Organic Farming And Community Supported Agriculture (CSA) As The Future Of Food

By 2050 the total population is projected to be around 9 billion people. The challenge the world's population will face in the future is to guarantee food security for everyone. This means, to provide produced nutritious food, that is accessible for all people. As agriculture uses large parts of the scarce sources land and water, food production needs to become more sustainable in the future in order to preserve the worlds recourses and ecosystems and guarantee high quality food. Unfortunately, there is not just one solution, which will solve the future problems all at once. A combination of solution approaches is required, which differ in each location, place and country. Not all approaches are equally suitable for the different countries. With putting the focus on the aim of producing sustainable food, the approach of supporting and consuming only local food from organic farms, in form of community supported agriculture, will be discussed more detailed below.

The basic concept of community supported agriculture is developing a partnership between local farmers and consumers who share the reward but also the risks of the harvest. Such communities already exist throughout the world. To optimize this concept in my suggested problem-solving approach the supported growers run solely organic farms and produce vegetarian food. The consumer pays a subscription fee before the growing season and in exchange they get a share of the harvest. In other words, during the main season, CSA members get a weekly delivery of local and seasonal food from organic farms nearby. Outside the growing season, the delivery varies depending on the location of the farm land. In Germany it is usually a fortnightly delivery during the off season. Community supported agriculture benefits the farmers as well as the consumers. The former ones get financially support beforehand and the latter ones receive a weekly fresh, healthy and local food supply.

By far the greatest problem with the currently more used conventional farming are negative impacts on the environment, such as biodiversity loss, soil erosion, water and air pollution and greenhouse gas emission, to name just the major implications. The aim of most conventional farming is to achieve as much yield output as possible. Reaching this goal contributes a large part to the before mentioned negative implications on nature.

The yield reduction under organic farming, resulting in more land needed to produce the same amount, could offset some of the biodiversity benefits of organic farming.

Supporting local organic farms as a CSA member also reduces the greenhouse gas emission.

In every step of the food chain from the field to the customer greenhouse gases are released into the atmosphere including rearing, farming, transport, storing as well as the disposal of the food. A high amount of greenhouse gases results from food waste. About one third of all produced food is thrown away. By far the greatest contribution to the greenhouse gases has the usage of fertilizers and the livestock rearing. They contribute large amounts of nitrogen and methane to the total amount of produced greenhouse gases. Another part of the food production that causes large amounts of greenhouse gases in form of carbon dioxide is the transportation of food. The long-distance transportation by boat, train or airplane are more efficient compared to the short transport from the supermarket to the customer. Small amount of food is mostly picked up with a car by the end consumer and these short drives are the least efficient and cause the largest carbon food print in the overall contribution by transportation. In this case, CSA member can for example cause less greenhouse gases if they chose an environmentally friendly way for picking up the food boxes from the pick-up stations.

But besides the way of transportation, supporting local, plant-based and organic food reduces the greenhouse gases emission significantly. Due to the plant-based diet there are no greenhouse gases released by animal rearing and farming, meat production and crop production to feed the stock. Furthermore, it also decreases the food waste. One key characteristic of community supported agriculture is that the harvested fruits and vegetables have no long transportation from the field to the customer. In other words, there will be no waste due to long distance transportation and storage. Another waste reducing advantage is, that even fruits and vegetables will be consumed, that do not fulfil the requirements, such as appearance, shape and size, for being sold in supermarket chains.

To meet the needs of the growing food demand water and land are crucial for agriculture and food production. For agriculture alone 70 % of the world's fresh water is used. For both, agriculture and food production high quality water and availability of water resources are essential. With the rapidly increasing population this can no longer be guaranteed. Some countries already face severe water scarcity and conventional farming and animal husbandry play a major role for this problem. Most of the water is used for irrigation. Misuse and inefficient water irrigation management leads to water waste and consumption of more water than necessary. Moreover, commercial farming causes environmental pollution due to animal waste disposal and the usage of synthetic fertilizers, pesticides and other chemicals which infiltrates in the water and soil. Organic farming on the other hand, reduces the environmental contamination by avoiding fertilizers and pesticides, which leads to higher water and soil quality. With the higher soil quality, also the water holding capacity of the soil is increased. Which means, that water in the soil can be stored longer and less irrigation water is necessary. The higher capacity also makes the soil more resilient to extreme weather events likes droughts, which will be more common in the future due to the global warming. The other scarce resource is land. Agriculture covers already 38 % of the worlds available land area. Most of it for food cultivation and animal

husbandry. For the meat production, land is used for the animals to graze as well as for crop production to feed the stock.

One of the greatest future challenge the world's population will face is to provide enough food for the growing population. Here the question arises if organic farming can contribute sufficient food for the world's demands. As already mentioned before, it requires more than one single approach to solve this problem. Research has shown that the yield on organic farms is less than of commercial farming. However, with expected increasing droughts due to climate change organic farming becomes more important due to the higher resilience to such extreme weather conditions. Consuming just local food from organic farms as part of a CSA member has also positive impacts on the rural population. On the one hand, the farmers are financially supported by this relationship. With the money growers can pay for seeds, equipment and everything else which is needed to run a farm. Moreover, the invested money in local farmers stays in the community and benefits the local economic. On the other hand, supporting local organic farms creates new job opportunities. The concept of community supported agriculture also eases the pressure on farmers because they are no longer bound to meet the demands of the industry and are no longer forced due to this pressure to use synthetic fertilizers and pesticides to rapidly increase the harvest output. The CSA does not just affect the farmers in a positive way, but also the members benefit in different ways from this relationship with the local farmers. CSA communities not only brings fresh, local and healthy fruits and vegetables to their members, which has been harvested just right before they get them. The buyer also knows where the food comes from due to this close relationship between the two parties. Most of the CSA communities also encourage their members to help out on the field two or three times per year. This even strengthens the relationship between farmers and members and increases on the side of the members the appreciation for the farmland and for the harvesting practices but also the awareness of it. It also shows the seasonal limits of regional food production and the differences in food quality. Moreover, the consumer is encouraged to become more conscious about environmental behaviour and the importance of sustainable produced food.

In countries like Germany, there is already an increasing trend of changing the diet to vegetarian or vegan. There are already favourable conditions for up-scaling the idea of CSA, and with that a diet change of consuming local vegetarian or even vegan food. We live in a relatively wealthy country which implements already a higher environmental concern. This means, a greater amount of people is more concerned about where the food comes from and are interested that it is produced sustainably. Moreover, the trend of changing to a plant-based nutrition is still increasing. This makes it easier to reach a greater number of people with the concept of community supported agriculture. However, this advantageous basis for mainstreaming this idea is different for example in developing countries. The majority of the population is financially dependent on agriculture. Here is also something missing

References

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