



Food sovereignty and urban-rural integration

Discussion Paper

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Foreword

We are very pleased, as LDnet, to present this discussion paper by Robert Lukesch on the theme of food sovereignty and urban rural linkages. Robert suggested this theme and developed the content for the LDnet Open Days (OD) 2015 workshop hosted by DG Regio and the Committee of the Region. As in other years, the LDnet workshop included input from academic researchers and experts engaged with EU networks combined with presentations of experiences from different local areas in the EU – in this case, from the Netherlands, Austria, Greece and the UK. The presentations at the workshop stimulated a lively debate between panellists and the audience of workshop participants. In keeping with the purpose of LDnet, the relevance of the theme of food sovereignty to CLLD as an approach was a further dimension of the workshop.

This discussion paper was prepared after the workshop. It draws on proceedings of the workshop and also deeper investigation of the theme and its relevance to current challenges including climate change and social inequality. This paper presents critical and insightful analysis, going well beyond discussion of local initiatives in the EU to reflect on the wider global dimension of food sovereignty. Its audience is policy makers, practitioners and advocates of local development.

The purpose of the paper is to connect food, which concerns everybody, with a critical analysis / reflection on current orientations including CLLD. CLLD is promoted in both urban and rural development in ESIF 2014-2020. It is embedded rural development, as a requirement under LEADER while strengthening urban-rural linkages is part of the thinking in Sustainable Urban Development (ERDF).

The analysis presented in the paper shows, inter alia, the contradictions between policies that we expect to be "close" and complementary. For instance, the CAP and rural development policies are working to different agendas and trajectories. The CAP is a big policy area with a macro-level impact and supports individual units rather than collective action. In view of current issues such as mountains of food waste co-existing with food poverty, negative environmental effects associated with improved efficiencies in food production as well as concentration in the food industry reflected in monopolies in food distribution and selling, the underlying objective of promoting "food security" has lost meaning. Rural development policies, on the other hand, supporting local initiatives based on collective action – small food producers, anti-poverty measures and bringing back power to citizens, drawing on CLLD methods – do not fit well with the bigger picture.

The paper also highlights that urban-rural linkages need more teasing out to consider at a deeper level what types of relationships can be pursued to benefit both. Many current trends and policies (and regulatory frameworks) run counter to reshaping the dynamic between urban and rural areas. In this area, CLLD is marginalised but is an essential process towards sustainable development and for the policy agenda to be citizen focused. If we take the analysis from this issue of food sovereignty into the wider development context we are struck by the fact that super-regions may produce growth but there are major costs and limitations associated with agglomeration. This suggests that models of decentralised government at sub-regional and local level (cities and rural hinterlands) are more likely to be conducive to the wider public good.

In the spirit of the Discussion Paper, we would welcome comments and feedback including alternative views and examples and lessons from experiences.

Eileen Humphreys, President LDnet

Preface

Credits

This discussion paper emanates from a workshop organized by the local development association LDnet during the Open Days 2015 hosted by the DG Regio and the Committee of the Regions in Bruxelles.¹ The workshop was entitled: *Food sovereignty and urban-rural integration*. The paper owes much to the contributors to this workshop, the keynote presenters Marianne Karstens (Walnut Food and Hospitality Management, NL) and Bob Cannell (Suma Wholefoods, UK), as well as the panelists, Sandra Karner (IFZ, AT), Eleni Myrivili (City of Athens, EL), Boban Ilić (SWG RRD, MK), Urszula Budzich-Szukala (LDnet and ENRD, PL), André Vizinho (CE3C at the University of Lisbon, PT) and Toby Johnson (LDnet and AEIDL, UK), to Eileen Humphreys (LDnet and AEIDL, IE) for keeping the records from the workshop discussion and to Haris Martinos (LDnet, UK) for his crucial role to make this workshop happen. Some of these colleagues have also commented on an earlier draft of this paper.

The Challenge

The physical space or capacity for this workshop was too small compared with the response from participants at Open Days who registered interest in attending the workshop. Moreover, the available workshop time of two and a half hours was far too short to explore the interlinkages and ramifications uncovered in presenting experiences and the discussions. One of the reasons may be that the two issues which the theme brought together are mainly discussed within hermetic policy silos and expert communities. Their interlinkages remain rudimentary like the notorious *Pont d'Avignon*. We are convinced that it is their intersection where the solutions of many barriers to sustainable transformation pathways can be found, beyond the sectoral perception of food systems, and the heavily institutionalized discourse on regional development.

The paper starts with elaborating on the two issues of the theme, the increasingly unsustainable production and distribution of food on one hand and the debate on urban-rural interrelationships on the other. From the beginning, we try to embed this discussion in the normative frame of sustainable development in the so-called Brundtland Report on "Our common future"²:

Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

It is clear that this definition of sustainable development includes the concept of a low-carbon or zero-carbon society and climate protection which is far more in the foreground of global discussion nowadays. It must be stated that these discussions do not always meet the goals of sustainable development, e.g. when it comes to the use of nuclear energy. However, when we refer to a low-carbon, zero-carbon or carbon-neutral future in this paper, we do so while keeping in mind the above mentioned sustainable development goal.

Following from this introductory section, we attempt to systematize what we understand under "local food systems" and then proceed to illustrate these by using some of the examples presented during the Open Days LDnet workshop.

Drawing on these experiences, we derive lessons on mechanisms at work in successful examples. This discussion then leads on to final conclusions and recommendations directed to civil society and policy makers. Reactions to and further comments on this discussion paper are welcome...as naming it a discussion paper suggests. Opinions can be posted on the LDnet website. Further feedback will certainly contribute to refining and sharpening the recommendations emanating from our work.

¹ The workshop took place on October 13, 2015 from 14:30 to 17:00 in the building of the Committee of the Regions.

² The United Nations World Commission on Development and Environment (1991). Gro Harlem Brundtland (NO) was Chairwoman of the Commission.

1 Global concentration of food production

In their recent study on local food systems, the Friends of the Earth (FoE) Europe state:

To date, both the CAP and EU trade policies have focused on finding new global markets for EU agricultural products, while doing less to support initiatives which give farmers who produce sustainably the opportunity to sell their products locally through farmers' markets, farm shops, or to schools and other public institutions, providing fresh, seasonal, sustainable food.

Current efforts to secure new transatlantic trade deals between the EU and the US (TTIP) and Canada (CETA) are exacerbating this situation. Designed to increase trade in agricultural products between North America and the EU, they represent an industry-led threat to small-scale producers on both sides of the Atlantic. Modelling has suggested the deals will lead to an increase in intensive farming, with damaging environmental and social impacts.³

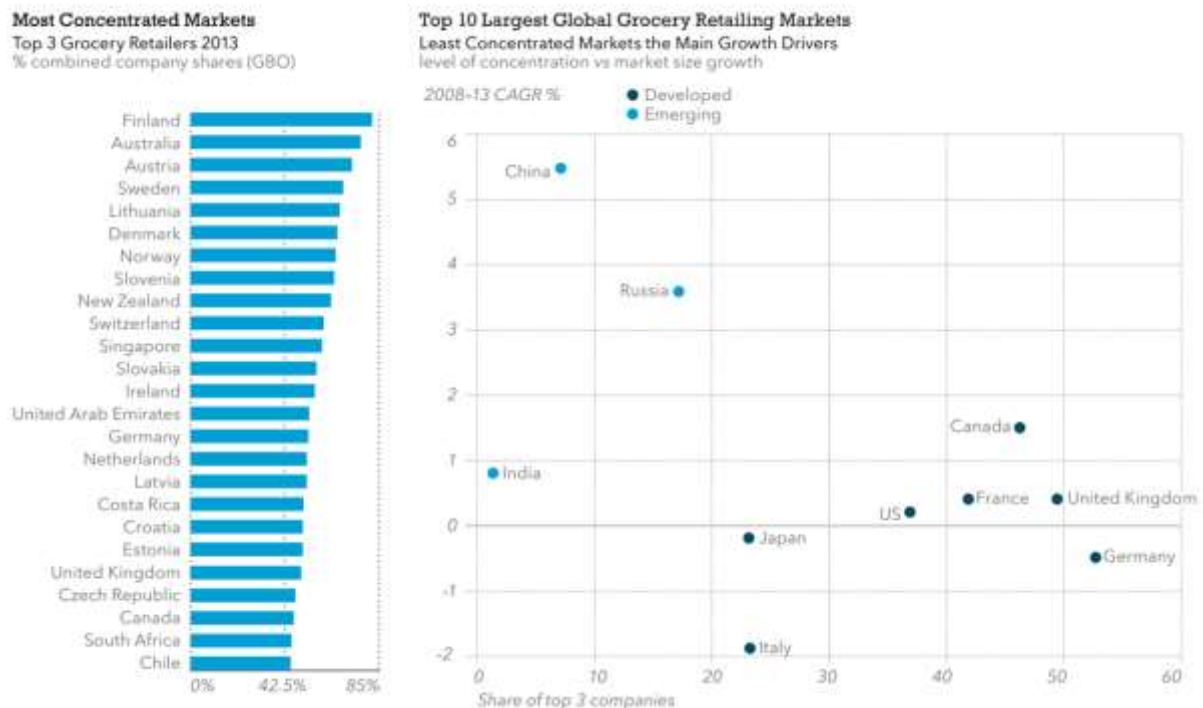
Indeed, the European High Level Forum for a Better Functioning Food Supply Chain⁴ has been explicit on social relationships within the food chain, on price issues and export promotion. However, it is squalling mute about structural facts, first and foremost about the very significant increase in concentration in the food sector.

Concentration in the food economy is enormous and continues to grow. For instance, the seven biggest retailers in Great Britain control more than 90% of the market, with Tesco alone controlling more than 30%. The *Euromonitor Passport* (Figure 1) provides a dramatic snapshot of the situation worldwide with Finland indisputably on the top and China “on the march” towards stronger concentration.

³ Friends of the Earth Europe (2015): *Eating from the Farm: the social, environmental and economic benefits of local food systems*, p.7

⁴ set up in 2010 and renewed in June 2015 in the follow-up of the EC Communication on *A Better Functioning Food Supply Chain in Europe*

Figure 1: Profile of food retail concentration (Euromonitor 2014)⁵



Looking closer, Figure 1 shows slight drops in concentration in Italy, Japan and Germany, which had already reached a 68% share for the largest three retailers in 2005. This drop may be attributed to the inexorable rise of e-commerce whose first victims are supermarket chains. However, it means only a temporary reprieve in the concentration race, because in the longer run the concentration in all product categories is on the unabated rise⁶, and it is only a question of time until the retail giants percolate the online retail markets or – not so far-fetched an idea – even leave the field to Internet giants such as Amazon.com. Indeed, this is already happening.

Figure 2 Amazon fleet ready to swamp the UK with fresh food⁷



This trend towards monopolization is not only entirely inappropriate from a competition point of view (small retail stores muddling along against global giants). It is also unwholesome with regard to the monopsony of these giants in relation to food producers:

The UK Competition Commission in 2000 concluded that supermarkets having at least an eight per cent share of grocery purchases for resale from their stores, have sufficient buyer

power [to undertake abusive practices which] when carried out by any of these companies, adversely

⁵ http://www.euromonitor.com/medialibrary/PDF/pdf_groceryRetailing-v1.1.pdf, CAGR means *Compound Annual Growth Rate*.

