How Community Supported Agriculture contributes to the realisation of Solidarity Economy in the SDGs

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Abstract

Community Supported Agriculture was born in Japan in the late 1960s. It includes two essential pillars: food sovereignty and solidarity economy. By definition, Community Supported Agriculture - Teikei - implies the involvement of eaters (consumers) with the producers, shared risks and benefits, and a localised agroecological model of production and consumption. Solidarity economy is present is all CSAs in terms of systemic economic change. The ways of implementing this change are many and varied, but with some systemic collective horizontal aspects that are always present.

This paper outlines the overall aspects of CSA and SSE in the context of the SDGs and illustrates the positive impacts of localisation of the SDGs through case studies. It also examines some other territorial food sovereignty dynamics and policies linked to the SDGs and SSE. We use this and other relevant papers as well as the UN Committee on Food Security and FAO policy and the collective knowledge of our network to demonstrate how CSA[1], as an integral part of both solidarity economy and agroecology can and is a key factor in achieving the SDGs. In terms of methodology, this paper runs through the SDGs and some specific targets on a numerical basis.

Keywords

Community Supported Agriculture; Solidarity Economy; sustainable local food systems

Bio

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[1] CSA here always refers to Communty Supported Agriculture, and never to Climate Smart Agriculture

How Community Supported Agriculture contributes to the realisation of solidarity economy in the SDGs

Community Supported Agriculture was born in Japan in the late 1960s when consumers and the Japanese Organic Agriculture Association (JOAA) came together to find a joint response to soil pollution and Minemata disease. Called 'Teikei", it means 'Food with the face of the farmer' and 'trust'. It includes two essential pillars: food sovereignty and solidarity economy. By definition, Community Supported Agriculture implies the involvement of eaters (consumers) with the producers, shared risks and benefits, and an agroecological model of production and consumption. The 10 principles of Teikei provide the guidelines (Elizabeth Henderson and Robin Van En, Sharing the Harvest, a citizens guide to Community Supported Agriculture, p.269, 1999 https://www.tandfonline.com/doi/abs/10.1080/21683565.2018.1443313?journalCode=wjsa21.) Solidarity economy is present is all CSAs in terms of systemic economic change. The ways of implementing this change are many and varied, but with some systemic collective horizontal aspects that are always present. The one over-arching proinciple of solidarity is that of shared risks and benefits. Many CSAs also implement sliding scales of payment linked to consumers' financial status. In some cases it is also possible to pay through what is called a 'working share', by contributing a set number of hours on the farm in lieu of payment. Other mechanisms include crowd-funding for those unable to cover the full cost, and accepting food stamps. The CSA movement today involves around 3 million members and is present on all continents. Size of a CSA varies greatly from one country to another, and indeed from one CSA to another. It can cover as few as 30 or 40 families, or extend to as much as a thousand members in some cases. In the latter case, the group is generally split into several smaller ones. CSAs are also frequently multi-producer, providing a real alternative to one-stop-shopping in supermarkets for time-poor urban dwellers. However whatever the form, the solidarity remains consistent, as does the urban-rural linkage.

The terminology used to describe CSA partnerships is frequently Local Solidarity Partnerships between Producers and Consumers. This also clearly implies systemic change from a neo-liberal to a more collectivised economic, social and environmental vision, irrespective of the form it takes. This situates it clearly in the solidarity economy spectrum. CSA and LSPA groups always have a participatory form of governance involving weekly contact at distributions and sharing of various tasks ranging from on-farm days to help with certain peak tasks, preparation and distribution of weekly shares, newsletters, collecting payment from members and recipe sharing. There are also usually 'open days' for harvest festivals and other activities that help to build group cohesion. Problem-solving methods are always non-violent and training is provided in all aspects. Many of the training manuals are available on the Urgenci website (www.urgenci.net).

