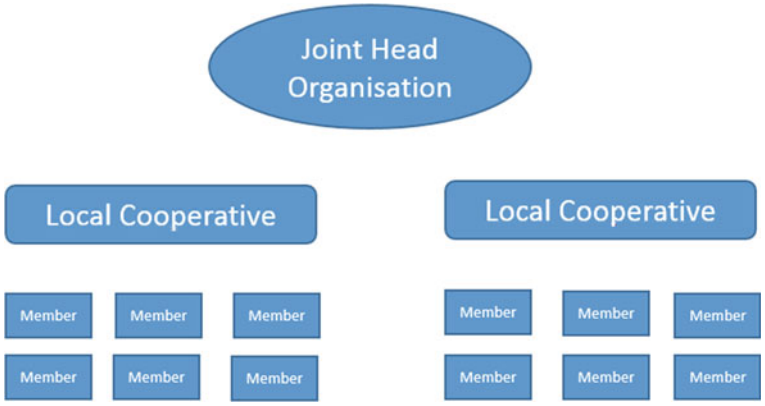

Fig. 4.1 Typical organisational structure of an agricultural cooperative

usually still work on the local or at least regional level. Nevertheless, they require national coordination, both in terms of negotiation power in the markets and gaining a voice in political issues. Therefore, local cooperatives often have a joint national organisation. On the EU level, there is even a General Committee for Agricultural Cooperation in the European Union, which includes fishery cooperatives. It is telling that this organisation shares an office with the interest organisation of European farmers.

While most cooperatives to date have preserved the basic building blocks of cooperative organisation, it has also appeared useful to some actors to dilute the organisational principles of cooperatives, mostly for pragmatic reasons such as better access to capital. Judge for yourself whether you consider Land O'Lakes, the biggest dairy in the USA, to represent such a dilution. They do both allow single farmers (7000 of their members) and local cooperatives (a further 1300 members) to join their membership ranks. Other developments are certainly more challenging to ideas of equality, including the so-called Wyoming cooperative model. Such organisations distinguish between patron members and investor members. While patron members are members of the cooperative as we know them, investor members simply bring capital into the organisation, meaning that they do not have voting rights.

New generation cooperatives (Harris et al. 1996) focus on delivery rights. Becoming a member of such an organisation means that you buy yourself the right (and the obligation) to deliver a defined amount of a certain agricultural commodity. The cooperative, in turn, is required to pay members a pre-specified price for the commodities delivered (usually a formula price based on spot market prices at a specified exchange, with additions or subtractions based on quality). The cooperative is also required to return any profits to members on a pre-specified schedule determined by the board of directors.

Garnevska et al. (2011) investigated a sample of Chinese cooperatives in order to determine which crucial success factors cooperatives should adhere to. They found that

– a stable institutional framework,
– an engaged general manager,
– support from the government and NGOs and
– engaged and understanding members

were the most important factors that distinguished successful cooperatives from the unsuccessful ones.

4.2.2 Fair Trade

> Fair trade is a trading partnership based on dialogue, transparency, and respect that seeks greater equality in international trade. It contributes to sustainable development by offering better trading conditions to, and securing the rights of, marginalized producers and workers—especially in the South. Fair trade organizations (backed by consumers) are actively engaged in supporting producers, in awareness raising and in campaigning for chances in the rules and practices of international trade.

As this definition by DeCarlo (2007: 2) is endorsed by many major fair trade organisations, it seems well suited to briefly outline the concept that made the fair trade movement so big. As with cooperatives, it needed active groups and inspired individuals to turn the vision into practice, which happened more than 100 years later than for the cooperative movement. Generally speaking, two American NGOs with a Christian background, namely "Ten Thousand Villages" and SERRV, are considered to be the first organisations to have established trade with developing countries that paid a premium for, well, better development. That was in the 1940s.

The 1960s and 1970s saw the launch of the first shops specialising in solidary trade with developing countries. Yet, around the turn of the last century, the fair trade market enjoyed growth rates that other sectors could only dream of. Estimates suggest that 1.3 million farmers benefit from the fact that products worth 3.4 billion Euros in value are certified with a fair trade label.

Fair trade has become so successful due to combining two well-known patterns. One is that there is a steady demand for products in developed countries that can only be grown in southern countries, for example, coffee or bananas. The other pattern is that people in northern countries are often willing to transfer some of their wealth to the south, a transfer that has traditionally been accomplished via service projects. The combination of these patterns associated with fair trade takes advantage of the fact that people tend to feel more responsible for another person if they consume the products grown by that person. What economists refer to as a "warm glow" is achieved in a particularly sound manner if I can do something for the health and education of the farmer who grows the cocoa for my chocolate.