⁶ European Commission (2014): The economic impact on choice and innovation in the EU food sector. Final Report by EY, Cambridge Econometrics Ltd. and Arcadia International, Bruxelles.
<http://ec.europa.eu/competition/publications/KD0214955ENN.pdf>

⁷ Retail & Consumer (2015): Amazon launches pantry raid to infiltrate the UK grocery market. John Murray Brown, Nov. 13, 2015. <http://www.ft.com/cms/s/0/eb68562c-8a03-11e5-90de-f44762bf9896.html#axzz3wwOEL6Ky>

*affect the competitiveness of some of their suppliers and distort competition in the supplier market—and in some cases in the retail market—for the supply of groceries.*⁸

The concentration process, going hand in hand with the growing need for consumers to eat out or to rely on convenience food is inseparably tied to the increasing industrialization and fashioning of food. Consumers lose control over what they actually purchase and consume. Whereas in former times, people simply avoided food which caused trouble (such as diarrhea due to lactose intolerance), it becomes more and more difficult to trace the presence of allergens (gluten, fructose...) or otherwise critical substances in designed convenience food. Health administrations react with comprehensive disclosure prescriptions and control mechanisms which are usually easier to handle for large suppliers than for micro enterprises. Ultimately, rising market barriers for small producers and processing plants further contribute to the trend towards stronger concentration:

- *The world's largest food producer, Brazil-based JBS, owns capacities of 85.000 head of cattle, 70.000 pigs, and 12 million birds on four continents. Every day.*⁹ *This makes it one of the four suppliers which control 75% of the beef market in the US.*¹⁰
- *Only four corporations – ADM, Bunge, Cargill and Dreyfus – control more than 75% of the global grain trade. They overwhelmingly push commodity crops like corn and soy on local farmers at the expense of native crops.*

Focusing on the input side of agricultural production, the picture is one of monopolies in all areas. Six corporations – Monsanto, DuPont, Dow, Syngenta, Bayer and BASF – control 75% of the world pesticides market. We could say that this more or less concerns non-organic farming practices.¹¹ However, the most critical monopolization challenge lies in the seed and breed sector:

*According to Philip Howard, a researcher at Michigan State University, economists say that when four firms control 40% of a market, it is no longer competitive. According to AgWeb, the "big four" biotech seed companies—Monsanto, DuPont/Pioneer Hi-Bred, Syngenta, and Dow AgroSciences—own 80% of the US corn market and 70% of the soybean business. Monsanto has become the world's largest seed company in less than 10 years by capturing markets for corn, soybean, cotton, and vegetable seeds, according to a report by the Farmer to Farmer Campaign. In addition to selling seeds, Monsanto licenses its genetically modified traits to other seed companies. As a result, more than 80% of US corn and more than 90% of soybeans planted each year contain Monsanto's patented GM traits.*¹²

Squeezed in the middle between agricultural suppliers on one side and food processors and traders on the other, there are still around 570 million farms worldwide, 500 mio. of them being categorized as family farms:

More than 90 percent of farms are run by an individual or a family and rely primarily on family labor. According to these criteria, family farms are by far the most prevalent form of agriculture in the world. Estimates suggest that they occupy around 70 – 80 percent of farm land and produce more than 80 percent of the world's food in value terms. The vast majority of the world's farms are small or very small, and in many lower-income countries farm sizes are becoming even smaller. Worldwide, farms of less than 1 hectare account for 72 percent of all

⁸ Source: UK Competition Commission inquiry into the groceries market in 2000, cited in [http://www.bananalink.org.uk/sites/bananalink.neontribe.co.uk/files/documents/Retailers/EU%20Retail%20Briefing%20\(web\)%20Final%20\(2\).pdf](http://www.bananalink.org.uk/sites/bananalink.neontribe.co.uk/files/documents/Retailers/EU%20Retail%20Briefing%20(web)%20Final%20(2).pdf), p.1

⁹ Heinrich Böll Foundations and Friends of the Earth Europe (2014): The Meat Atlas. Facts and figures about the animals we eat. P. 12.

¹⁰ JBS with its 22% is now second behind Tyson Foods (24%). <http://marketrealist.com/2014/12/tyson-foods-commands-24-of-the-beef-market/>

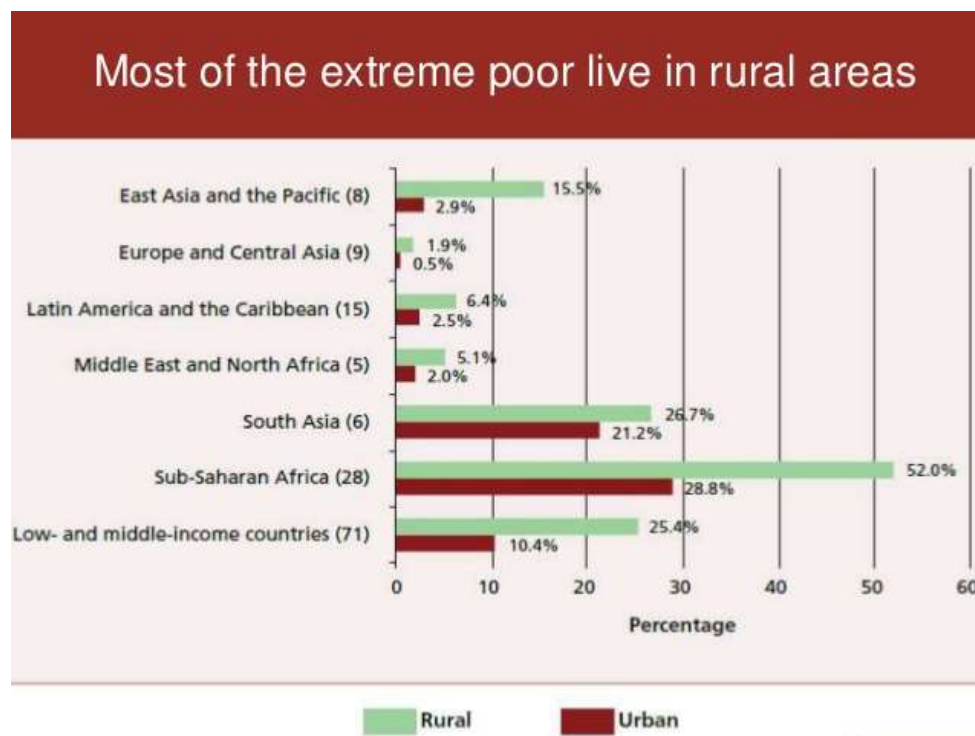
¹¹ Greenpeace: Corporations control our food.

¹² Ken Roseboro (2013): The GMO seed cartel. The Organic & Non-GMO report, Feb.1, 2013. <http://www.non-gmoreport.com/articles/february2013/the-gmo-seed-cartel.php>

farms but control only 8 percent of all agricultural land. Slightly larger farms between 1 and 2 hectares account for 12 percent of all farms and control 4 percent of the land, while farms in the range of 2 to 5 hectares account for 10 percent of all farms and control 7 percent of the land. In contrast, only 1 percent of all farms in the world are larger than 50 hectares, but these few farms control 65 percent of the world's agricultural land. Many of these large, and sometimes very large, farms are family-owned and operated.¹³

As most smallholders live in poor countries, it is not surprising that newly industrialised countries host the majority of the world's poor populations.

Figure 3 Rural poverty worldwide¹⁴



Huge trade volumes over large distances and the hygienic and cooling requirements typical for the food sector engender allocation problems. Enormous amounts of food end up as waste. Despite the technological and organisational progress which distinguish the early industrialised countries from the newly industrialised ones, the percentage of food losses has virtually not changed:

About a third of all food produced globally for human consumption is lost or wasted - around 1,3 billion tons per year, according to the FAO. Food loss and waste in industrialised countries are as high as in developing countries, but their distribution is different:

- In developing countries, over 40% of food losses happen after harvest and during processing;
- In industrialised countries, over 40% occurs at retail and consumer level.¹⁵

Public interventions contribute to mitigate some of the negative externalities of the entire food system: on the production side, e.g. the agri-environmental payments of the EU Common Agricultural

¹³ FAO (2014): The State of Food and Agriculture 2014 in brief. <http://www.fao.org/3/a-i4036e.pdf>. P.2

¹⁴ http://de.slideshare.net/FAOoftheUN/the-state-of-food-and-agriculture-2015-social-protection-and-agriculture-breaking-the-cycle-of-rural-poverty?next_slideshow=2. The numbers in brackets indicate the number of countries counted in the statistics.

¹⁵ http://ec.europa.eu/food/safety/food_waste/stop/index_en.htm

Policy (CAP), on the consumption side e.g. the most recent French law against discharging food as waste¹⁶. However by and large both the EU CAP and trade policies and Member States initiatives have focused on finding new global markets for agricultural products, while doing less to support initiatives which give farmers who produce sustainably the opportunity to sell their products locally through farmers' markets, farm shops, or to schools and other public institutions, providing fresh, seasonal, sustainable food.

Current efforts to secure new transatlantic trade deals between the EU and the US (TTIP) and Canada (CETA) are exacerbating the situation. Designed to increase trade in agricultural products between North America and the EU, they represent an industry-led threat to small-scale producers and to the traceability and quality of food on both sides of the Atlantic. Modelling of potential effects has suggested the deals will lead to an increase in intensive farming, with damaging environmental and social impacts.¹⁷

Interim conclusion 1

- Multinational companies increasingly dominate the agribusiness sector from inputs (e.g. seeds, plant protection products), through marketing, food processing and retailing.
- Enhanced industrial food processing, long-distance food trade, monopolization of the agri-food system upstream and downstream leads to strong pressure on farms to grow or disappear. Precarious livelihoods of rural smallholders and the increasing tendency of governments to pave the way for large corporate agribusiness investors (land grabbing) in order to refloat the trade balances of their countries fuels the flow of people to urban areas. The process becomes more and more connected to large-distance migration.
- The multiple entanglement of global food trade with other speculative financial operations and with geo-political turbulences make the food price increasingly volatile. Peaks in food price levels trigger political uprising and contribute to the long-term destabilization of large regions (e.g. the derailed 'Arab spring').
- The agri-food system is highly toxic for the environment and climate. 25% of carbon emissions come from agriculture, moreover 54% of methane and 80% of nitrous oxide emissions¹⁸, while food waste amounts to 40%.
- Risks are growing on a global scale while the benefits from running these risks are accruing to large economic players and to the wealthy few who have the capacity (awareness and purchasing power) to acquire healthy food everywhere and at any time of the year. The FAO states that the share of people experiencing hunger remains close to one billion; every fourth child born on this planet suffers from malnutrition¹⁹. On the other hand, according to the WHO worldwide obesity has more than doubled since 1980. In 2014, more than 1.9 billion adults, 18 years and older, were overweight. Of these over 600 million were obese.²⁰
- It has to be stated that the organic food producers and consumers follow a different vision. However they can't escape "the rules of the game". With some delay, the organic market is about to follow the global food trade pattern, as the countries with high share of organic consumers offer a better price for producers. This is increasingly realized by food exporting countries. Turkey leads the list of countries in terms of organic land (ha) in Europe, whereas it is

¹⁶ Adopted on 3rd of February 2016 by the French Senate.

¹⁷ Friends of the Earth Europe (2015): Eating from the Farm: the social, environmental and economic benefits of local food systems. P. 7

¹⁸ <http://www.climate.org/topics/agriculture.html>

¹⁹ <http://www.pharmazeutische-zeitung.de/index.php?id=47365>

²⁰ <http://www.who.int/mediacentre/factsheets/fs311/en/>

in 40th position in terms of its domestic turnover of organic produce, together with Latvia and Slovakia.²¹ The dilemma of how to mainstream organic production without falling into the trap of the global food system pattern is currently subject to a lively, if not heated, discussion among organic producer associations and committed experts within the EU²².

- For the sake of human well-being on this planet, the concentration spiral has to be disrupted. However the agri-food sector itself does not deliver vantage points effective enough to make that happen. Policy interventions at EU level are toothless, heavily biased by vested interests, and ultimately fuelling the concentration race. The machinery is simply out of control.