This paper aims to outline the overall aspects of CSA and SSE in the context of the SDGs and illustrate the specific positive impacts of localisation of the SDGs through the lens of examples and case studies. This will show how some of the many variations of Community Supported Agriculture fulfil the Right to Food and Nutrition using the framework of the SDG and related targets. The Nyéléni Declaration on Agroecology 2015 (Collective authors, International Planning Committee for Food Sovereignty, Nyéléni Declaration on Agroecology, 2015, (www.foodsovereignty.org/.../Download-declaration-Agroecology-Nyeleni-2015.pdf)

specifically refers to solidarity economy as one of the elements of agroecology, as do the Food and Agriculture Organisation of the United Nations 10 elements of agroecology. (FAO. 2018. *The 10 Elements of Agroecology Guiding the Transition to Sustainable Food and Agricultural Systems.* Rome: FAO. http://www.fao.org/3/I9037EN/i9037en.pdf). It also aims to examine some other territorial food sovereignty dynamics and policies linked to the SDGs. We shall use this and other relevant papers as well as the UN Committee on Food Security and Nutrition and FAO policy and the collective knowledge of our network to demonstrate how Community Supported Agriculture, as an integral part of both solidarity economy and agroecology can and is a key factor in achieving the SDGs. In terms of methodology, this paper runs through the SDGs and some specific targets on a numerical basis.

Community Supported Agriculture falls under the overarching SDG 2: End Hunger. But in order to reach this objective it draws on many different SDGs. Our case study illustrations are drawn from many different parts of the world.

It has already been demonstrated that food is a common thread linking all 17 UN Sustainable Development Goals (SDGs), given the interconnected economic, social and environmental dimensions of food systems. According to the Barilla Centre for Food and Nutrition, each SDG is related to key indicators included in the Food Sustainability Index (The Economist Intelligence Unit, 2018, *foodsustainability.eiu.com/).*

Given the many inter-linkages involved, this is not a simple exercise.

SDG 1, Leave no one behind

Recent figures show that just 27 people own more of the world's wealth than the poorer 50% of the global population. And that these inequalities are growing. For the second consecutive year, the FAO SOFI report (State of Food Security and Nutrition in the World (www.fao.org/publications/sofi/en/) has shown an increase in both food insecurity and malnutrition as well as in NCDs (non-communicable diseases) caused by over-consumption of sugar, fat and salt in highly processed industrially made foods produced by agribusiness. This is the result of the neo-liberal, capitalist system. The divide between the super-rich and poor is increasing rapidly. It is therefore imperative to look at the existing models that can counter this rend, if we are to become more truly inclusive. Social solidarity economy takes many and diverse forms in different contexts. It can be small, worker-owned co-operatives, informal groups and associations or even individually owned social enterprises (a farm is most frequently a legal entity that is individually owned: it is the producer-consumer relationship that forms the collective solidarity economy dimension). Nevertheless the commonality, wherever the initiative occurs, is the collective wealth and benefits that are generated at multiple levels of society that ensure both producers and consumers are socially included and mutually supported within a system that guarantees social, food and environmental justice.

The first principle of Teikei is that of shared risks and benefits. A case study illustrating the strong link to SDG1.5**, *"Build resilience of the poor and reduce exposure and vulnerability to climate-related extreme events and other economic, social and environmental shocks and disasters"*** is the case of Shinji Hashimoto in Japan. On two separate occasions in recent years, his farm has suffered extreme climate-related events. First in the form of a landslide that

engulfed much of the farm and the buildings in August 2014, and on a second occasion last winter, where snow destroyed the tunnels used for protecting some of his production. On both occasions the members of his Teikei group, also supported by the local town council in Hyogo and many citizens came to help clear up the mess. And the Teikei members who had paid in advance to receive their weekly vegetable boxes received little or nothing for some weeks, but still continued to support Shinji. The resilience shown in this illustration is one of collective community solidarity, from the institutional to producers and consumers. It is grounded in the principle of a collective, inclusive, resilient local food system that is the result of much collective effort built over many years.

Another example of SDG 1 is the case of Solidarischelandwirtschaft, the German Community Supported Agriculture movement. In many cases, the farmer states at the beginning of the season what s-he needs to earn for the season. There is then a 'bidding round', whereby all members state how much they can afford to pay per month. This allows those in very reduced circumstances to pay far les than those with higher salaries, and ensure the right to adequate food and nutrition, creating reliance and social inclusion in a self-regulatory framework. People of various means are guaranteed access to the same high quality organic/agroecologically grown food. This is also a good illustration of SDG 10.