Smith (2009) collects and evaluates the criticisms directed towards fair trade, including the argument that support would be more effective if it was given directly to poor communities rather than taking a detour via traders and labelling organisations (as voiced by Henderson 2008). This argument neglects the fact that, should fair trade not exist, the buyers of fair trade products are unlikely to substitute their purchase premium for a donation. After a careful evaluation of these criticisms, Smith (2009: 34) contrasts "the largely unsubstantiated critiques of fair trade with the evidence which supports the use of the system as a way to build capacity that would otherwise not exist." Empirical findings show that fair trade increases both family income and credit availability and often results in an improvement in nutrition, health and education while also establishing economic capacity.

Nobody, however, doubts that the governance of fair trade could potentially be improved. When involving labelling organisations, there is always the danger of taken too much money out of consumers' payments for administrative purposes. Further, when paying prices above the equilibrium price, there is always the risk of encouraging production in locations where it is not efficient to produce. Attentive, idealistic and smart individuals are needed in the fair trade business to overcome such challenges.

4.2.3 Community-Supported Agriculture

The roots of community-supported agriculture lie in Japan during the 1960s. Consumers who were unhappy with mainstream retailers and an agricultural policy that gave contradictory signals to farmers and society started forming Teikei (Kondoh 2015). The Teikei were groups of farms and consumers that formed a relationship to govern the delivery of food, particularly milk, eggs and vegetables, that is, items with a low degree of processing. They were usually organic, which was almost the only well-organised distributional channel for organic food at that time.

One important element of Teikei groups is the voluntary work of their participants. Some Teikei groups allow members to buy themselves out of this obligation, although in general it is expected that members visit the farms in order to help them with the planting or harvesting work.

It is difficult to find reliable statistics concerning the extent of the Teikei movement, but some estimates (Kondoh 2015) suggest 25% of Japanese households are involved in one form or another. In fact, the peak of the Teikei concept was reached in the early 1980s. Paradoxically, the growing availability of organic food among Japanese retailers decreased the attractiveness of Teikei—now there were other ways to obtain organic products. Today's Teikei groups often suffer from the relatively high average age of their members. Young people often prefer to separate the buying of food from their working activities, and they are happy with what conventional retailers offer.

In most northern countries, the opposite is true. What the Japanese know as Teikei is an emerging social movement known as "community-supported agriculture" (CSA) in a growing area of the world. In the USA, 13,000 CSA farms deliver

to their customers, of which the largest, "Farm Fresh to You" in California, serves 13,000 households. Likewise, Europe hosts at least a few hundred CSA networks, although it must be recognised that contradictory numbers are circulating.

While extremely similar to Teikei, it can be said that CSA rests on three main pillars that are interestingly homogeneous over the large number of countries in which such networks are emerging:

- One pillar is food security. It will be shown in detail below how many consumers have lost their confidence in the quality of the food that is offered by mainstream retailers. It strengthens trust considerably if consumers know the farm where their food comes from. Even more so, when they can discuss strategies concerning weed management or animal nutrition with "their" farmer.
- Most farms that participate in CSA produce organically. Even for those that do not, the attempt to choose sustainable production strategies can be considered another constitutional characteristic of CSA.
- Community-building is the third pillar of CSA. This includes the integration of voluntary work on the farm by group members as well as price setting. As a principle, the prices charged for the food are not market prices, but are instead supposed to reflect the true costs of production.

This latter point regarding price setting may sound good, but it faces conceptual challenges in relation to the farm manager's wage. A large share of production costs, particularly in small family farms, consists of the time the farm manager spends on production-related activities. Tegtmeier and Duffy (2005) highlight the frustration of many farmers participating in CSA who feel that their labour is not reimbursed in a fair way.

While CSA may appear to be an ideal means of bridging the large contemporary gap between farmers and consumers, it does face obstacles from the demand side. Empirical studies conducted on both sides of the Atlantic (Kato 2013; Maschkowski et al. 2017) show that food sovereignty is a serious issue. If the farm involved in your CSA project harvests beetroot, then beetroot will be delivered to your house, whether or not you might prefer beans. A long-lasting membership of a CSA project therefore presupposes a high degree of tolerance towards a broad range of different agricultural products.