2 The urban-rural divide vs. integration

2.1 Unfettered urbanisation

Territorial relationships have deeply changed in recent decades. Improvements in communications technology, ever-increasing movements of people and goods, and changes in land use are only some of the factors shaping spatial relationships. There is a global migration trend towards urban agglomerations. This trend is not only an empirical fact; there is a growing tendency among economists to view it as the norm. The World Bank Development Bank Report 2009 stipulates urban concentration („high density, short distance, strong dynamics“) as a prerequisite for growth and development. The Report criticises experts and policy makers pursuing policies to mitigate rural-urban migration or territorial disparities as misled.²³

This stance did not remain undisputed: The OECD Report „Regions Matter“ (2009) responds with a strong advocacy of appropriate policies in favour of so-called „lagging regions“²⁴. According to this view, equity and efficiency are not mutually exclusive objectives. In respect to economic growth the OECD states that rural areas require tailor-made, place-based policies to realise their development potential, as they respond less to generic stimuli such as market liberalization or tax reduction. In fact, rural regions in OECD countries prove to be drivers of economic development in difficult times:

*Rural regions recorded the fastest pace of growth in GDP per capita over the period 2000-2010, in 9 out of 21 countries considered, rural regions recorded the slowest pace of growth among types of regions on average.*²⁵

²¹ FIBL and IFOAM (2015): The World of Organic Agriculture. Statistics and Emerging Trends 2015.
<https://www.fibl.org/fileadmin/documents/shop/1663-organic-world-2015.pdf>

²² For instance, the discussion is running under the slogan “Bio 3.0” in Germany. See the discussion paper of four German producer associations (<http://www.bioaktuell.ch/fileadmin/documents/ba/bildung/Bio-DreiNull-zweiterEntwurf-2015-09-30.pdf>) and the response from the German Foundation *Zukunftsstiftung Landwirtschaft* (http://www.zukunftsstiftung-landwirtschaft.de/media/Dokumente_Aktuelle_Meldungen/ZSL_zu_bio_3_0_11Pkt.pdf).

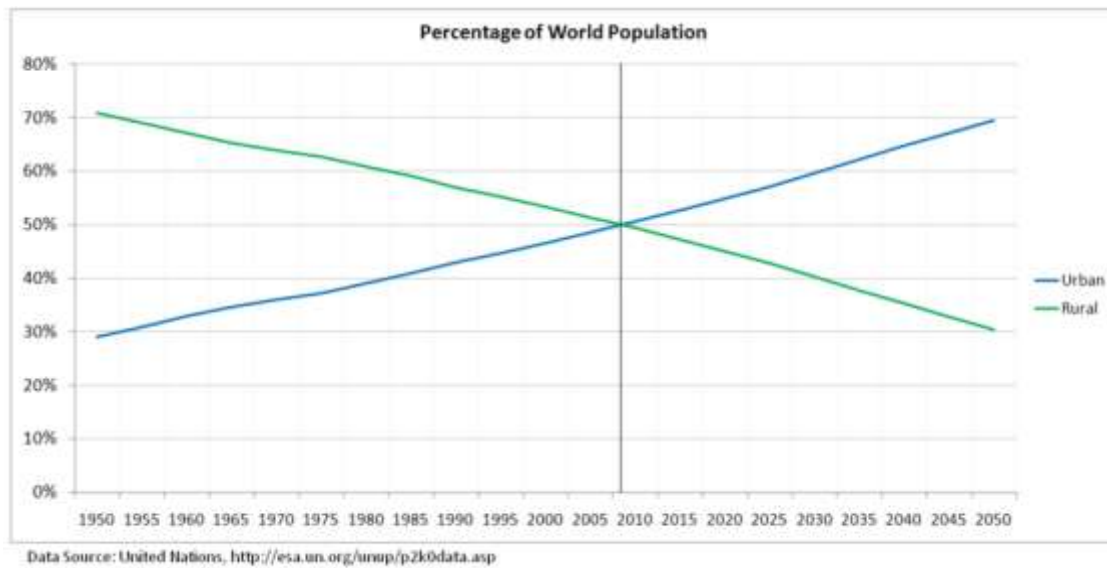
²³ World Bank (2009): WB Development Report: Reshaping Economic Geography. New York.

²⁴ Which are mostly rural, worldwide, but also in Europe, although the picture is much more diverse here. Point 9 of the The European Rural Manifesto calls for “reversing the spiral of decline”. The *European Rural Manifesto* has been adopted during the Second Session of the *European Rural Parliament* in Schärding/AT (4-6 Nov. 2015) which is a broad civil society initiative encompassing European NGOs and rural development movements from more than 30 European countries. It was founded in 2013 in a first session in Bruxelles.

[file:///C:/Users/user/Downloads/European%20Rural%20Manifesto%202015%20final%20\(1\).pdf](file:///C:/Users/user/Downloads/European%20Rural%20Manifesto%202015%20final%20(1).pdf)

²⁵ OECD (2013): Rural-Urban Partnerships. An Integrated Approach to Economic Development, OECD Publishing, p.28.

Figure 4 UN estimation of urban and rural population growth²⁶



If current trends continue, the average world citizen of tomorrow will be a (mega-)city dweller. In the mega-city the traditional traits of cities become concrete and tarred landscapes, reef-like artefacts which tend to connect with other mega-cities rather than with the wider regions from which they have grown.

Figure 5 The Chinese city of Qingdao (8,7 mio. inhabitants)²⁷



²⁶ https://commons.wikimedia.org/wiki/File:Percentage_of_World_Population_Urban_Rural.PNG

²⁷ New Scientist (2012): Megacity China: The ultimate in urban migration. New Scientist, 17.12.2012. <https://www.newscientist.com/blogs/shortsharpscience/2012/12/megacity-china.html>. Qingdao was denominated „China’s most livable city“ in 2009 und 2011. One of the main criteria for the prize is that the city must have a beautiful environment.

In 2007 our planet reached a remarkable milestone, with the world urban population overtaking the number of people living in the countryside. In Europe 68% of the population already live in urban areas. Scientists predict that as the world population increases (with estimates suggesting it is likely to reach 10 billion people by the year 2050), this process of urbanisation will accelerate. This growth will take place at the expense of peri-urban and rural areas, raising important questions about the future of agriculture, the conservation of essential natural resources (water, energy supplies, and fertile soils) and the protection of vital natural areas. We will not only need to feed more people in a sustainable way, but we will also need to meet new and evolving societal needs.²⁸

In the wake of unfettered demographic shifts towards growing cities and metropolitan agglomerations²⁹, the debate on sustainability strategies has recently focused on changing the patterns of mass consumption, “smart” sustainable urban lifestyles³⁰ supported by disruptive innovations such as autonomous mobility³¹, smart grids³², plus-energy architecture³³ and a new breed of photovoltaic power generation based on photosynthetic substances³⁴. Relevant initiatives and networks take on promising names such as *transition towns*³⁵, *urban agriculture/gardening* and *green cities*³⁶, *smart cities*³⁷ and *resilient cities*³⁸, but fossil fuels still represent the overwhelming energy base fuelling industrial metabolism. High-GHG industrialized agriculture nourishes the majority of the population in industrialized countries³⁹. GHG emissions are stagnant but way beyond sustainable levels in industrialised countries, whereas they are rising rapidly globally⁴⁰, mainly as a consequence of the ongoing agrarian-industrial transition⁴¹.

Reconsidered from a “hard headed” perspective, the Paris Agreement on Climate Protection from December 2015 strangely becomes a nonsense by the outspoken corporate strategies⁴² in the wake

²⁸ Friends of the Earth Europe (2015): Eating from the Farm: the social, environmental and economic benefits of local food systems, p.2.

²⁹ UN Department of Economic and Social Affairs - Population Division, 2014. World Urbanization Prospects, the 2014 revision. <http://esa.un.org/unpd/wup/>

³⁰ Gomi, K., Shimada, K., Matsuoka, Y., 2010. A low-carbon scenario creation method for a local-scale economy and its application in Kyoto city. Energy Policy 38, 4783–4796; and European Commission, DG Regio, 2012. Connecting Smart and Sustainable Growth through Smart Specialisation. A practical guide for ERDF managing authorities (Nov. 2012), Bruxelles.

³¹ Hars, A., 2014. Autonomous Cars, Breakthrough for Electric Vehicles. Inventio Innovation Briefs, Issue 2014-02. Version 1.2 (2013-03-10), Nürnberg.

³² Pota, H.R., Weber, C., Guerrero, J.M., Zobaa, A.F., 2015. Technology and Economics of Smart Grids and Sustainable Energy. Springer, Berlin.

³³ TU Wien, 2014. TU Wien eröffnet Österreichs erstes Plus-Energie-Bürohochhaus. Press Release 112/2014 from 2014-11-06. https://www.tuwien.ac.at/aktuelles/news_detail/article/9083/

³⁴ energie:bau, 2014. Weltausstellung: Energieeffizienter Österreich-Pavillon. energie-bau.at. Portal für Architektur und Technik (2014-12-10). <http://www.energie-bau.at/bauen-sanieren/2070-weltausstellung-energieeffizienter-oesterreich-pavillon>

³⁵ Hopkins, R., 2015. Transition Network Blog. <https://www.transitionnetwork.org/blogs/rob-hopkins>

³⁶ Bailkey, M., and J. Nasr. 2000. From Brownfields to Greenfields: Producing Food in North American Cities. Community Food Security News. Fall 1999/Winter 2000:6

³⁷ TU Berlin, Centre for Metropolitan Studies, 2015. Wiki-blog on Smart Cities. http://de.smartcityberlin.wikia.com/wiki/SmartCity_Wiki

³⁸ UNISDR, 2011: Rendre les villes plus résilientes. Manuel à l'usage des dirigeants des gouvernements locaux. Genève, CH.

³⁹ Fischer-Kowalski, M., Haberl, H., 2007. Socioecological Transitions and Global Change. Trajectories of Social Metabolism and Land Use, Advances in Ecological Economics (series editor: Jeroen van den Bergh). Edward Elgar, Cheltenham and Northampton.

⁴⁰ See the website of the US Environmental Protection Agency: <http://www3.epa.gov/climatechange/science/indicators/ghg/global-ghg-emissions.html>

⁴¹ Haberl, H., Fischer-Kowalski, M., Krausmann, F., Martinez-Alier, J., Winiwarter, V., 2011. A socio-metabolic transition towards sustainability? Challenges for another Great Transformation. Sustain. Dev. 19, 1–14.

⁴² Just as an example, the Lukoil trend forecast: “Global demand for liquid hydrocarbons will continue to grow.” http://www.lukoil.com/materials/doc/documents/Global_trends_to_2025.pdf

of the obscenely low oil price at present. How can growth in that sector be promoted if 80% percent of today's oil and gas reserves would have to remain underground if the Paris Agreement should be effective?

2.2 Urban futures, rural idylls

By contrast, the discourse on rural development is still largely dominated by the agricultural policy in place, although goals such as the preservation of natural resources and biodiversity are gaining in importance⁴³. It emphasizes the ideal-typical notion of a circular economy⁴⁴, but the policy and disciplinary gap between agricultural/rural policy and regional/growth pole oriented development is impacting negatively on the comprehensive and systemic approach required for any regional and *a fortiori* the global sustainability discourse to get the edge on policy makers, corporate lobbies and the short-term interests of stakeholders⁴⁵.

Rural development strategies in Europe are first and foremost funded through EAFRD programmes⁴⁶ which are expected to work towards the Europe 2020 objective of “*smart, sustainable and inclusive growth*”⁴⁷. By and large, they reflect the spirit of yesterday's visions of modernisation, including green growth, climate protection and biodiversity preservation measures – all-in-all unlikely to contribute substantially to far-reaching changes in societal metabolism. However, what is more disquieting is that the rural development visions, specifically in places where agriculture is on the retreat due to lack of price competitiveness, paint a picture of an idyllic self-sufficient and pristine eco-paradise constructed for the recreation-seeking urban visitor, second home owner and consumer without any connection to rural development in particular and to the overarching idea of sustainable territorial development – including urban and rural areas – in general⁴⁸.

⁴³ ARC2020, 2015. Transitioning towards Agroecology. Using the CAP to build new food systems, Bruxelles, Berlin.

