CITY FOOD POLICIES


Logistics for food commodities

Mainstreaming sustainable urban food systems.

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To be or not to be ... a commodity?

Although market economy substantially outweighs at global level, subsistence agriculture continues to exist whenever food production is necessary to meet basic human needs for personal/family survival. And when it manages to keep going, subsistence farming means more than minimum living standards because it sustains communities life and promotes relationship with nature, cohesiveness, sharing and even pride. As a matter of fact, these reasons are the same invoked to explain why urban farming has become a popular trend in the last years in cities largely dominated by market economy.

To fit the standards of industrialization, basic foodstuffs have been considered as commodities, loosing identity and qualitative differentiation, both re-introduced during the process of transformation and through the operation of branding and marketing. Food safety has also contributed to promote food industrialization, by upgrading high cost technologies and by prohibiting traditional processes, despite the evidence of numerous food scandals. The whole scenario has been detrimental to small scale farmers, fishermen, breeders and food craftsmen, as they cannot get value from any high quality production on mass markets. In the meantime, the substitution of traditional know-how by technologies has developed a high level of efficiency by increasing productivity and saving costs, but it has not taken into account negative side effects on environment, health and local economy that are becoming today a limiting factor.

The globalization of the market in a long-term business strategy has connected such industrialization process with increasingly sophisticated logistics allowing planning, implementing, and controlling of the effective flow and storage of goods, services, and related information. As food supply chain or food system refers to the processes that describe how food ends up on our tables, from farm to plate, the processes include production, processing, distribution, consumption and disposal. Coherently with food commoditization, logistics has become the main driver – and also the most profitable and fastest-growing segment of the food systems. Called to constantly evolve and deploy strategies to monitor, respond, and manage this complexity, it is now facing the challenge for expansion into emerging markets as well as the necessity to answer to

increased customer expectations such as high quality, low cost, flexible delivery, reliable performance, and sustainable low-carbon solutions in mature markets. It is also exposed to market volatility, referring to major shifts in customer demand volume, product or service mix, government regulations, new competitors, substitute products, short product life cycles, and requirements for rapid network nodal changes and redesign.

Indeed, food supply has been organized to avoid any disruption and has been generally taken for granted, until recent concerns raised by environmental impacts of transportation systems. The term “food miles” coined by Tim Lang in the early 1990s has been widely used to refer to environmental impacts and hidden costs of food logistics. These include air pollution, global climate concerns, noise, water pollution, accidents, land use and habitat fragmentation. But in spite of its wide use, “food miles” cannot be by an accurate indicator, as transport's environmental performances not only depend on distance: they are also correlated to transport mode, addressing shipping, air cargo, trucking, rail, pipelines and intermodal terminals and to the efficient loading of vehicles. The energy consumption of transport has almost doubled over the last three decades of the previous century and road transport had by far the largest share. Both air pollution and greenhouse gas emissions derives from burning fossil fuels and are strongly related to transport energy and vehicles' use.

While emphasis is given on the reinforcement for local food supply in cities to reduce transport environmental footprint, the critical issue of the “last mile” logistics, is too often overlooked. Indeed due to high population density in urban areas, all kind of goods, either produced locally or not, reaches the cities and must be transported to their final destination. Therefore “last mile” transport deals very largely with making deliveries in retail stores, restaurant and several other receivers located in all urban neighbourhoods. This logistic, which is the least efficient of all the supply chain, is also the most expensive due to greater constraints in terms of service, such as time schedule and number of deliveries. Usually performed in small trucks and vans that operate below their maximum carrying capacity, with high incidence of empty runs, it is also slowed in heavy traffic. Moreover most urban food deliveries are operated by old diesel vehicles that consume large quantities of fossil fuel and generate the release of higher quantities of pollutant emissions.

The metaphor of Urban metabolism to rebuild urban food supply chains...

A reaction movement is loudly calling into question globalized food systems, with the attempt to create direct connection between farmers and citizens. So doing, it seeks to increase access and quality of food while relocalizing production and distribution to promote both environmental sustainability and socio-economic justice. Consumers are asked to assume part of the responsibility by choosing food products not only by considering retail selling price but also food intrinsic qualities: health and nutrition but also social and environmental factors. Doing so they are asked to look at the whole food supply chain and re-evaluate the advantages of small scale and local production. Such alternative food systems are generally described and emphasized “in opposition” to the conventional global agro-industrial foods.