4.3 Governing Sustainability

Few theoretical concepts have had such a large impact as the idea of sustainability. While there are discourses regarding a "sustainable industry" (Paton 2000) and even a "sustainable service sector" (Elekdag 2012), this affects agriculture more than any other sector. Agriculture, as with forestry, is strongly connected to natural processes that are dependent on the integrity of ecosystems. Yet, different to forestry, consumers let the final products of agriculture enter their body, which means that information

concerning harmful substances is taken particularly seriously. It is therefore worthwhile to follow some of the processes for identifying a definition as well as the emergence of governance of sustainability, since the concept has certainly shaped agriculture as we know it today.

Sustainability is not fruitfully spread by giving orders, nor does it make sense to think of a "market" in which the proper understanding of sustainability is traded. The large and colourful debate around sustainability, in spite of major disputes and conflicts, is best understood as a story about cooperation, about a large part of society struggling to achieve a joint understanding of a new societal contract. It is therefore well placed within this chapter on cooperation.

4.3.1 The History of the Concept

After the historically unique phase of economic growth witnessed between 1800 and 1950, the second half of the 20th century was characterised by a growing awareness of both the negative side-effects and limits of growth. Rachel Carson (1907–1964) was a pioneer who played a prominent role in that process in the USA. After writing some books about maritime subjects, her final book, "Silent Spring", was concerned with the side-effects of pesticide applications. Following its appearance in 1962, the book was sold by the hundreds of thousands and it initiated the first broad debate about environmental issues.

Subsequently, the Club of Rome was founded in 1968 as a think tank. Among its first tasks was a modelling exercise. Founded by the Volkswagen Foundation, a computer simulation was used to see what would happen if a fixed stock of resources was faced with population growth and industrialisation. Different scenarios considered different extents of unknown reserves and different growth functions. As a result, petroleum reserves, for example, were projected to last between 20 and 93 years. The book in which these and other results were published in 1972, "The Limits to Growth", became the best-selling book ever on environmental issues. In the same year, the United Nations held its first assembly on environmental affairs.

Rachel Carson and the Club of Rome had brought environmental issues to the attention of a broad segment of society in industrialised countries, as had a number of obvious environmental issues that emerged during the 1970s and early 1980s, for example, acid rain and the destruction of the ozone layer. It also became increasingly obvious that these environmental issues should be considered within a larger socioeconomic frame, which should also take into account issues such as the widening gap between rich and poor countries. For then UN Secretary-General Javier Perez de Cuellar, 1983 marked the point at which to ask Norway's Prime Minister, Gro Harlem Brundtland, to create an organisation independent of the UN to focus on environmental and developmental problems and solutions. The World Commission on Environment and Development was hence founded in 1984.

The publication of the first volume of the Commission's report in 1987 marked the birth of the sustainability concept as we know it today. Indeed, the sentence

"Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs" will no doubt remain among the most cited sentences in human history.

The Brundtland Commission also established a second important conceptual foundation of sustainability. Sustainable development, they proposed, was based on the three pillars of economic growth, environmental protection and social equality. While some critics suggested the impossibility of sustainable growth (Daly and Townsend 1993), it is widely accepted today that sustainability rests on the three pillars of environmental, economic and social issues.

In 1987, that is, the same year in which the Brundtland Report went public, a rather elusive circle of social and natural scientists published both a book entitled "Ecological Economics" and a special issue of the journal "Economic Modeling" concerning the same issue. They attempted to take the specific characteristics of ecological systems into account, emphasising the irreversibility of many biological processes. Over the years, ecological economists have developed the concept of strong sustainability. This assumes that the existing stock of natural capital must be maintained, simply because the functions it performs cannot be duplicated by manufactured capital. While conventional environmental economists would be interested in the values of natural amenities, ecological economists would not really be concerned with them: We would just have the obligation to preserve nature as it is.

During the 1980s, the majority of farmers would not have considered that these debates would be of any relevance to them. They erred, however, at least in the medium term, since over the years, the consciousness regarding sustainability in all its different shades has been transmitted in different ways to agricultural practices. Many governments, particularly in Europe and North America, started to introduce incentives for farmers to help keep nature intact or at least to reduce the exploitation of natural resources. Linked even more strongly to the concept of sustainability, consumers were increasingly willing to pay extra for products that could evidence their sustainable production methods. The following sections are devoted to these initiatives and how they shaped the concept of sustainability, with an emphasis on the cooperative governance aspect.

4.3.2 Roundtables and the like

When consumers long for the taste of a strawberry, they will buy a strawberry. But what if millions or even billions of consumers want their food to be grown sustainably? What are they supposed to buy in order to have their demands met?