⁴⁴ Bayrisches Staatsministerium für Ernährung, Landwirtschaft und Forsten, 2013. Ländliche Entwicklung in Bayern. Zukunft durch Zusammenarbeit. Vision 2030 für den ländlichen Raum, München.

⁴⁵ MIT, 2000. Why do urban-rural linkages matter? Understanding Issues - Answers to common questions concerning the urban environment. Extracted from: DANIDA Workshop Papers: Improving the Urban Environment and Reducing Poverty; December 5, 2000; Copenhagen, Denmark. <http://web.mit.edu/urbanupgrading/urbanenvironment/issues/rural-urban-linkages.html>; and Lukesch R., 2007: Study on topics and policy issues concerning sustainable rural-urban relations in Europe. ÖAR Regionalberatung, Hirzenriegl. Download: https://www.researchgate.net/publication/281272598_Study_on_topics_and_policy_issues_concerning_sustainable_rural-urban_relationships_in_Europe

⁴⁶ EU 2013: Regulation 1303/2013 on support for rural development by the European Agricultural Fund for Rural Development (EAFRD) from the European Parliament and Council. 17 Dec. 2013, Bruxelles.

⁴⁷ EU 2010: Europe 2020. A Strategy for smart, sustainable and inclusive growth. COM(2010) 2020 from 3 March 2010, Bruxelles.

⁴⁸ Hadjimichalis, 2003. Imagining Rurality in the New Europe and Dilemmas for Spatial Policy. European Planning Studies, Vol. 11, No. 2, p. 103-113. Carfax Publishing, Taylor&Francis.

Figure 6 Happy relaxation in rural areas and technological redemption in smart cities⁴⁹



Figure 7 The shadows. Agricultural mass production and urban slum (Kibera (Nairobi), Kenya)⁵⁰



Time and again, policy makers, civil society representatives and committed researchers emphasize the necessity to “reconnect the city to its hinterland”⁵¹ and to bridge the urban-rural divide through sustainable development concepts integrating various territorial scales. The reintegration of sub-regional and regional ties and flows is a central topic in the recent wave of publications on resilient regions⁵². It is also a core concern expressed in the European Rural Manifesto 2015:

*We call for increased cooperation between communities, organisations and authorities in rural and urban areas in order to gain the full benefit of social, cultural and economic links which such cooperation can bring; and for vigorous exchange of ideas and good practise between those involved in rural and urban areas.*⁵³

⁴⁹ Lukesch R. (2015): Food Sovereignty and Urban-Rural Integration. Keynote to the Open Days Workshop, Oct. 13, 2015 in Bruxelles. The pictures are taken from an Austrian tourism promotion website (Kufstein region, Tyrol) and from an open web source (urban future and tractor on field).

⁵⁰ Web sources: http://www.helles-koepfchen.de/massentierhaltung_leben_fuer_den_tod_teil1.html
https://en.wikipedia.org/wiki/Kibera#/media/File:Kibera_Slum_Railway_Tracks_Nairobi_Kenya_July_2012.jpg

⁵¹ Heinonen, Sirkka & Lauttamäki, Ville (2011). Backcasting Scenarios of Finland 2050 of low emissions. 13 June, 2011, 4th International Seville Conference on Future-Oriented Technology Analysis, 12 June, 2011, Sevilla, Spain. Presentation + paper. Published in Journal Foresight 2012; and Gray, J., 2013: The Great Divide - Building Bridges between Cities and their Rural Hinterlands. Transition Network Blog. <https://www.transitionnetwork.org/stories/guest-blogger/2013-03/great-divide-building-bridges-between-cities-and-their-rural-hinterland>.

⁵² Lukesch R., Payer H., Winkler-Rieder W. (2010): Wie gehen Regionen mit Krisen um? Eine explorative Studie über die Resilienz von Regionen. ÖAR on behalf of the Austrian Chancellery, Wien; Lukesch R. (2012): Resilient Regions. Presentation at the European Round Table of Sustainable Production and Consumption. Bregenz/AT, 03/05/2012; and Kegler H. (ed.) (2014): Resilienz. Strategien und Perspektiven für die widerstandsfähige und lernende Stadt. Birkhäuser.

⁵³ See the full text of the European Rural Manifesto on the website of the European Rural Parliament.

<file:///C:/Users/user/Downloads/European%20Rural%20Manifesto%202015%20final.pdf>

Summing up the arguments presented above, the big picture which considers the parts and the whole, namely the complementary roles of rural and urban areas in a future carbon-neutral and sustainable society, seems to be getting out of sight, in research, policy and politics. Are we witnessing the perspective of sustainable territories breaking up into fragmented visions of urban futures and rural idylls?

2.3 Urban, rural, one space

Drawing a clear line between urban and rural territory is becoming increasingly difficult – due to the differentiation of settlement patterns that range beyond clear-cut urban or rural characteristics. Could it be that the plain old distinction between rural and urban areas is just limiting our minds and therefore keeping us from finding suitable solutions for contemporary challenges?

The OECD Report on Rural-Urban Partnerships⁵⁴ identifies the following drivers of urban-rural interactions and the rationale for possible policy interventions:

- Demographic linkages
- Economic transactions and innovation activity
- Delivery of public services
- Exchange in amenities and environmental goods
- Multi-level governance interactions.

For its analysis and the localisation of case studies on successful rural-urban partnerships, the OECD distinguishes between

- Metropolitan regions
- Networks of small and medium-sized cities
- Sparsely populated areas with market towns.

As a conclusion from conceptual deliberations and empirical findings, the OECD conceives rural-urban partnerships using the following features:

- An awareness of the interdependency of rural and urban areas in a given space (functional region);
- A membership mix that includes the relevant rural and urban representatives;
- A framework for action or objectives that represents mutual interests (urban and rural);
- Initiatives aimed at yielding collective benefits to urban and rural partners;
- An organisational form that is fit for purpose to help realise the partnership's objectives.⁵⁵

Furthermore the OECD identifies four drivers for rural-urban partnerships:

- Economic development (e.g. territorial promotion, local supply chains, particularly the agri-food sector);
- Natural asset management (e.g. drinking water management, spatial planning to reduce urban sprawl);
- Service provision (e.g. transport systems, health, social care, waste disposal, education);
- Political relevance and access to funds (gaining more visibility, attract resources and gain credibility).

Turning our attention to the substantial changes which would accompany the choice for sustainable development paths, which means taking into account the requirements of climate protection and

⁵⁴ OECD (2013): Rural-Urban Partnerships. An Integrated Approach to Economic Development, OECD Publishing, p.22.

⁵⁵ Idem, p.34.

sustainable development, German experts sketch the vision of *resilient cities*⁵⁶ based on seven core elements:

- Total switch to renewable energies on all territorial scales (from macro-regions to individual buildings);
- Carbon neutrality for all social realms, specifically for the economy and municipalities;
- Decentralisation of the city region in respect to technical supply and discharge systems, but also in respect to local self-organisation (neighbourhood-based systems);
- The “photosynthetic city” which develops green sites for economic activities, food and energy supply;
- The eco-efficiency town as a model of non-linear, circular systems;
- Place-based development which makes the city the fundament for local economic activities and cultural expressions;
- Sustainable mobility systems integrating transit-oriented, pedestrian-oriented and green-oriented development, as well as e-mobility.

How would these changes come about? From a systemic perspective, social systems, such as cities, regions, nations...are autopoietic systems⁵⁷. Social systems are self-referential and cannot be deliberately changed in a certain direction from any internal or external vantage point. Social systems change themselves, in the flow of myriads of interactions. Governance interventions, citizen initiatives, arts events, manifestos and other forms of social interaction are all processed by the strange thing we call “society” in its own ways, and these are inherently unpredictable. There is also the uncomfortable truth that we face a very troubling asymmetry: It is very difficult to achieve lasting positive changes (i.e. a sustainable development path, which is climate-neutral, inclusive, peaceful, we won’t stop dreams of good outcomes!), but it is much easier to damage or to destroy the social fabric and the environment. To achieve positive results, we can just try to create an enabling environment in largely indirect ways, whereas damaging or utterly destroying a system can be easily done, quickly and directly.⁵⁸

The keyword which is very in vogue in this respect is *soci(et)al innovation*. Social innovation is emphasized as a potential lever to change people’s behaviour, consumption and production patterns in favour of more sustainable lifestyles⁵⁹. Seen from a sober and rational perspective, changes are rarely induced by insight; it is rather the search for advantages (in terms of wealth, power or reputation) and the resulting shifts in the societal fabric, or coercion (be it governmental enforcement or other forms of pressure) which may lead to changing behaviour patterns⁶⁰.

Another complicating factor is the systemic character of behaviour which makes people act in ways that are contradictory to their espoused values. This occurs due to interlocking conditions associated with the payoffs in their everyday decisions which produce unsustainable outcomes⁶¹. In other words,

⁵⁶ In fact, their approach could as well be named „resilient regions“, but the researchers come from an academic background focusing on city planning and development, and the urban perspective prevails throughout the book – which does not diminish its insightfulness and quality. Kögler H. (ed.)(2014): Resilienz. Strategien und Perspektiven für die widerstandsfähige und lernende Stadt. Birkhäuser. P. 38f.

⁵⁷ It would go beyond the scope of this paper to explain the background of systemic thinking in this paper. See the useful synthesis explaining Luhmann’s notion of autopoietic social systems by Seidl D., Munich University: http://www.zfog.bwl.uni-muenchen.de/files/mitarbeiter/paper2004_2.pdf

⁵⁸ Rüegg-Sturm J. (2015): Wirkung in komplexen sozialen Systemen. In: Impacts-Wirkungen 10/2015. Journal of the Institute for Systemic Management and Public Governance of the University of St. Gallen, CH. P.19.

⁵⁹ Elzen, B., Geels, F.W., Green, K. (ed.), 2004. System Innovation and the Transition to Sustainability. Theory, Evidence and Policy. Edward Elgar Publishing, Cheltenham, UK ; and European Commission, 2013: Guide to Social Innovation. DG Regional and Urban Policy, Bruxelles.

⁶⁰ Rabie, M., 2013. Global Economic and Cultural Transformation. The Making of World History. Palgrave Macmillan, New York; and Fang, G., Tian, L., Fu, M., Sun, M., 2014. Government control or low carbon lifestyle? – Analysis and application of a novel selective-constrained energy-saving and emission-reduction dynamic evolution system. Energy Policy 68, 498–507.

⁶¹ Barash, D.P., 2003. The Survival Game. Times Books, NY.

it is not enough to raise awareness, enhance knowledge and skills, it is about changing actors' strategies and routines at all levels of society, e.g. organisations, enterprises and institutions, inter-organisational cooperation systems, networks and governance arrangements, ultimately "the rules of the game" with which they seek to comply.

Interim conclusion 2

- Sustainable pathways into the future require a shift towards a carbon-neutral society and this alone calls for major structural changes in production, distribution and consumption patterns across all scales.
- Ongoing urban and rural transformation processes however point into the opposite direction.
- Urban and rural policy interventions fall short of the mark, at least partly because they act in policy silos and miss the interrelations at the regional level.
- There are governance initiatives promoting rural-urban partnerships in different types of regions (metropolitan areas, polycentric networks of cities and sparsely populated areas with market towns).
- Social innovation is considered to be the key driver of soci(et)al change, but there is no silver bullet to make it happen. It is acknowledged that setting positive stimuli (*nudging*) can be a good strategy, at least for incremental improvements.

Considering the fact that

- rural-urban partnerships can build on interactions along a supply chain;
- food is a complementary theme between rural and urban areas (the one provides the land for production, the other the people for mass consumption);
- the food cycle constitutes a substantial part of the matter and energy flows which actually impact on carbon and other harmful emissions, human health, animal welfare, livelihoods of households and communities;
- food is just everybody's concern⁶²,

We have reasons to believe that the food theme

- provides convincing cases for the necessary change of course towards more sustainable pathways;
- is so near to people's real concerns in everyday life that social innovation is particularly likely to emerge, to bring ripples effects across social groups and communities, and eventually cascade up to regional and larger scales, impacting on policy-makers and politicians such that they take more audacious steps towards sustainable governance.