Leaving nobody behind implies a local and highly interactive relationship between citizens to ensure equity as well as social, economic, cultural and environmental rights for all are respected. This is a cross-cutting aspect that sits well with the multiple aspects of CSA and their place in the SDGs.

SDG 2 End Hunger

Of all the SDGs, this is the most obvious connection for Local Solidarity Partnerships Between Producers and Consumers. At a time when the figures for both malnutrition and obesity have risen for two consecutive years, it is quite clear that we need a complex multi-dimensional approach to our food systems. Firstly to ensure food justice, and access to fresh, seasonal, nutritious food for all. And secondly to raise awareness and introduce regulatory measures of governance of overly-processed foods that are high in fat, sugar and salt and that are essentially causing the increase in non-communicable diseases (NCDs) in both children and adults. And because Community Supported Agriculture involves a diet high in local, seasonal, healthy vegetables, it also implies cooking them from scratch and reducing NCDs through healthy diets (SDG 3.4). And cannot be dealt with in isolation, without examining SDG 13 on climate change (intensive industrial agriculture versus small-scale agroecological production, food miles, nutritional values…) or SDG 15 on biodiversity, as a diverse diet is key to human health.

There have been many recent publications on this issue, including a recent report by the Lancet (The Lancet, The Global Syndemic of Obesity, Undernourishment and Climate Change, 2019 *https://www.thelancet.com/commissions/global-syndemic*). All underline the need for greatly increased amounts of fruit and vegetables and decrease in meat consumption (especially red meat). Nevertheless it is important to underline the parallel need to take various different aspects into account to get a full picture. Where the vegetables are neither seasonal not organic/agroecologically grown, and produced within the industrial agribusiness system, they fail to protect consumers from the medical dangers of pesticides and other chemical inputs.

They equally fail to take the carbon footprint of the food into account. Mono-cropping of vegetables on another continent/in another country, the excess use of plastics to cover the soil or green-houses where vegetables are grown without soil and fed by liquid chemicals fall far from meeting the same nutritional or planetary guidelines for sustainability. Soya-bean steaks made with soya-beans from another continent have a heave carbon footprint, as do green beans from Kenya imported massively to many continents. They are frequently sold in supermarkets in Europe even during the local green bean season at a cheaper price, depressing fair salaries for farm workers all around.

It is undoubtedly true that more than 30% of greenhouse gas is being produced by industrial livestock farming in CAFOs – Concentrated Agricultural Feeding Operations[2] (S.J. Vermeulen, B.M. Campbell, and J.S.I. Ingram, "Climate change and food systems,") pp 195–222. Annual Review of Environment and Resources 37, 2012) But far too little is written about the benefits of natural manure from livestock raised extensively that is grass-fed and part of an integrated agro-forestry and agro-bio-diverse food sustainable food system. This is indeed where agroecology comes into its own. And there is an increasing body of evidence and policy to support this, in several of the reports by IPES-Food (http://www.ipes-food.org/reports/), FAO (http://www.fao.org/family-farming/detail/en/c/427118/) and CFS (www.fao.org/3/a-bq853e.pdf).

Recent studies on nutrition have also shown the vital importance of soil health in human health. Soil health is dependant on natural amendment from compost, manure and crop rotation. The human micro-biome, responsible in great part for our health, has also been proven to mirror the soil micro-biome of the food we eat (Raul Ochoa-Hueso, Autonymous University of Madrid, 2017, https://www.frontiersin.org/articles/10.3389/fevo.2017.00071/full). Other studies have shown that the nutritional value of agroecologically grown local food is higher than that which has been transported long distances and conserved for long periods of time or processed (many greens lose about 30% of their vitamins in the first 3 days…). Taken together, it is clear that our nutritional well-being is closely linked to how the food has been grown, and also to its geographical proximity. Seasonality is also a given in terms of sustainable local food systems and our health (2.4). All these elements are also key to ending malnutrition (SDG 2.2) when linked to food justice and the right to food. More specific case studies on this will be listed under SDG 10.

2.4 is also clearly linked to SDG 13, and we have chosen to list various case studies under SDG 13 rather than SDG 2.

By definition, all CSA boxes are local, seasonal and either organic or agroecologically grown. Certification may be third party, Participatory Guarantee Systems, or just trust-based. One of the other principles of Teikei is that the eater/consumer accepts what is in the weekly share. It may be bountiful or not, and is always seasonal.