> In recent years, interest in alternative food systems (AFS) has grown both in the popular imagination and in the academic literature. The literature is rife with justifications (or hopes) for the continued and necessary expansion of AFS in the face of unsustainable conventional food provisioning […] The challenge now is to understand how AFS can in some sense disrupt this dichotomy and become more stable food sources capable of providing both “quantity” (more food for more people), and “quality” (social, economic, health, and environmental benefits)” Source : Albrecht et al., 2013 (4).

It is often assumed that economic development unfolds according to two options: to look at the past towards local economic models or to look at the future towards globalized-market dominant model. There could be a third option to combine old and new, using significant progress and useful knowledge. Caught in the crossfire of increasing both local food supply and urban last food mile , eco-efficiency food planners cannot

meet the challenge without taking a step backward. In this sense, to consider the broader perspective of urban food metabolism, where cities can be seen as “nodes of input and output systems” and where resources and energy are transformed in quality of life, products and waste can be a useful frame for managing food logistics (5). Indeed, such metaphor, when applied to urban food systems, allows to map in and out food-related flows along the steps of food production, supply, distribution and consumption, up to waste management. In such a wider picture, the “local food” issue shifts from the narrow environmental friendly logistics matter to the wider and long term question of food self-sufficiency, land-use planning and agriculture management, with economic, social as well as environmental benefits. Consequently, the matter of urban food-related logistics realigns on the match between supply and demand and on the “last mile” transport eco-efficiency, thus encompassing all foodstuffs, independently of their origin, local or global, in order to optimize urban food-transport system.

This implies that cities planners measure the population of all city-users, including inhabitants, visitors and tourists and also all commuters attracted every day for various businesses and services. According to the food requirements and also the eventual quantity of food produced by urban agriculture, these numbers will allow to calculate the total volume of foodstuffs, eaten at home or outside, within the frame of public food services or commercial catering, that need to be transported into the city. In the meantime the “out” food related flows will correspond to the waste production. A specific attention need to be paid to uneaten food, yesterday food waste and today more and more used for social purposes. It also need a detailed mapping of all activities (retailing system, food processing shops and laboratories (such as bakeries, meat shops, delicatessens etc.), restaurants, central kitchens, in order to optimize fleets routing and dispatch, vehicle and pallet loading, workforce scheduling, delivery etc. Today, this optimization is impossible because this last mile transport is individually managed by different actors. Even in the case of public food service where municipalities are the main purchasers, there is not an overall look on transport services allowing to combine and pool efficiently food delivery.

Infrastructures endowment must be supported by innovative projects and best practices in order to be demonstrative. Indeed as any other carpooling project, last mile food logistics optimization brings a lot of constraints to combine delivery services that usually works independently. It must be also kept in mind that this "last mile" logistics represents today a major challenge for alternative food systems, in particular to allow start-up local-food logistics platforms to be cost-effective, with the limitation of empty runs that undermine transport profitability (in particular, due to staff costs). Mapping and monitoring are two pre-requisite to create adequate food hubs infrastructures and suitable fleets of vehicles, efficient enough to pool food stuffs, centralize information and manage urban last mile food transport. That's why an urban observatory, working closely with urban planning services, is necessary to collect, analyze and combine all these information. Both mapping and monitoring are essential to better understand thresholds of effectiveness and to quantify last mile food logistics externalities in order to regulate and control last food mile transport system harmoniously within urban traffic.

Bibliography:

(4) Cayla Albrecht, Rylea Johnson, Steffi Hamann, Lauren Sneyd, Lisa Ohberg Lisa and Michael CoDye, (2013), Toward alternative food systems development: Exploring limitations and research opportunities, “Journal of Agriculture, Food Systems, and Community Development”, 3 (4), 151-159. http://dx.doi.org/10.5304/jafscd.2013.034.019

(5) Hans-Georg Bohle, (1994), Metropolitan Food Systems in developing countries: the perspective of “Urban Metabolism”, “Geojournal” 34.3, pp. 245-251.