⁶² Just consider the host of *food porn* sites in the internet.

3 Food sovereignty, local food systems and an attempt of systematizing

3.1 Our hypothesis: Striving for food sovereignty means striving for urban-rural integration

The term food sovereignty⁶³ asserts that the people who produce, distribute, and consume food should control the mechanisms and policies of food production and distribution, rather than the corporations and market institutions which have come to dominate the global food system⁶⁴:

*Food sovereignty is an agricultural, environmental, and rural development policy framework that made its first public appearance at the 1996 World Food Summit in Rome. The initial and most persistent proponent of food sovereignty is Via Campesina (or International Peasant Movement), an organization representing small farming organizations with members from 56 countries that began its preparations for the summit at an April 1996 meeting in Mexico.*⁶⁵

The call for food sovereignty is mainly about democratic control. It stands against the severe and growing concentration and monopolization of food production and distribution, accompanied by a disquieting loss of biodiversity (seeds, species), enormous losses in terms of food waste and unhealthy dietary habits, as set out in the previous section.

The civil society movements gathering at the International Forum for Food Sovereignty in Nyéléni, Mali, in 2007⁶⁶ have identified the following six criteria for food sovereignty:

- **Focus on food for people**
 - ➔ Putting people's need for food at the centre of policies
 - ➔ Insisting that food is more than just a commodity
- **Building knowledge and skills**
 - ➔ Building on traditional knowledge
 - ➔ Using research to support and pass this knowledge to future generations
 - ➔ Rejecting technologies that undermine or contaminate local food systems
- **Working with nature**
 - ➔ Optimizing the contributions of ecosystems
 - ➔ Improving resilience
- **Valuing food providers**
 - ➔ Supporting sustainable livelihoods
 - ➔ Respecting the work of all food providers
- **Localising food systems**
 - ➔ Reducing distance between food providers and consumers
 - ➔ Rejecting dumping and inappropriate food aid
 - ➔ Resisting dependency on remote and unaccountable corporations
- **Local control**
 - ➔ Recognizing the need to inhabit and to share territories
 - ➔ Rejects the privatization of natural resources

Although the food sovereignty movement sees itself as the driver of the process through local action, the concept includes proposals for political support:

⁶³ Documented in Wikipedia. https://en.wikipedia.org/wiki/Food_sovereignty

⁶⁴ Wittmann H., Desmarais A.A., Wiebe N. (2010): Food Sovereignty. Reconnecting Food, Nature and Community. Food First Books.

⁶⁵ Suppan S. (2008): Challenges for Food Sovereignty. IATP. http://www.iatp.org/files/451_2_102591.pdf

⁶⁶ Declaration of Nyéléni: <http://nyeleni.org/spip.php?article290>

The concept of food sovereignty proposes a vision of agriculture and economy that meets the goals of equity, food sovereignty, food security, sustainability and people's empowerment. Under this concept is a comprehensive list of policy reforms in agriculture and food that include

- *prioritization and promotion of domestic food production to achieve food self-sufficiency;*
- *regulation of domestic and international trade to ensure fair prices for small farmers, end dumping and curb the power of transnational corporations;*
- *implementation of genuine agrarian reform to distribute land and assets equitably to men and women farmers; and*
- *increased domestic support to small-scale farmers and poor peasants as well as to sustainable agriculture practices.*⁶⁷

We adapt the concept slightly and propose the following **six fundamental characteristics** of initiatives to promote interventions to support food sovereignty: they have to be regional, organic, community-led, independent, inclusive, and knowledge-oriented.



In the examples which follow (some of which have been put forward by the presenters during the Open Days workshop in Bruxelles), the six criteria are fulfilled to varying degrees, so that, if any of them are validated according to these criteria, a sort of spider web diagram could be crafted to exhibit its individual profile. In principle, particular types of initiatives could be categorized according to the shape of the diagram: for instance, farmers' markets would score high in the "community-led" and "regional" criteria, but possibly less so in "organic" (if the producers are not certified). The organic trade may score high in the respective criterion, but may follow a global exchange pattern which makes it score poorly in the "regional" criterion. Urban gardening may score high in the criteria "community-led" and "inclusive", but may score low in the "knowledge-oriented" criterion, and so on.

If we juxtapose these criteria with the above mentioned features of successful urban-rural partnerships (OECD 2013) and the criteria for rural-urban integration (Kegler e.a. 2014), there is a high degree of coincidence of factors. Building on this apparent coincidence we formulate the **central hypothesis of this discussion paper**:

⁶⁷ Gripo A. and Pascual F.G. Jr. (2005): Food Sovereignty Framework: Concept and Historical Context. P.23
<http://nyeleni.org/IMG/pdf/FoodSovereigntyFramework.pdf>

- *The higher the fulfilment rate in all the criteria enunciated for food sovereignty, the higher the contribution of an initiative or of a governance intervention to urban-rural integration.*

3.2 Examples of social innovation which bring ripple effects

3.2.1 From local initiatives to integrated strategies

Looking at the green leaves on life's golden tree, we find many initiatives which can be considered as steps or processes pointing towards food sovereignty, some of them vital in an environment which essentially works against such endeavour. Some of them are "trickling rivets" or "gurgling creeks" while others have grown into "mighty rivers" and "streams", depending on their history, spatial extension and size. It mostly starts with (a) individual initiatives (b) making ripples, being emulated by people nearby or elsewhere, morphing into clustered initiatives. If these initiatives interlace with enabling processes such as municipal services, public regulations, research and education, policy advisory and lobbying, they may reach the level or stage of (c) integrated strategies. Some initiatives start from the bottom-up, some from top-down or with substantial top-down⁶⁸ involvement from the very beginning; in the latter case, they mostly start as comprehensive packages and so directly start from the more complex position of integrated actions (stage, c).

a. Individual initiatives

These include⁶⁹

- Open-air markets, run by groups of farmers or local traders, sometimes specialising in organic food or other products
- Annual events such as local food festivals
- Farm shops or sales points, either on a single-farm basis or with products from many farms
- Co-operative shops, run by a group of farmers, with a wide range of products
- Box schemes, run by a single producer or with products from different farms, whereby consumers receive regular supplies of locally-produced seasonal food
- Specialist retailers selling more directly to consumers than via supermarkets
- Formally organised groups who offer catering services
- Urban gardening and agriculture⁷⁰
- Consumers as producers, e.g. on allotments or community gardens
- Community Supported Agriculture (CSA) where consumers share the risks and rewards of production
- Public procurement whereby schools and other institutions buy food supplies locally.

On the one hand, these initiatives grow in niches where specific consumer demands are not fully served by the existing offer of supermarket chains and local shops, and where there are dedicated few of producers whose farm/enterprise structure and skills allow them to create these niches. There is a lot of personal passion involved and voluntary work requiring team spirit; ethical commitment does play a role, although to various degrees but maybe less so in periodic farmers' markets, and more so in community garden keepers. Not uncommonly the ethically founded initiatives have their origins in social inclusion initiatives or are at least used as a vehicle to foster social inclusion and public health,

⁶⁸ With top-down we usually mean the governance level of cities or regions here.

⁶⁹ This list (all but one) is taken from the FAAN (Food and Alternative Agro-food Networks) research study (2010): Local Food Systems in Europe. Case Studies from five countries and what they imply for policy and practice. IFZ, Graz/AT. http://www.faanweb.eu/sites/faanweb.eu/files/FAAN_Booklet_PRINT.pdf. P.10. The lessons from the FAAN study have been presented by Sandra Karner during the Open Days Workshop.

⁷⁰ EU URBACT II (2012): Sustainable Food in Urban Communities. Developing low-carbon and resource-efficient urban food systems. Baseline Study. P. 17

until they acquire a degree of complexity which allows them to become viable businesses or ramify into other sectors (e.g. from farm-to-school⁷¹ to farm-to-community schemes):

Next to the Paris ring road, shielded from the din of the motorway by an apartment block, nestled between two high-rises, lies an oasis of peace. It is a community garden created by Multi'Colors, and is just one of the many 'urban sanctuaries' it has created in underprivileged neighbourhoods in and around the French capital.⁷²

The presence of agricultural and communal gardening initiatives in the very hearts of cities may blur our classical dichotomy of urban and rural spaces. But in the same way as a densely built village centre enclosing a spacious market place appears as a molecular grain of urbanity, we can locate these rural sprinkles and patches in urban areas crossing through the concrete canyons like life-giving mycelia. We must not forget that some 15% of the world food is produced in urban areas.⁷³ Social initiatives have not invented this. However, urban-based initiatives in this area have links with social and environmental well-being which otherwise have not been seen.

Local food initiatives perfectly blend in with the dominant industrialised food system, because their relative size and demand-supply relationship does not enter into competition with the large structures and players shaping the market. Regulations, particular those concerning food safety and trade, actually contribute to keep them small – *nolens volens* , so they remain 'below the radar' of heavy-handed control prescriptions and sanctions. The FAAN study is quite explicit on this⁷⁴:

EC food hygiene regulations have anticipated the most hazardous contexts of agri-industrial processes, in response to serious epidemics and food scares over the past two decades. Regulations impose more stringent criteria upon food of animal origin than upon food in general (EC 2004a, 2004b, 2004c). In order to comply with these regulations, small-scale enterprises face proportionately higher costs, relative to their size and income. EC law on food hygiene allows flexible interpretation – e.g. exemptions for primary products in direct sales, and lighter rules for traditional products – thus potentially facilitating LFS. However, member states have used only some of the flexible possibilities, according to an official report (CEC 2009b: 8). Indeed, such flexibility seems to be limited in scale and scope. Exemptions are narrowly defined, or remain ambiguous and thus in a 'grey' zone of legal uncertainty: these difficulties can deter or limit new entrants to LFS. For example in Austria, some LFS focus on vegetable products in order to bypass the more stringent requirements for meat products. In some places, there are lighter rules for individual vendors – but not for collective sales, thus disfavours LFS (e.g. in France). Meat hygiene rules have imposed a large financial burden irrespective of size, thus leading many slaughterhouses to close down (e.g. in England, Hungary and Poland): this decline forces longer-distance transport and so limits local capacity for direct sales.....

Trading rules impose proportionately higher costs upon small-scale operations than upon large ones. Costs arise from regulations related to tax, commerce, social insurance etc. Those different regulations often lack coherence. Each may have its own exemptions, whose criteria may vary even within the same country, with different definitions used by different agencies or regional authorities. The criteria may include distinctions between 'agricultural' and 'commercial' production, between 'primary' and 'processed' products, between 'sideline' and 'main' businesses; and definitions of what is meant by 'direct sales', 'box schemes' etc.

⁷¹ Vermont Agency of Agriculture (2014): Using Food Hubs to Create Sustainable FTS Programme.

http://agriculture.vermont.gov/sites/ag/files/FoodHubs_FTSProgram%20Guide.pdf

⁷² Faye S. (2015): Urban cultivation : Protecting nature in the city. OECD Observer No. 103, Nov.2015, p.58f.

⁷³ <http://foodtank.com/news/2015/07/urban-farms-and-gardens-are-feeding-cities-around-the-world>

⁷⁴ FAAN (2010): Local Food Systems in Europe. Case Studies from five countries and what they imply for policy and practice. IFZ, Graz/AT. http://www.faanweb.eu/sites/faanweb.eu/files/FAAN_Booklet_PRINT.pdf. P.38f.

b. Clustered initiatives

Successful individual initiatives may morph into clustered initiatives, by growth or by multiplication. They may become strong enough to become flagship enterprises of 'local food systems' (LFS)⁷⁵.