CSAs come in many shapes and sizes, with no one-size-fits-all. They also include many different products, and may be single or multiple producer. There is an increasing trend towards the latter, with time-poor consumers enjoying the benefits of a single pick-up point, thus often

[2] The same figure has been used to portray GHG emissions of the whole food and farming systems (i.e: food and farming systems contribute up to 30% of greenhouse gas emissions)

avoiding having to go to the supermarket for a big shop. The principle is also that there is a separate contract with each producer. Some multiple producer CSAs may include vegetables, fruit, bread, meat of various kinds, eggs, dairy and fish. There may also be some locally processed items such as jams or pates. In some cases, rice or pasta may be included. In China there is also tea. Obviously produce such as rice and tea will require a grouped order from a slightly more distant CSA producer.

It is also possible to accept the idea of solidarity over-riding the local for grouped purchasing of a limited amount of produce that is from a slightly more distant source. This is the case of Agroecopolis in Greece that has built up a direct solidarity partnership scheme with several more northern European CSAs to export citrus fruit and olive oil. These are products that are shipped collectively to a group of CSAs and their direct sales largely benefit the Greek producers. The benefits largely outweigh the higher carbon footprint. Similar schemes exist between other CSAs in France and their Spanish contacts. Such shipments are made only a few times a year.

Most small-scale Community Supported Agriculture family farms have a highly bio-diverse production. This is partly to ensure a full diverse weekly share and complementarity of vegetables grown, crop rotation and extreme biodiversity. Many grow around 60 different varieties. It also greatly increases to productivity, in line with SDG 2.4 and 2.5. In a recent workshop, we learned about a valley in China that grows 196 different varieties of rice to ensure a good crop. If pests attack one variety, others will always survive. This is a fine illustration of resilience to climate change, 13.1. Participatory breeding of seeds is key to ensuring this rich biodiversity too (SDG 15.5). Seed sovereignty has also been recently recognised in the UN Declaration of Peasants Rights and rights of other people living in rural areas.

There is a body of existing policy to support CFS-FAO policy of Connecting Smallholders to Markets (Collective work of Working Group “Connecting Smallholders to Markets”, Civil Society Mechanism of the Committee on Food Security and Nutrition, Rome. http://www.csm4cfs.org/connecting-smallholders-markets-analytical-guide/). The most developed without any doubt is in China, where CSA is supported by all three levels of Chinese government: State, Provincial and Local. Agriculture Soutenu par la Communauté, the Quebec Equiterre network is also widely supported by local government. Some remarkable examples of small CSA permaculture farms using agroecology with very high productivity exist in Quebec (SDG 2.3). One of the best of these is Jean-Martin’s farm, Ferme de la Grelinette (https://www.permaculturedesign.fr/micro-ferme-maraichage-bio-productive-rentable-jardins-grelinette/). This fact is echoed by many CSA farms all over the world. There is also a coalition treaty to "promote purposes for regional added value and supply chains, for example Netzwerk Solidarische Landwirtschaft (Solawi)" - the German CSA network -, page 85, line 3915 that will to specifically support CSA in Germany. (https://www.bundesregierung.de/resource/blob/975226/847984/5b8bc23590d4cb2892b31c987ad672b7/2018-03-14-koalitionsvertrag-data.pdf?download=1)
Agroecology is supported by several national policies, starting with France. Food sovereignty legislation exists in Mali, Ecuador, Costa Rica and Nepal. Solidarity economy framework laws now exist in over 30 countries (Yvon Poirier, Legislation and Public Policies in support of Social Solidarity Economy (SSE). First steps & Elements of a practical Guide. 2018. [1] http://www.socioeco.org/bdf_fiche-document-5931_en.html). Community Supported

Agriculture can fall under either or both of these spheres of governance and laws, as in the case of the aforementioned FAO 10 Elements of Agroecology and the Nyéléni Declaration on Agroecology that clearly bring them together.