Attentive readers of Sect. 2.2.2 may recall the case of the Swiss Addax Bioenergy Company investing in large pivots of sugar cane in Sierra Leone. The bioethanol they were producing was to be sold as a fuel on the European market, although not because bioethanol would be a better or a cheaper fuel than petrol, but rather because substituting bioethanol for petrol would help to curb carbon emissions and protect finite resources. However, as bioethanol would only have its market share

due to sustainability issues, it would be important to deliver some proof regarding the sustainability of the bioethanol's production process.

The European Commission is aware of this challenge and has approached it by requiring the suppliers of biofuels to subscribe to a certification scheme. The Commission offers 16 different international systems (plus the Austrian Agricultural Certification Scheme) to which suppliers can subscribe in order to prove their sustainability, including such colourful names as the "Biograce GHG calculation tool" and the "Red Tractor Farm Assurance Combinable Crops and Sugar Beet Scheme".

Addax Bioenergy chose the Roundtable of Sustainable Biomaterials (RSB), which, according to the description on their homepage, "offers trusted, credible tools and solutions for sustainability and biomaterials certification that mitigate business risk, fuel the bioeconomy, and contribute to the UN Sustainable Development Goals."

The RSB represents a good example of the large number of hybrid organisations to emerge with the objective of providing credibility. Among the members are producer organisations such as the United States' National Biodiesel Board, end users like Airbus, NGOs such as the World Wildlife Federation (WWF) and international bodies like the Food and Agriculture Organization (FAO).

These actors agreed on twelve "principles" that cover environmental subjects such as soil and water, but also socioeconomic issues like local food security and land rights. All these principles are broken down into a major number of minimum requirements that mostly read as rather specific and technical, for example, "relevant government authorities shall be included in the stakeholder process to ensure efficient streamlining of the process with legal requirements".

By using the example of Addax Bioenergy, it has already become obvious that the RSB, which is supported by the European Commission, is open to the certification of projects that some would accuse of unjustified "land grabbing". It is therefore logical that authors such as Goetz (2013) criticise the "insufficient protection of communities or the environment in weak regulatory settings and in view of intense commercial pressure on land" provided by the RSB.

This is a situation rather typical of the many attempts at sustainability definitions. The mixture of actors usually guarantees at least some degree of mixing of commercial and societal interests. Further, the resulting compromise is likely to prove unacceptable for least for some of the outside actors. This does not only apply to the many different roundtables within the realm of agricultural chains, but also to the systems provided in totally different actor constellations. For instance, it applies to sustainability strategies and labels used by major food companies such as Starbucks and Walmart, and it also applies to rather academic groups that issue their own sustainability assessment tools, for example, SMART (Schader 2016).

Globally speaking, the greatest top-down progress within the sustainability debate was probably made by the Brundtland Report in 1987. Since that time, many developments have taken place on the ground. The subsequent section will try to do justice to them.

4.3.3 Socioeconomic Sustainability Revisited

Typically, the environmental pillar of sustainability attracts the most attention, both inside and outside academia. In a textbook concerning the socioeconomics of agriculture, it is obvious that the opposite should be the case. There will be more convenient locations in which to debate the details of sustainable phosphorus or biodiversity management, but there are few more convenient locations to discuss issues related to socioeconomically sustainable agriculture.

It is extremely tricky, however, to appropriately deal with economic sustainability. The easiest part is the definition of sound indicators. Meul et al. (2008), for example, consider the production of value-added products, the efficient use of production factors and a low risk in agricultural production to be the core factors. Similarly, Ryan et al. (2016) suggest focusing on different productivity indicators. Such and similar suggestions may provide valuable clues with respect to the state of a farm (or any other enterprise). Yet, sustainability is also used to distinguish "good" farms from "bad" ones, both for marketing chains and for policy-makers. This is where economic sustainability indicators quickly reach their limits. Obviously, it makes no sense to only buy eggs from farms with high labour productivity or to restrict direct payments to farms above a certain income threshold. Economic sustainability on the farm level has few direct externalities, although a low level of sustainability may raise distributional concerns and might, in fact, be an argument for more rather than less public support.

This is different in the case of social sustainability. Social sustainability, to a great degree, refers to the links between the farm business and the outside world, which is a parallel to environmental sustainability. However, the flows in and out of the farm are not flows of nitrogen and pesticides, but rather flows of money as well as flows of appreciation and respect. The affected third parties are both farm workers and their relatives, in addition to neighbours and customers. Farms are a crucial component of the local social fabric and they should know about it.