Figure 8 The Suma cooperative staff



The cooperative expert and adviser Bob Cannell presented a case study during the LDnet workshop in Bruxelles which falls into this category: *Suma Wholefoods*⁷⁶ (Figure 8) is a membership-based cooperative in the UK which emphasises democratic control of food supply chains. The main operations of Suma consist in cooperative distribution and building up consumer networks. Sumo, originally founded as a

wholesale workers' cooperative, also runs a three-story warehouse in Leeds. It has grown constantly over the years and has around 150 employees now.

*Unlike most UK companies, Suma operates a truly democratic system of management that isn't bound by the conventional notions of hierarchy that often hinder progress and stand in the way of fairness. While we do use an elected Management Committee to implement decisions and business plans, the decisions themselves are made at regular General Meetings with the consent of every cooperative member – there's no chief executive, no managing director and no company chairman. In practice, this means that our day-to-day work is carried out by self-managing teams of employees who are all paid the same wage, and who all enjoy an equal voice and an equal stake in the success of the business.*⁷⁷

In the Open Days workshop, Bob Cannell also presented the *Unicorn grocery*⁷⁸ in Manchester. Unicorn has become one of the largest and most successful wholefood outlets in the UK offering a huge range of affordable, wholesome food with a focus on organic, fair-trade and local sourcing. Ethical principles remain at the core of the business and influence not only what is sold but also how business is done. As a workers' cooperative, the shop is owned and managed by the people who work in it, and they have created a place where they want to shop themselves. Besides the principles of 'equal opportunity', 'wholesome healthy consumption', 'fair and sustainable trade' and 'solidarity in cooperation', Unicorn puts emphasis on 'secure employment' as a core value. Unicorn is aware of the 'limits of growth' which are imposed to a socially responsible economic initiative. Therefore, it does not want to expand but rather to encourage similar shop initiatives, for which it has created a 'Grow a Grocery' guide.⁷⁹

Some local food initiatives are commercially viable such as the aforementioned cooperatives, and some are not, but they are socially and politically important. Bob Cannell mentioned the social initiative *Incredible Edible* in Todmorden, UK. This initiative involves growing vegetables in urban niche spaces which can be plucked and used for free. The main interest of the initiative is to raise awareness, educate, create links and support other local food initiatives. Incredible Edible is 100% voluntary.

We are passionate people working together for a world where all share responsibility for the future wellbeing of our planet and ourselves. We aim to provide access to good local food for all, through

- *working together*

⁷⁵ O'Neill K. (2014): Localized food systems – what role does place play? In: Regional Studies, Regional Science, Vol. 1, Issue 1, 2014. Routledge.

⁷⁶ Suma started in Leeds as an individual initiative in 1975. <http://www.suma.coop/>

⁷⁷ <http://www.suma.coop/about/cooperation/>

⁷⁸ Unicorn was founded 1996 by a small group of people. <http://www.unicorn-grocery.coop/index.php>

⁷⁹ <http://www.unicorn-grocery.coop/grow-a-grocery.php>

- *learning – from field to classroom to kitchen*
- *supporting local business*

All with no paid staff, no buildings, no public funding; radical community building in action. Membership: If you eat you're in.⁸⁰

Figure 9 Food for free. Happy policemen having some spare time⁸¹



The primary interest of such initiatives is not to grow... but to create more of the same kind of initiatives. *Incredible Edible* has inspired “copycat” projects not only in the UK, but also in the US, Australia, Canada and Belgium. These initiatives gain strength by working together in national and global networks⁸².

The MAJOBO⁸³ initiative is “kneaded from the same dough”. The Norwegian grassroots network of local and organic food production and urban farming by citizens focuses on

spreading ideas, inspiration and information. The activities, which are centred in Oslo, include communicating through social media, pilot projects, documentary screenings and network meetings to showcase local initiatives as well as hands-on beginners’ courses with hundreds of participants. Through the network activities, MAJOBO has triggered a range of other food-related projects by showcasing possibilities and providing platforms where like-minded people meet. MAJOBO also acts as a voice for lobbying on behalf of urban agriculture to local and national political institutions.⁸⁴

c. Integrated strategy

When individual initiatives, flagship enterprises and organisations coincide with an enabling governance environment which sets incentives, customises its own agenda and the conditions in a way that allows for growth and propagation of seed initiatives and their insertion in the socio-economic fabric, we speak about integrated strategies which eventually develop into remarkably complex local food systems (LFS).

The Dutch adviser Marianne Karstens⁸⁵ has for some time been involved in supporting the Amersfoort (NL) food strategy. This was part of the URBACT II network on Sustainable Food in Urban Communities (Figure 10) and also provided a case study for the LDnet workshop at Open Days 2015. Amersfoort focused on food as part of a regional strategy, building up rural-urban links (*feed the city*) and local food chains as part of integrated solutions to social, economic, health and environmental issues.

⁸⁰ Self-description on the homepage of the initiative. <http://www.incredible-edible-todmorden.co.uk/home>

⁸¹ Bob Cannell (2015): New rural-urban links and alliances for a sustainable future. The actors’ and communities’ perspective. Presentation held during the LDnet workshop on Food Sovereignty and Urban-Rural Integration. Bruxelles, Oct. 13th, 2015.

⁸² <http://incredibleediblenetwork.org.uk/global-groups>

⁸³ MAJOBO means ‘food and soil where you live’. It is mentioned in: EU URBACT II (2012): Sustainable Food in Urban Communities. Developing low-carbon and resource-efficient urban food systems. Baseline Study. P. 71f.

⁸⁴ Jegou F. (ed.): Creating Space for Sustainable Food Systems in Urban Communities. Practical approaches and examples for cities. URBACT II Thematic Network on Sustainable Food and Urban Communities (2012-2015). Strategic Design Scenarios Publishing.

⁸⁵ Marianne Karstens (2015): Rural-urban integration through sustainable food systems. The territorial perspective. Presentation held during the LDnet workshop on Food Sovereignty and Urban-Rural Integration. Bruxelles, Oct. 13th, 2015.

Figure 10 The URBACT II publication on Sustainable Food in Urban Communities



The governance agenda and the food initiatives are not necessarily tuned to resonate. However, there are always elements in the city's agenda which can be used, connected to, nurtured and upgraded by bringing civil society, business and public administration together. Marianne Karstens who presented the case in the Open Days Workshop enunciated three avenues to facilitate the emergence of a local food system:

- Investigate each part of the municipal administration dealing directly or indirectly with food. Create occasions for them to meet, exchange on mutual concerns and possible synergies; cross-link policies and policy objectives;
- Make an inventory of all local initiatives, projects, activities, businesses, etc. involved or potentially interested, directly or indirectly in sustainable food; map them on the territory and provide them with opportunities to interact and exchange;
- Use identified strengths and weaknesses as themes for public action campaigns; build action focussed partnerships, e.g. to reduce food waste, or to support local farms and local markets.

Business, voluntary work and city action became interwoven to generate and interlink many projects. Three of them are mentioned below:

- 1) A City Wormery starting as a small scale pilot on tiger worm composting using organic waste of Amersfoort families and catering enterprises. Following a case study prepared by students the two worm 'masters' organized an expert meeting to receive feedback on their technical plans and marketing to start the pilot.
- 2) A Food Hall initiative for regional food connecting local stakeholders (farmers, logistics, social participation, restaurant and health catering) having started mid 2015 on the basis of a broadly accepted business plan. The food sold there comes from a perimeter of approximately 40 km.
- 3) Dedicated local food network partners are working to connect food production for the Amersfoort food bank with urban farming initiatives to develop a social enterprise in which responsible commercial scale fresh food can be produced with the help of food bank clients. This is for the food bank but also commercially for households and restaurants in the city.⁸⁶

⁸⁶ <http://www.sustainable-everyday-project.net/urbact-sustainable-food/2014/12/15/city-wormery-food-hall-and-urban-farming-for-food-banks/>

Figure 11 Fresh food for people in need (Amersfoort)

To be precise, 'integrated strategy' does not mean that the local food system is a social system made by design. Most of it is spawned from local initiative and cannot be predicted. People do plan, but not in the way we learn it at management schools. And the multitude of private plans usually ends up in a mess, but it is the messiness which makes it beautiful. The public intervention, however, must be planned, as there are public resources, the proverbial taxpayers' money, involved. The strategic perspective, which should be shared by the key actors in the different spheres of activity, emerges in the interaction between public planning, local enterprise and civil society activities⁸⁷. It takes some effort to repeatedly promote, post, affix and celebrate the core messages of the strategy. Moreover, the strategy should be transparent, adaptive and disputable; otherwise it loses its mobilizing power. The network itself should remain open, inviting others to participate, and inclusive. For the Amersfoort food system *everyone who eats* is a potential contributor and beneficiary.



Successful Local Food Systems are contagious: In the Netherlands, the Province of Gelderland is taking the lead in sensitising and advising local administrators from 56 municipalities on the core topics of local food systems: Food, social Innovation and governance. The ongoing exchange of knowledge and good practices aims at achieving integrated solutions in as many municipalities as possible. The upward cascade and regional cooperation between the local food systems is expected to strengthen short and medium range food supply chains beneficial to the local economy, tourism, landscape, employment and more...⁸⁸

The ten cities connected in the URBACT II network on Sustainable Food in Urban Communities⁸⁹ are continuing on this path even after the expiration of the URBACT II funding.

There are of course other LFS which grow outside that network. In Manchester⁹⁰ for instance, a cluster of organisations called the *Kindling Trust* is committed to rebuilding the local food economy. Rather than dealing with one aspect of a supply chain, they are trying to build a small-scale food supply system for the whole of Manchester. One of the organisations working with the Kindling Trust is the Manchester Veg People cooperative, supplying organic fresh produce across Greater Manchester. Both growers and buyers can join, and they ensure fair prices for growers. Part of the project is building up small farms. The long-term objective is to have four farm sites to qualify for CAP pillar I support⁹¹.

Against the supposition that local food systems can only grow where artisan and small-scale food production prevails, a study has shown that *industrial food spaces can co-exist with more local and artisan food spaces*⁹².

⁸⁷ The public authorities need a specific competence in what is called 'multi-rational management'. The town administration cannot dissolve itself into the movement in the same ways as the movement cannot be institutionalized. The strategy has to be 'ambidextrous', keeping the two logics apart and at the same time making the best out of their interlacement. It's no exaggeration to state that multi-rational management is the core competence of the 21st century, if we really want to achieve sustainable transformation.

⁸⁸ Marianne Karstens (2015): Rural-urban integration through sustainable food systems. The territorial perspective. Presentation held during the LDnet workshop on Food Sovereignty and Urban-Rural Integration. Bruxelles, Oct. 13th, 2015.

⁸⁹ Brussels/BE (lead partner), Amersfoort/NL, Athens/EL, Bristol/UK, Gothenburg/SE, Lyon/FR, Messina/IT, Oslo/NO, Ourense/ES, Vaslui/RO.

⁹⁰ ARC2020, FoE, IFOAM (2015) : Transitioning towards Agroecology. Using the CAP to build new food systems. P.8f.

⁹¹ www.vegpeople.org.uk

⁹² O'Neill K. (2014): Localized food systems – what role does place play? In: Regional Studies, Regional Science, Vol. 1, Issue 1, 2014. Routledge.

In fact, food sovereignty is not connected to any form or scale of production. It is linked to the notion that food production should be organized in a way that produces the least negative externalities, and this notion comes close to the ideal type of the Thünen resource cycles.

Figure 12 Sketch of the Thünen resource cycles, drawn in the nineteen twenties for education purposes⁹³



Heinrich von Thünen's (1783-1850) pioneering achievements include the development of theories on agricultural and forestry production, location and spatial structures (Thünen's *Resource Cycles*) which generated ideas in economic geography and regional science.