SDG 3, Ensure good health and well-being

As CSA production is based on the principles of agroecology, it means people's health is more protected in several ways: no chemical inputs are used, nutrition is far higher (improved soil and human microbiome), and there is a strong emphasis on agroecologically grown and organic fresh fruit and vegetables leading to a lower rate of NCDs (non-communicable diseases) and improved nutrition. This ties into SDG 3, improved health and well-being. In the case of HIV-positive and AIDS, many doctors in developing countries are also encouraging people to grow their own organic vegetables and the benefits are clear. A recent study in France has shown that the incidence of cancer in those eating an organic diet is about 25% lower. The study was published on the JAMA Internal Medicine review on 22nd October 2018 and was carried out by a group of researchers from INRA, INSERM, Université Paris 13 and the CNAM. And because CSA is so closely linked to a healthy diet, it is even prescribed by some doctors to cancer patients in the Philippines as it so substantially reduces the number of deaths from hazardous chemicals and pollution (3.9).

The CSA network at global level also works deeply on awareness-raising on health and nutrition issues. This is well illustrated by the case of the Zambra Baladre network in Spain (http://distri.asociacionzambra.org/), mentioned under SDG 10, where much emphasis is placed on educating socially excluded groups on nutrition. Just Food in New York carries out much similar work (https://www.justfood.org/). The Korean network of Sister's Gardens also works on this. Many CSA farms globally also partner with schools to provide locally sourced nutritious school meals. It is particularly important to provide children with nutritious healthy food to enable their brains to perform and grow well and avoid stunting. Public procurement and CSA are linked in many cases in China. More case illustrations on social inclusion, the right to food and CSA are provided under SDG 10. Isa Alvarez, Urgenci's Vice-President, has led leading the Nutrition group in the Civil Society Mechanism of the Committee on Food Security and Nutrition (Civil Society Mechanism of the United Nations Committee on Food Security and Nutrition, 2018-2019. http://www.csm4cfs.org/working-groups/nutrition/). The final policy outcomes will be debated and accepted at CFS 46 in October 2019.

SDG 4, Ensure quality education

SDG 4 relates to education, both at school and adult levels. The role that Community Supported Agriculture has been playing globally is secondary but significant. It has focused in many countries on awareness-raising on where our food comes from as well as reducing food loss and waste in schools through supporting school gardens, visits by schools around the world to CSA farms and specific projects such as EAThink (Collective project, 2015-17, https://eathink2015.org/en/), that involved many thousands of school children across 12 European and 2 African countries. There is also a significant educational programme for children, that is run by the Shared Harvest farm outside Beijing, and many more. Most CSA farms everywhere have open days where children learn where their food comes from through joining the many collective activities on the farm.

In terms of adult education, CSA has always placed great value and done much work on promoting, sharing and disseminating knowledge on transformative, collaborative CSA methodology as well as collectively developing tools for doing this, such as CSAct! That includes manuals, videos, games and webinars. (Urgenci, 2018-9 *https://urgenci.net/csact/*) Many of these are available under Creative Commons on the Urgenci website, www.urgenci.net. All these actions fit perfectly with SDG 4.7, whereby actors acquire the skills needed to promote overall joined up sustainability in development, agriculture and local food systems as well as diets, including life-styles and an appreciation of cultural diversity.

SDG 5 Achieve gender equality

SDG 5 is linked to gender equality and women's empowerment. Community Supported Agriculture projects have a very high number of highly empowered women producers. This is widely reflected in the international movement leadership, where there is a good gender and age balance as well as geographical and producer/eater parity. Although we have never analysed the reasons for this, our intuitions are that it may well be due to the nurturing nature of Community Supported Agriculture, from soil care to human care, that not only are the women involved highly empowered, the men do not seem to have machist, dominant behaviours and are deeply respectful of the women and each other. The atmosphere in all CSA groups is based on participatory approaches and collective problem-solving and mutual support. All these are factors that ensure equality and empowerment not only of gender but also of other factors such as race and sexual orientation. Many producers all over the world are also 'new peasants', which also brings a generation and attitude change. These factors all merit greater analysis in the future.