It is a worthwhile exercise to choose 50 sustainability assessment tools in which social aspects are included in order to find out more about any emerging consensus concerning what social sustainability actually entails. When this exercise was completed for this book, it turned out that 24 of the tools were connected to a label, while 26 were assessment tools with a merely informative purpose. All the indicators were recorded and sometimes grouped into larger categories so as to see which subjects were the most frequent. It appeared that there were three main front runners:

- Thirty-two of the 50 frameworks contained safety hazards. Apparently, a farm is not socially sustainable if pesticides or machinery are handled in ways that provoke accidents or long-term damage. Indeed, the concept of sustainability is touched at its very core if incidents occur on farms in which some of the workers or even bystanders are harmed. Bennett (2013) reports 621 fatalities in US agriculture in 2010 and, while the figures from developing countries are less widely distributed, they are certainly not lower.

- Twenty-seven out of 50 frameworks include discrimination on their blacklist, mostly with respect to payments. While non-discrimination is an important component of just treatment, it is not as strongly related to the concept of sustainability as hazards. One could discriminate against minorities now, just as one could in the future. However, another core concept is the fulfilment of human needs. It is plausible that this will be difficult if parts of society are discriminated against.
- Another 27 frameworks included child labour on their indicator list. This nicely combines the two sides of the sustainability framework. Children require education (even if they are not aware of that in some cases), while our society needs well-educated children in order to maintain our standard of living in the future. In a sustainable agricultural system, children should therefore be spared from the obligation to work.

This shortlist does not pretend that more or less all frameworks concerning social sustainability would be the same. The SMART tool created by Schader (2016), for example, covers 40 different categories in the social realm, while the Sustainable Winegrowing New Zealand network only covers one category, namely training on the job for the winegrowers' employees. Moreover, there were several indicators only chosen by one of the 50 frameworks. Among them were the payment of bonuses to employees (in the label of the Food Alliance), the non-obligation for women employees to undergo pregnancy tests (in the Veriflora label) and the farm manager's tolerance for changes [in the MESMIS system constructed by Lopez-Ridaura et al. (2002)].

A question arises regarding whether the current governance of sustainability is sustainable in itself. From a radically libertarian standpoint, it is probably acceptable that different groups of people claim sustainability to have different attributes. It is the market's obligation to select concepts that are acceptable to consumers. This notion fails, however, in the presence of information asymmetries. It is reasonable to assume that a majority of wine buyers purchasing bottles with the logo of Sustainable Winegrowing New Zealand are not aware that the understanding of social sustainability is much more limited within this network than in most other labels. Would they consider themselves to be betrayed if they found out? Or, from a different perspective, are they willing to pay a higher price for a label emphasising bonus payments to employees, as in the Veriflora case?

In both the organic and fair trade cases, international actors have managed to establish a worldwide system featuring similar understandings of what the terms "organic" and "fair trade" actually refer to. However, in relation to sustainability in agricultural production, this is clearly not the case. The concept is apparently too broad for a global niche organisation (IFOAM in the case of organic production, WFTO in the case of fair trade) to establish such a definition. It might be possible to involve the International Standardization Organization (ISO), a body founded in 1947 to agree on and promote proprietary, industrial and commercial standards. While the core work of the ISO is rather technical, it might be time to create a consensus on what sustainable agricultural production is as well as to consider the realm of social issues.

Mann (2018) suggested one potential option: "The fulfilment of the individual subjective needs has to be aimed at in order to gain social sustainability. While the human rights set the bottom threshold and everything below them cannot be regarded as socially sustainable, sustainable development can be seen as development that increases the fulfilment of needs, hence moving up within the needs pyramid both within work and private life. To answer the initial question, a social farming system is then sustainable when the cultural institutional settings allow one to satisfy all needs or to improve the satisfaction of needs, both of physiological and social nature, and actors as well as institutions continuously recreate a system that allows future generations to do the same."

4.4 Concluding Thoughts on Cooperation

Institutional economists often emphasise that "old rules are good rules" (e.g. Kasper 2013). While this might be true for hierarchies and markets, the realm of cooperation may be particularly reliant on the firm establishment of cooperative structures. The long-term success of agricultural cooperatives and Alpine grassland corporations are two cases in point, while the many failed attempts to institutionalise cooperation in new ways are others.

However, new needs constantly emerge and, in the case of Western consumers, these needs often suggest interlinking more strongly with many of the poor persons responsible for growing the ingredients for food and drinks. A feeling of shared responsibility fosters the establishment of new and lasting organisational settings. Some consumers choose to link with farmers in their region through community-supported agriculture, while others buy fair trade items to help farmers in the global south. In any case, the need to buy sustainably is growing, and it is accompanied by both opportunities and threats. The key opportunity is to establish broadly accepted guidelines for the fairer organisation of production, which may become legal requirements one day. The main threat is the loss of credibility caused by freeloaders that use labels and symbols without actually delivering what they promise.

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