The original idea was to organize production around human settlements in order to combine full supply with minimal transportation cost and resource input. The radial supply system sketched in the historical picture

(Figure 12 starts with the innermost cycle called 'free economy' meaning small scale short distance supply with milk, vegetables, fruits etc.; then comes a ring of forestry (we could interpret this as a means to raise the recreational value of the landscape, but it is probably rather owed to the relatively higher transportation cost of wood in the early 19th century). Next comes the agricultural zone (which Thünen calls 'crop rotation economy'), followed by pastures and a zone with more extensive agriculture and livestock breeding. The outermost ring is dedicated to animal husbandry.

Scaled up to the European and global level, the food sovereignty approach includes large scale industrial agriculture, in accordance with the geographical conditions, population density, distance to markets, mechanization potential etc. Conditions will vary across countries and regions - in the large plains of the Ukrainian Donetsk basin things will look different from the Swiss Alps or Andalusia, Karelia, the Scottish Highlands in the Banat.

3.2.2 Scaling up to full-fledged local and regional food systems

Local initiatives clustering together, inter-connecting with public incentives and strategies, reaching out and networking, creating ripple effects and inspiring copycat initiatives, eventually assembling into regional clusters: The issue of ownership and democratic control is expected to remain intact all along the scales: Large scale buy-out of land and land grabbing works against food sovereignty and should be prevented.⁹⁴

⁹³ Website of the Thünen Institute, the most important agricultural and rural research institute in Germany.

<https://www.ti.bund.de/en/about-us/johann-heinrich-von-thuenen/>

⁹⁴ Shephard D. (2011): Land Grabbing and Potential Implications for World Food Security. In: M. Behnassi et al. (eds.): Sustainable Agricultural Development. Springer Science and Business Media. Ps. 25-42.

<file:///C:/Users/user/Downloads/9789400705180-c2.pdf>

Recalling that OECD countries spend an average of 12% of GDP on public procurement, and developing countries only slightly less, Olivier de Schutter, the United Nations' Special Rapporteur on the Right to Food, identified five principles for using public procurement to support the realization of the right to food:

- *Source preferentially from small-scale food producers and help them to access tenders*
- *Guarantee living wages and fair prices along the food supply chain*
- *Set specific requirements for adequate food diets*
- *Source locally whenever possible and impose sustainability requirements on suppliers; and*
- *Increase participation and accountability in the food system⁹⁵.*

Innovation starts from bottom-up, eventually cascading upward and building on the contextual changes on lower scales, but supported and enabled by solution-seeking policy makers from the higher level. This support will to a much lesser extent consist in active promotion, but rather in removing barriers and hindrances (unfair competition and regulatory fetters).

Local and Regional Food Policy Councils have become springboards for developing local and regional food systems. These partnership-like structures involving civil society, business and public administration have spread all over North America and have taken root in Europe as well, e.g. with the Bristol Food Policy Council.⁹⁶

⁹⁵ Cited from the website of Marion Nestle on food politics. <http://www.foodpolitics.com/2014/05/olivier-de-schutter-finishes-tenure-as-un-special-rapporteur-on-the-right-to-food/>

⁹⁶ <http://bristolfoodpolicycouncil.org/> Bristol is also part of the URBACT II network on Sustainable Food Systems in Urban Communities.

Figure 13 Food Policy Councils – hubs for building up and sustaining Local Food Systems



Starting more than 30 years ago, some academic experts and food activists began to see that the food system was touching more and more parts of our lives. Environmental issues, public health, issues of social and economic justice, and other concerns were all tied up with this mammoth system, one with huge economic importance....

Food experts and activists realized that a vast food system generated many policies, and for the most part, the average citizen didn't have much of a role in shaping them. One way to address this lack of participation was by creating food policy councils, to bring together all stakeholders in a community food system and give them a say in constructing a system that reflected their values.

It all started with Professor Robert Wilson and a handful of his students at the University of Tennessee Graduate School of Planning. In 1977, Wilson and his team studied how well the city of Knoxville provided affordable, nutritious food to all its residents. The answer: not well at all. The city was losing farmland, diet-related disease was on the rise, and hunger was spreading among lower-income residents. City residents working on food insecurity saw the report's connections to its efforts and convened a team of community leaders to convince the city government to create the Knoxville Food Policy Council (FPC) in 1982. Although it lacked regulatory power, the council's work led to such achievements as free or low-cost breakfasts for low income students and the expansion of public transit to accommodate improved access to grocery stores.

Renamed the Knoxville-Knox County FPC in 2002, to reflect an increased geographic scope, the council is still going strong, stressing the importance of locally grown food for the region's economy. Today's food policy councils come in different sizes and sometimes address different issues. But at heart they reflect the idea of food democracy - a term coined by Professor Tim Lang during the 1990s.

To him, food democracy means "the long process of striving for improvements in food for all not the few." Achieving that goal means bringing the bulk of society to work together to ensure there's enough affordable, easily accessible, and nutritious food for everyone. That concept is sometimes called food security, and Lang also linked it to economic and social justice for the people who raise, process, distribute, and sell our food.

It might seem like a daunting task, challenging the interests that support the food system status quo. And promoting concepts such as food democracy and social justice might feel like a hard sell in your community. But at its core, the work of a food policy council addresses something basic, something we can all relate to - our need for food that nourishes us.⁹⁷

4 Tracking down the mechanisms furthering local food systems

Real life experiences with local food systems show that regional food sourcing has huge potential to reshape food geography. Certainly contingent on soil and climate conditions, the vegetal cover and agri-system structures, we can estimate a 30 to 50% potential of food sourcing in the wider region, say within a perimeter of 300 km for European conditions. This is considerably narrower than the official standards defined for the US.⁹⁸

In the US, however, the public discourse on local food systems seems to be much more developed than in most European countries. Heifer International publishes an annual ranking of the so-called *Locavore Index* indicating how much the US States commit themselves to local food systems development. The 2015 ranking sees Vermont in first place (and the Northeastern and Northwestern States in the forefront in general) and Texas in the last⁹⁹ (with the Southern States in the lower ranks in general).

The undisclosed report on *Food in an Urbanised World*¹⁰⁰ of the International Sustainability Unit (ISU) recommends **ten actions** that will help make city region food systems a reality, and which will most probably generate the positive outcomes that the approach can bring:

1. **Recognising the ability to act:** City and rural authorities should explicitly recognise the links between food systems and a wide set of public goods, and assert their ability to facilitate positive change.
2. **Convening stakeholders:** Local authorities and civil society organisations can play a pivotal role in bringing together wide coalitions of interests to create the basis for stakeholder engagement and support in future food policies and programmes.
3. **Understanding local food systems:** City region food policies must come from a position of knowledge concerning the local food system context, including where food comes from ('foodprinting') and what the outcomes of the food system are for both urban and rural populations. CSOs, local authorities and the research community have a role in generating this knowledge and making it publicly accessible.
4. **City region policy:** Policy and research communities, and development agencies, should actively support the creation of city region food policies, including land use and planning frameworks that enable multi-sector, territory-based approaches.
5. **Enabling policy:** National governments, international institutions and donor organisations all have a role in ensuring that their policies promote city region food systems and remove blockages.

⁹⁷ Burgan M. And Winne M. (2012): Doing Food Policy Councils Right: A Guide to Development and Action.

<http://www.markwinne.com/wp-content/uploads/2012/09/FPC-manual.pdf> P. 2f.

⁹⁸ The USDA defines „local/regional food“ as food which is transported less than 400 miles (640 km) from its origin to the consumer. Steve Martinez, Michael Hand, Michelle Da Pra, Susan Pollack, Katherine Ralston, Travis Smith, Stephen Vogel, Shellye Clark, Luanne Lohr, Sarah Low, and Constance Newman: Local Food Systems: Concepts, Impacts, and Issues. May 2010, ERS (Economic Research Service) Report Summary, U.S. Department of Agriculture. However, the US based locavore movement stipulates a lower threshold, that of 100 miles (160 km) which comes closer to the 300km set in this discussion paper. See Wikipedia on local food: https://en.wikipedia.org/wiki/Local_food

⁹⁹ <http://www.strollingoftheheifers.com/locavoreindex/>

¹⁰⁰ Nevertheless accessible in the web:

http://www.fao.org/fileadmin/templates/FCIT/documents/Food_in_an_Urbanised_World_Report_DRAFT_February_2015.pdf

6. **Academic research:** The research community should coordinate in order to more effectively contribute to knowledge resources in support of city region food systems, including: organised and high level knowledge exchange, case studies, developing metrics and rigorous testing of outcomes.

7. **Procurement:** City and rural authorities can catalyse city region food system value chains through public procurement policies: e.g., incentives for meals for schools, prisons and hospitals to come from sustainable producers in the city region.

8. **Enterprise and innovation:** Local authorities and development agencies should create incentives for and support the development of new enterprises that link consumers and producers. Existing enterprises should invest in social and technical innovations to facilitate these connections.

9. **Infrastructure and support:** Local authorities and development agencies will need to invest in infrastructure such as market places and rural roads, as well as extension services for farmers to enable a greater diversity of viable city region value chains.

10. **Financing:** Development agencies, governments and the investment and philanthropic communities should develop financing mechanisms that can leverage improvements in public goods and long term value to provide immediate support for city region food systems. Examples might include municipal bonds, mechanisms for social investment and the capacity to implement these.

We can see that our **six fundamental characteristics of food sovereignty** set out in chapter 3.1 (regional, organic, community-led, independent, inclusive and knowledge-oriented) perfectly align to these ten actions. Unraveling the mechanisms at work we inevitably identify three operational principles for resilience strategies repeatedly addressed in the recent literature on resilience¹⁰¹:

1) **Diversity:** Diversity means dissimilarity of elements in a given system. In times of global change it has become a fashionable term, most sumptuously employed in public and corporate communications. Diversity management has become a new discipline. However, the principle behind its widespread use is all but a trivial one. It is the counter term to unifying, standardizing, homogenizing and monopolizing. We must admit that not only accepting, but fostering and managing diversity. is a rational response to the complexity of social systems and the requirements of sustainable development. However, it is also, to a certain extent, antagonistic to the principles of efficiency and productivity: at least in the short term and short term gains are what matters most in public decision making and shareholder-driven business. Upholding the principle of diversity means:

- to reconcile and to orchestrate the different logics of civil society, business and public action;
- to customize local food initiatives, producer-consumer networks and integrated food systems to the local and regional specificities;
- to keep the public discourse running which may involve clashes between divergent opinions, vested vs. communal interests, without entrenching the initiative at the margins of local politics or making bogeymen out of the more sceptical actors;
- to foster the emergence of new ideas which means giving leeway to new developments which put in question valid rules;
- to blend market-driven economic initiatives with social entrepreneurship and inclusion projects without jeopardizing the specific added value associated with each of them.

There is a risk in unleashed diversity also in the long run. It tends to undermine coherence, leads to inefficiency, disintegration and loss of identity.

¹⁰¹ Lukesch R.: Resiliente Regionen. Zur Intelligenz regionaler Handlungssysteme. In Wink R. e.a. (2016): Multidisziplinäre Perspektiven der Resilienzforschung. Springer Verlag.