SDG 6, Ensure clean water and sanitation

SDG 6 is linked to availability of water and sanitation for all. Water is a critical issue in many parts of the world, in terms of both human access and access for agriculture; as is the issue of water pollution. The Urgenci Mediterranean network has focused much of its work in the last three years on disseminating agroecology techniques that conserve water and enable production with minimal resources such as mulching and drip irrigation. These elements can be found in the Mediterranean Network training manual. This work has been carried out in conjunction with Terre et Humanisme, the network founded by Pierre Rabhi (https://terre-humanisme.org/). Generally speaking, the preoccupation with minimising water use and maximising agroecological solutions adapted to each region is greatly emphasised within our networks, as is the attempt to reduce/eliminate plastics and use natural mulch instead. This of course links directly to 6.4 and 6.5. Some of the finest examples of this are in the Palestine Agroecology Forum and the Ecovillage of Farka, under the guidance of Saad Dagher, an eminent agroecologist and member of Urgenci's Mediterranean network.

SDG 7, Provide access to affordable and clean energy

Ensure access to reliable, modern, sustainable energy for all – SDG 7 also links to food production and Community Supported Agriculture. The agribusiness sector uses a very high amount of fossil fuels. This includes fuel for big tractors, to heat greenhouses, to move food around the globe and to process and subsequently distribute it. Much of this will be dealt with in the section on climate change. Community Supported Agriculture first and foremost greatly reduces the use of fossil fuels in the production process at all levels through agroecological

production methods such as mulching and minimal tillage and using draft animals and low-tech planting and other similar methods.

It also contributes to the production of modern renewable energy through the production of biogas to use up non-consumable, non-compostable by-products. These units are small and generally used to heat the farm buildings. Many other farms and consumers also contribute through small-scale wind or solar energy production. This production never interferes with food production. One such example is the Community Farm and Ecovillage of Cloughjordan in Ireland (www.thevillage.ie/), where the whole Ecovillage is heated collectively using biomass from the land that belongs to the Ecovillage. Some of this comes from the Community farm that is also a CSA. Using biomass in a closed circuit such as this is a prime example of circular economy (12.4). A similar system is used on Shared Havest CSA farm outside Beijing.

SDG 8, Decent work

Decent work, as outlined in SDG 8 is a central question for Community Supported Agriculture in many ways. Firstly, because one of the fundamental concepts of CSA and Community Supported Fisheries implies a dignified life and income for producers and workers – both in agriculture and in fisheries. This is linked to the very core concept of the agreed producer-led pricing system. It can be further developed by examining the number of decent jobs created, not only in CSA but throughout the wider sector of solidarity economy. Indeed, decent work and full employment (8.5) can only be achieved through a genuine economic paradigm shift, where people are placed before profit, and social, economic and environmental concerns focus on human rights and justice. Solidarity economy takes many different forms, from co-operatives to social enterprises and collectives. This is indeed where the misconception of global growth, as outlined in the neo-liberal approach, diverges most strongly from solidarity economy, where the emphasis is squarely placed on the creation of decent work and fair wages, with the creation of collective, redistrubtive wealth being the focus rather than remuneration of shareholders or middlemen.

The UNGA recently adopted the Declaration of Rights of peasants and other People working in Rural Areas (UNGA, 2018. http://undocs.org/A/C.3/73/L.30). The emphasis on decent work and right to a dignified life is clearly outlined in article 4, especially paragraphs g) and i).

Community Supported Agriculture and Fisheries also lead the way in target 8.4, on the subject of decoupling economic growth from environmental degradation. Conservation agriculture is frequently practiced by CSA farmers, as part of agroecology and agroforestry. Mountain landscapes where pastoralists still have free access to graze their herds of cows and flocks of sheep are far les liable to landslides and cause less flooding in plains. And the respectful fishing by artisanal fishers preserve fish stocks and the marine environment, including sea-beds that are essential to the marine landscape and fish reproduction. Fishers' struggles to protect mangrove swamps - essential breeding grounds for fish – against coastal development of housing and building of tourist resorts is legendary and widespread.

SDG 9, build resilient industry, innovation and infrastructure

SDG 9 focuses on industry and innovation as well as infrastructure. This is an area where the social movement understanding and use of technology is at odds with that of incorporating it into small-scale food production. Extreme robotisation of agriculture is not part of our collective

vision. This does not mean that there is no innovation: farm hacks that use Creative Commons, judicious use of internet and smart phones are all part of the modern approach used by CSA (https://www.latelierpaysan.org/). Other innovative aspects are small-scale collective local processing units that enable added value produce to be included in local shares. These are often co-operatives. This is a clear localisation of SDG 9.3. A good example of this is one that exists near Dereo, in the Spanish Basque country. It serves to make jam as well as to prepare local hams and cheeses. By collectivising the premises it has enabled several small-scale food producers to process artisanal foods and still respect the very high level of European health and safety norms and standards. Solidarity economy at community level combined with innovation, can effectively meet local needs and European norms as well as creating sustainable decent employment and adding value to local produce. This is frequently included in CSA shares as an additional contract.

