

COLLABORATIVE LOGISTICS INITIATIVE FOR SCALING UP IMPACT OF LOCAL FOOD SYSTEMS

IGPM COMPANY & POLISH ENVIRONMENTAL PARTNERSHIP FOUNDATION (PEPF)

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We are looking for an investment partner or partners, who can contribute to the development of the project through provision of expert advice and financing - to add to and build on what has already been invested.

Collaborative logistics for local food systems – a definition:

Collaborative logistics refers to a system of transactions based on the self-organising potential of the actors co-creating the system (ie. producers, buyers, people owning/running transportation and/or storage facilities/equipment) operating within a defined [geographic] territory. Logistics needs are satisfied in an adaptive, ongoing and interactive way through a self-organising process of combining, coordinating and optimising costs of the transport and storage available from the actors in the system. There is no prescription or planning. In Collaborative Logistics growth occurs and is optimised without the need for any individual or organisation to be 'in charge'. It is a self-organising system, which is not prescribed. It does require building a collaborative capacity among participating actors and IT-solutions that support and enable transactions and interaction.

THE LOGISTICS CHALLENGE

Organizing direct, sustained and personal connections between small or part-time food producers and consumers are often presented as opportunities for diversifying agricultural production and reconfiguring food processing and food distribution into more sustainable forms. The systems solutions now being developed across Europe and other parts of the world in this regard are referred to as **SHORT-FOOD CHAIN SYSTEMS (SFCS)**. SFC initiatives come in many varieties, but they have yet to fulfil their promise of achieving an economic, social and environmental impact that can challenge the industrial food model that dominates.

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Logistics – the physical storage, transport and distribution of food – has been diagnosed as a key barrier to increasing the share of food produced by small farmers and food producers in the marketplace. The logistics challenge arises because smallholder farmers and food producers as well as (mostly) urban consumers are geographically dispersed and delivery becomes costly and restricts scale. The logistics challenge is especially important in situations where there are many, geographically-dispersed small or part-time farmers wanting to connect directly to many (mostly urban) consumers and vice-versa.³ This is the case in Poland with its 1.4 mln small farms, for example.

The practical significance of solving the logistics challenge has been confirmed in efforts to scale-up impact of an SFC operating in Poland called the **LOCAL PRODUCTS FROM MALOPOLSKA (LPM)** – www.local-food.pl - which was initiated by the Polish Environmental Partnership Foundation (PEPF). The LPM system now engages 150+ producers and 1500+ consumers through Buyers' Clubs, a Food Centre and Farmers' Markets, with an aspiration to exploit the potential of connecting 130,000+ small/part-time farms of the Malopolska region to (mostly urban) consumers in Krakow.

Whereas logistics has been recognised as perhaps the key barrier to an SFC achieving scale, there has been insufficient attention paid to the different ways of combining 2 key parameters of critical importance: 1) efficiency or optimising transport and storage from geographically dispersed producers to geographically dispersed consumers. New IT and digital platforms can now be deployed in this regard; 2) control or power, which is above all a matter of equity, ethics and politics - who decides, on what basis, with what purpose and in whose interest. New partnership and partnership brokering technology can be deployed in this regard, offering new forms of co-creation, inclusive innovation, self-organization and co-ownership. Collaborative logistics refers to the different ways of configuring these two parameters in a specific SFC situation.

COLLABORATIVE LOGISTICS offers possible solutions. These seek (1) to identify, upgrade and exploit unused logistical resources (vehicles, storage, travel routes) available from among those participating in or internal to an SFC – technological dimension, while at the same time (2) making usable logistics resources by building collaboration between producers between producers and consumers to grow a social capital or integrity through personalised many-to-many relationships. This builds trust, assures authenticity, responds to needs, problem-solves – human dimension.

‘Decentralising’ collaborative logistics should be contrasted with the ‘centralising’ industrialised logistics (large trucks and logistic centres) drives pressure for increasing farm size to achieve standardisation, scale and efficiency. The result is that small farms and small food processors are eliminated and food miles increase dramatically. Industrialised food production is exactly what more and more consumers do not want.

³See Report of the EIP-Agri focus group on Innovative Management of Short-Food Chain Systems, https://ec.europa.eu/eip/agriculture/sites/agri-eip/files/eipagri_factsheet_short_food_supply_chain_management_2015_en.pdf

THE INITIATIVE

We seek an alternative to these processes, which impose centrally managed top-down logistic services, require significant investment in infrastructure and demand ever more effective centralised command-and-control systems.

We propose a reversed approach to logistics built locally, bottom-up on networking existing logistical resources: vehicles, storage, travel routes which serve local food markets through **Short Food [Supply] Chain (SFC)** systems. SFC's seek to compete in the marketplace by limiting the number of intermediaries between producer and consumer or to eliminate them altogether in order to shorten both the 'social' and 'geographical' distance from field to fork. . The scaling challenge for SFCs is twofold (1) how to deliver directly from many to many and (2) how to substitute functions of intermediaries with more cost-effective and efficient technological solutions.