- 2) **Modularity:** Modularity provides the context to let diversity unfold its virtues. Modularity means coherence in systems whose parts are highly independent from each other. The term is often used in the context of technology, where it is equivalent to low cost of repair, because spare parts can be easily exchanged and they do not even have to be from the same source as the original. It is also used in IT to designate robust software whose local bugs cannot proliferate throughout the whole system, paralyzing it altogether. Modular software keeps the chunks sufficiently separated so that they can be rewritten without having to scrap the whole script. Modularity in social systems features loosely connected clusters of strongly connected groups; the mixture of strong and weak ties in networks is known in mathematics and system sciences under the name of *small worlds*. Small worlds are typical for dynamic, innovative and versatile systems. Small world networks prevail in any self-organising systems, from the level of cells to organisms, biocenoses up to socio-cultural systems. The salient feature of small worlds is that they combine complex structuring with relatively short distance from one node to another.¹⁰²

In 1967, American sociologist Stanley Milgram devised a ... way to test ... a theory (originally devised by the Hungarian writer Frigyes Karinthy in 1929) , which he called 'the small-world problem'. He randomly selected people in the mid-West to send packages to a stranger located in Massachusetts. The senders knew the recipient's name, occupation, and general location. They were instructed to send the package to a person they knew on a first-name basis who they thought was most likely, out of all their friends, to know the target personally. That person would do the same, and so on, until the package was personally delivered to its target recipient. Although the participants expected the chain to include at least a hundred intermediaries, it only took (on average) between five and seven intermediaries to get each package delivered. Milgram's findings were published in Psychology Today and inspired the phrase 'six degrees of separation'.¹⁰³

Upholding the principle of modularity means

- Embedding an initiative or business into the local, regional and social environment with whom ties are maintained assuring communication and interaction at any required moment;
- Instead of outgrowing its adequate size and volume, the initiatives reproduce themselves, creating copycats in the neighbourhoods but also far away, maintaining ties to assure learning and joining forces in case of need (for instance to serve a regional market or to articulate a policy demand);
- What holds for single initiatives also holds for integrated local and regional food systems;
- Balancing out different modes of action, language and organizing principles floating in the wider system, so that none can squeeze out the others; hierarchy and heterarchy are intertwined and combined in the interplay of public institutions, civil society, business and people2people.¹⁰⁴

- 3) **Reflexivity:** Reflexivity is the only principle among the three which is genuinely human. We humans are able to *establish a proper world beside the other one* in our thoughts.¹⁰⁵ We are able to connect the remembered past to the imagined future, and both with our presence. We can emulate the

¹⁰² http://www.scholarpedia.org/article/Small-world_network

¹⁰³ <http://whatis.techtarget.com/definition/six-degrees-of-separation>

¹⁰⁴ For the organisational and managerial concepts behind this see: Fairtlough G. (2007): The Three Ways of Getting Things Done: Hierarchy, Heterarchy and Responsible Autonomy in Organisations. Triarchy Press; and Laloux F. (2014): Reinventing Organisations. Nelson Parker.

¹⁰⁵ According to Friedrich Nietzsche: *The meaning of language for the emergence of culture consists in the fact that humans have established a proper world beside the other one, a vantage point which they deemed so firm as to be able to unhinge the other world and to elevate themselves to its rulers.* Heller, P. (1972): *Von den ersten und letzten Dingen*, Berlin. I, p. 453 (Translation into English by the author of this paper).

feelings of others by making use of our mirror neurons; although we share this ability with some of our fellow creatures, we are the only ones who can talk about this with each other. And yet, this ability is blatantly underused when it comes to achieving collective goals and pursuing common well-being. It was Immanuel Kant who reminded us of the ancient Roman poet's Horatius proverb *Sapere aude: Dare to make use of your own understanding!* Published 1784, this sentence became the leading slogan of enlightenment. Reflexivity means the purposeful use of reason in a civilized dialogue accompanying our transformative actions.

Upholding the principle of reflexivity means

- When starting an innovative action, make explicit on which assumptions you act (a theory of change disclosed as a results framework);
- Accompany any innovative actions with appropriate means of monitoring or observation;
- Reserve space for strategic reflection among stakeholders, activists and authorities;
- Use different forms of observation, reflection and dialogue within and across scales, within and across groups of stakeholders;
- Be transparent before others ask for you to be transparent;
- Establish short feedback cycles to get early notice about changing conditions;
- Include external expertise through periodic evaluations which look on the whole results framework;
- Become an expert in the **art of cooperation**: Be **hopeful** when you make the first move (that the others will be co-operative as well); be **generous** if you respond to someone who gives you an advance of trust; and be **forgiving** if the other one does not co-operate, at least once or twice, for it could occur by misunderstanding.¹⁰⁶

5 Conclusions and recommendations

5.1 *It's time*

Here we stand: Accelerated urbanisation and agglomeration, unleashed world trade in seed, food and related commodities, enormous food waste and globalised risks, from contamination to price volatility, growing gaps between the food business and nutrition as a basic need. Famines may have been mitigated by global risk management, but the number of people suffering hunger and malnutrition remains at least stable, while the nutritional resources, biodiversity, variety of seeds and breeds, soil fertility, water supply and the integrity of agri-systems are waning at breath taking speed. Let us not forget that the food sector accounts for around 30 per cent of the world's total energy consumption and accounts for around 22 per cent of total Greenhouse Gas emissions.¹⁰⁷

This grim anamnesis cannot be met with one grandiose panacea: we need myriads of responses which eventually accumulate to something like sustainable pathways, for humanity as a whole, the generations to follow and the entire web of life on earth.

¹⁰⁶ These are not just philanthropic advices; the three features are direct results from computerised game theory experiments. See: Nowak, Martin A. (2008). Generosity: A winner's advice. Nature 456: 579.

¹⁰⁷ <http://www.un.org/sustainabledevelopment/sustainable-consumption-production/>

Figure 14 Emerging bulb¹⁰⁸



The solutions will be incremental on the local scale, but building up to generate disruptive shifts on larger scales (see the metaphorical Figure 14. Figure 14 Local initiatives may evolve to excellence in their place, but they would change nothing on larger scales if they got stuck on their local peak of excellence in a static fitness landscape. Corollary governance action, rather promoting than protecting, but certainly protecting in terms of quality requirements (organic standards and taxation according to carbon footprint would be a good start), should ensure that global players

cannot overrun local initiatives, until, mañana, they disappear for lack of relevance. Local food systems will have to shape the dynamic fitness landscape in which they thrive¹⁰⁹.

Local food systems figure prominently among the answers we need. They do not replace the globalised systems, but they do have the potential to smooth things over and put things in balance over time.

5.2 Goals

The food agenda came into focus long before the financial and economic crisis of 2008, but it has gained momentum as the income disparities keep growing instead of narrowing, and the foundations of the welfare state are creaking and squealing as public indebtedness rises. Local governments are mostly pinched for money, have limited clout on land management and often lack the foresight capacity to lead long-term strategies on sustainable production and trade systems.

Nevertheless, and tired of waiting for top-down solutions, new local partnerships involving social-public-economic sectors and civil society have developed including community kitchens; using food waste to feed vulnerable populations; re-connecting the city with rural areas to develop food supply.

Yes, we know that alternative approaches gain popularity when mainstream solutions don't work anymore. However, it would however be futile to wait for the next crisis to make the next leap forward, and we cannot afford to see our local food systems waning in the face of booming world trade and absurdly cheap crude oil.

- **Let us assert: At least 30 to 50% of our food should come from within a perimeter of 300 km,** according to diverse conditions in different parts of Europe. Considering that 500 mio. farms are still producing 80% of the world's food we can be very optimistic about the feasibility of this goal. Pursuing and achieving this goal would greatly impact on nearly all of the 17 UN Sustainable Development Goals set 2015 for the time span until 2030¹¹⁰.

We are facing new developments which point in that direction. The experiences of thousands of local food initiatives and local policy approaches should be widely communicated, inspiring imitators, emulators and innovators in urban, peri-urban and rural areas. The initiatives should eventually create synapses with other local initiatives and create a pulsating, nourishing mycelium, an educational seedbed for our future sustainable lifestyles.¹¹¹

¹⁰⁸ Source: http://schedule.sxsw.com/2015/2015/events/event_IAP36631

¹⁰⁹ https://en.wikipedia.org/wiki/Fitness_landscape

¹¹⁰ <https://sustainabledevelopment.un.org/topics/sustainabledevelopmentgoals>

¹¹¹ Most issues mentioned under the following two bullet points are emanating from the Open Days 2015 Workshop.

- **There are many imaginable ways of upscaling, to make sure that local and regional food systems become the default mode of food production, distribution and consumption.** Upscaling does not need to consist in growth and expansion. Certainly, any local consumer/producer initiatives may grow out into a business conglomerate, eventually becoming the prey of megalomania and incompetence. Instead, sustainable upscaling rather means multiplication, emulation, but it can also mean making existing models viable and becoming hubs of knowledge transfer. It can involve connecting to the mainstream to shorten food supply chains and increase the proportion of local food in supermarkets.
- **To consolidate the innovative practices on larger scales (city-regions), we see the regulatory framework as an area for action.** The most valuable resource in city-region management is land, available land:
 - ✓ A minimum percentage of food growing space should be specified (just like they are doing with car parking);
 - ✓ community-owned land should be legalised and secured for nutritional purpose;
 - ✓ citizens should be made guardians of land surrounding large cities defending them against property speculation;
 - ✓ the power of monopolies should be reduced; hypermarkets should be banned where the local markets are already well supplied;
 - ✓ there should be positive discrimination in favour of local and regional small production, first and foremost in public and community procurement.
- **Initiatives that should be supported by public programmes** include
 - ✓ promoting direct sales from the farm and farmers' box or basket schemes;
 - ✓ farmers' markets with support from local self-government and not commercial firms;
 - ✓ organic local supply chains with high employment effects in small-to-medium business structures;
 - ✓ producer-consumer cooperatives;
 - ✓ community-run agriculture and gardening etc.

To become economically viable in the longer run, local initiatives should eventually integrate higher value-added segments, such as bakeries, preserves, catering, or engage in social franchising food initiatives with public support to codify the model to be franchised.

Concerning the normative and legislative context, we are facing an appalling inability or lack of will of governments to turn things around. We have witnessed how the latest attempt to step up the environmental standards of European agricultural subsidies, undertaken by the brave Commissioner Dacian Cioloş in the run up of the CAP2020, has been intercepted by the constant and incessant interventions of agri-business and farmers' lobbies, seconded by national governments, and how they underpinned their indefatigable endeavour with arguments which actually sounded like common sense. One of the reasons may be complexity. Genuine policy shifts must be focused, swift, communicable and easy to understand. The main thrust would go towards the removal of unsustainable subsidies.

- ✓ At **European level**, subsidies from the CAP should be tied to organic standards as the basic cross compliance requirement from 2021 on. Today slightly more than 5% of European farms are organic. This slight twist of legal text would guarantee that organic agriculture becomes the default mode of European agriculture within 10 years' time. Conventional farms will persist on larger scales, but they will not be subsidised with taxpayers' money any more.
- ✓ At **national level**, the gradual conversion of VAT into carbon taxation would largely mitigate the market bias through unfair competition through internalising a good deal of negative externalities such as transportation cost of animal feeds from Latin America to European barns. It could also make it harder to feign localised production by pretending that industrial

glasshouse mass production of vegetables all year round, based on heavy inputs of energy and chemical substances, be part of the solution.

- ✓ Furthermore, any incentives to maintain unsustainable solutions in housing including home ownership promotion, mobility (e.g. commuters' allowances) should be removed or at least converted into support for sustainable solutions (e.g. support for home ownership according to strict energy and resource use standards, as well as spatial planning conditions).
- ✓ At **regional level**, public support for business settlements, housing, mobility systems etc. should follow similar rules. Regions should account for steady progress concerning climate protection, facing sanctions if they do not act accordingly in their spatial planning and regional development interventions.
- ✓ **Cities and municipalities** are key partners in local food systems. Their role is to enable, to motivate, to encourage, to remove obstacles and to help making people, businesses and communities aware of the importance of local food systems. The local and sub-regional level is the most prolific entry point for citizens' participation. Therefore, the strong and enduring involvement of citizens, e.g. in local food policy councils, will be the essential cornerstone of urban-rural integration and food sovereignty. Democratic governance of producers, consumers, and distributors of local food should be assured, promoting cross-sectoral local and regional cooperation along value chains and across sectors.

Education and awareness-raising are the gemstones of sustainable development. Starting with children in schools, the many aspects of food (from seedbed to kitchen) should become a fixed star in the educational canon and the intergenerational transfer of cultural techniques: just like reading, writing, music and arts. In many parts of the world, also in Europe, people still know about the values and virtues of locally produced food and culinary practice, in all its variety and opulence. Let us build on that fantastic heritage, together and out of the pure pleasure of life.