Infrastructure issues often also lead to shared solutions between various CSA producers: a single pick-up point for multi-producers where the infrastructure is provided by a school or work-place area is highly helpful in optimising transport for all. More on this in SDG 13!

Reducing inequality within and between countries, SDG 10 provides us with plenty of localisation within the framework of Community Supported Agriculture. It is the core of the solidarity economy dimension, of changing the economic paradigm of how food is shared between producers and consumers, and the different forms of monetary exchange that this involves. There are several significant ways in which this can be done: accepting food stamps in exchange for weekly shares (common in the UK and USA), crowd-funding for low-income member inclusion in a CSA group, work shares (the eater does a certain number of hours work per month in total or partial exchange for their share exist in several different countries. In the UK, an example of this structure is:

Membership type	Minimum Work Hours	Annual Fee
Tier 1	14 hours per month	£0
Tier 2	7 hours per month	£75
Tier 3	4 hours per month	£150
Tier 4	7 hours *per year*	£250 (currently closed to new members)

Local Authority subsidies such as in Korea with Sister's Garden network. Local currencies are accepted by many CSAs, which also helps to decommodify food. Local Authorities also work with food banks in several cities in France to ensure socially exuded families have access to fresh vegetables. The Baladre network in Spain also works on many of these aspects… the list is long and the impacts are deep and important. This is a core aspect of how CSA and solidarity economy interface in achieving SDG 2.

It is strongly echoed in SDG 11 on sustainable cities and communities. It does this by ensuring access to fresh, nutritious local and seasonal food using SSE and food policy councils to do this ensuring fresh nutritious food is made available in an inclusive way to inner city communities. The most effective of these was the recently disbanded CONSEA in Brazil (Food Security and Nutrition Platform, Governance Scheme and Policy Coordination, Brazil; https://plataformacelac.org/en/gobernanza/bra) where the 'Zero Fome' policy of school meal public procurement from small-scale agroecological local producers and connection of the

CSAs to inner city groups was a significant part of the programme. The repressive measures introduced by the Bolsonaro government are of great concern to our social movements. Other actors involved in specifically working with inner city groups are Just Food in New York (https://www.justfood.org/). In order to ensure that cities can be adequately fed by sustainable local food systems, it is essential to preserve green belt and peri-urban agriculture and use instruments such as Community Land Trusts (11a). Such legislation exists in many different countries (https://en.wikipedia.org/wiki/Community_land_trust). Urban rural linkages are a key element in ensuring sustainable food systems and the realisation of the SDGs.

SDG 12, Ensure responsible consumption and production

CSA also most importantly develops new models relative to several different aspects of SDG 12, responsible consumption and production (including illustrating how CSA and SSE can almost eliminate food loss and waste through a real paradigm change). By definition, in CSA the eater knows the producer and values the food. And because the time and distance from farm to fork or deck to dish is short, there is less wastage either on farm or during transport (12.2). As there are no externalised costs in CSA, and subsidies are limited, there are few if any market distortions of costs (12c). Equally, in CSA there is no such thing as 'ugly' fruit or vegetables. The eater knows that the nutritional value is the same, and never refuses misshapen items (12.3) A very significant study was carried out by the late Nigel Baker of Coventry University.

Food system	Supply chain FLW	Household FLW	Total CFC FLW
Canalside CSA	0.65%	6.1%	6.71%
Supermarket	36%*	30%	55.2%

Figures courtesy of Nigel Baker, Comparative Study of Food Waste and Loss between UK Supermarkets and Canalside CSA, 2014

This clearly demonstrates the significantly lower levels of total food chain loss and waste. Community Supported Agriculture is indeed specifically also mentioned in the CFS policy document on Food Loss and Waste (FAO. *Policy* recommendations. The *Committee* on World *Food Security* (CFS), 41st Session, 2014 www.fao.org/3/a-av037e.pdf). Cooking from scratch using fresh local food, serving smaller portions and avoiding the hypermarket "2 for the price of 1" logic of over-consumption are all key aspects, as are collective awareness-raising through education. Seasonal eating is also a given in CSAs, and corresponds to 12.8.