Our proposed Collaborative Logistics solution offers a solution to the SFC scaling challenge It is designed to fill a functional gap identified during a pilot implementation of an SFC developed in the Malopolska region of Poland called the Local Product from Malopolska - PLM⁴. This involved developing and testing software solutions - ACS[®] and PLM[®] - for connecting food producers and consumers in buyers' clubs and restaurants. The PLM system with producers and consumers carrying out transactions played the role of a 'Living-Lab' for field-testing solutions and will be critical in the field testing of the Collaborative Logistics concept.⁵

Our Collaborative Logistics solution is to nurture networks built on social, economic and environmental resources already existing within local markets. The key is to make them available and configured to carry out the intermediary functions required to connect producers and consumers and also to realise sharing economy gains. Our innovation is based on putting together and deploying a mix of already existing digital technologies and applying them to solve the SFC scaling challenge.

Our motivation and objective is to enable an emergent, self-organising logistics system for food networks that engages geographically dispersed producers and consumers. As a networking solution, it must be, by definition collaborative, interactive and adaptive – with no single person or entity 'in charge'. In this way, it generates a disruptive alternative to the centralised command-and-control solutions that dominate today.

Our goal for this initiative is to create an IT-enabled self-organising Collaborative Logistics p-2-p network, involving producers and consumers who are already part of a short-food-chain supply system. We want to enhance the way they collaborate with one another to make more effective use of existing logistic resources. In this way, the need for new upfront investment in logistics infrastructure is minimised and sharing-economy gains materialise.

⁴ Local Products from Malopolska is a short-food chain system developed to connect approx. 130 food producers to approx. 5000 urban consumers in the Malopolska Region of south Poland with financial support from the Swiss-Polish Cooperation Programme in the years 2011-2017. More: www.produktlokalny.pl and www.local-food.pl

⁵ Our IT-enabled Bistro and Buyers' Club solutions are described in detail at <https://prostoodrolnika.pl/eng/>

Our solution involves putting together a mix of block-chain (distributed ledger) and conventional applications and code a set of smart contracts that will enable a completely new type of logistics system. The basis for this new approach is to make use of the existing storage and transport assets, which are in the hands of an emergent network of geographically-dispersed producers and consumers. By allowing for direct transactions among network participants and food tracking, there is no need for centralised control or management (contrary to what we see today in business models of e.g. Uber). In fact, as in emerging systems, it is important that no-one is ‘in charge’ or allowed to ‘take charge’

The initiative draws on existing relationships with the Polish Environmental Partnerships Foundation, the Polish Innovation Foundation and the Life Sciences and Environment University of Wrocław, to ensure appropriate levels of monitoring and (impact) evaluation as well as documentation of current best practices in relation to the governance and management of sharing, social and solidarity economy business models.

NEEDS AND WIDER IMPLICATIONS

With growing global consensus on prioritising the Sustainable Development Goals and the need for better climate mitigation and adaptation strategies, there is also a growing recognition that new, less damaging and more equitable business models are needed. These must reduce destabilising poverty and inequality as a basis for delivering prosperity and peace for current and future generations. Assuring equitable access to food and water that does not degrade our environmental life support systems is key. Disturbing evidence of deteriorating social, economic and environmental conditions for more and more people across the globe suggest that achieving sustainability requires solutions based on systems or joined-up thinking rather than on the silo or sectoral thinking that has dominated to date.

A key need and opportunity relates to redesigning our food systems through purposeful deployment of available technology, systems know-how and sharing economy solutions to provide more widespread access to fresh, healthy and nutritious food in ways that do not destroy the environment or local communities. A more sustainable food system is one that is based on locally produced food that is locally consumed. The 500 million smallholder farmers who produce most of the food on our planet, should thus be seen as a foundation or basis for a new and more sustainable global food system. Such Local Food Systems have the potential of strengthening local economies, improving livelihoods, promoting women and combating social exclusion – all within environmental limits. But realising the potential of local food systems requires far-reaching transformation of business-as-usual in both North and South.

The need and opportunity for radical transformation of food systems underpins the United Nations’ declaration of a [Decade of Family Farming](#), the Food and Agriculture Organisation’s [Framework for the Urban Food Agenda](#), and efforts to mobilise multi-stakeholder support for scalable [natural and nature-based approaches](#) to reduce damage and remediate environmental damage (for example in relation to water for agriculture and nutrient recycling). The accompanying explosion of activity in “innovative financing” seeks to provide a foundation for countries and regions with large small farm sectors to find new ways of realising the potential of smallholder farming in reorganising their

food systems to produce and deliver the kind of food consumers are increasingly demanding, while safeguarding the environment and revitalising rural economy. However, notwithstanding anecdotal evidence of the multiplier effect of such an approach (helping to preserve heritage landscapes, biodiversity and other cultural values associated with small-scale farming), uptake is slowed because there is no obvious business model (financial sustainability) and the need to overcome real and perceived challenges of networking small farms and food producers so that they can stay small and guarantee the quality, timely delivery and traceability of the food they produce (governance and management issues).