SDG 13, Climate change and 14, 15, 16

SDG 13, and the urgent need to take action on climate change is all too often the elephant in the room in food systems approaches. It lies at the very core of CSA, inasmuch as the low carbon footprint of production and consumption of CSA and agroecology in general, cool the planet and provide an alternative economic paradigm to globalised trade, the industrial food system developed by Transnational Corporations (TNCs) that cover the total food chain from seeds to processed foods, and to the externalisation of costs in "cheap food" that are an obstacle to

decent work (SDG 8). Many powerful solutions are provided within solidarity economy and CSA. They greatly help to mitigate climate change both in terms of methods of production and consumption and in the very nature of sustainable, nutritious local food systems. Agroecology methodology also greatly contributes to very effective climate action. It involves low or no use of plastics either on farm or in packaging. This makes a significant contribution to fighting climate change through relocalisation and elimination of fossil fuel. Furthermore, the issue of increased micro-plastics that are present in all our oceans and generally caused by poor use/disposal of plastic is dealt with at source. (14.2) The water conservation techniques are also clearly linked to fighting climate change. In many cases there has been a reintroduction of the use of draft horses in developed countries to till the land. Coupled with 'no till methods', this is a first and important aspect for improving soil health and mitigating climate change as well as landscape conservation (15.3). Cover crops, crop rotation and companion crops as well as judicious use of animal manure and compost all avoid the use of chemical inputs and reduce the fossil fuel aspects of agriculture. The judicious balance of mixed, agro-biodiverse farming where animals are grass-fed eliminates greenhouse gas emissions of CAFOs and supports the agroecological practice mentioned above. In terms of delivery, the short distance is key. In one case in the UK, the shares are actually delivered to the pick-up point using a specially adapted bicycle with a trailer. It has been argued that the fact that consumers collect their individual shares accounts for a higher carbon footprint. However this is far less than driving to the supermarket. And share pick-up points may even be at the work-place. The share pick-up is also a moment of social reconnection and community building, which is an important aspect of CSA.

Ultimately, by restoring soil and agro-biodiversity and avoiding pollution through chemical run-off from land to rivers and oceans, CSA and agroecology in general contribute to SDG 14 and 15, as do Community Supported Fisheries. CSF is a growing trend in many countries, and will eventually make a significant contribution to sustainable local food systems. Many CSAs are involved in seed saving and the preservation of biodiversity through multi-cropping and the preservation and reintroduction of heritage grains and vegetables. The overall system of sharing and solidarity in terms of production, distribution and consumption are closely linked to SDG 15.6, and the collective decision-making and governance at all levels links to SDG 16.7 and 16.8, especially in those cases where political institutions are involved, as in China.

SDG 17, Strengthen partnerships

Finally, by building territorial partnerships both with other social movements and institutions, Urgenci International Community Supported Agriculture widely uses SDG 17 to achieve all of the above from local to international level. This work has been recognised by FAO and is supported in a 3-year Memorandum of Understanding. Urgenci is a member of the Board of RIPESS Intercontinental, representing the interests of food sovereignty in the field of SEE.

This article has demonstrated how closely Community Supported Agriculture links to all SDGs. It also implies deep systemic change that can best be achieved through solidarity economy. Previous articles and studies have demonstrated how solidarity economy provides a holistic systemic change. (Judith Hitchman. Background paper for the FAO Regional Consultations with CSOs and the FAO Regional Conference (Europe and Central Asia, Baku, Azerbaijan, 15-17th of April 2012. http://www.socioeco.org/bdf_fiche-document-727_en.html) (Judith Hitchman, Who controls the Food System, Transnational Institute, April 2015

https://www.tni.org/files/download/who_controls_the_food_system.pdf)

(Judith Hitchman. Institute of Social Studies, The Hague. Why local food systems and territorial production and consumption are the new sexy solutions to the food system)**.** This article shows the deep ramifications that are possible in the specific sector of Community Supported Agriculture.