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THE FARM OF THE MILLERS' PARK:

LOCAL EXPERIMENTATION OF AND FOR A SUSTAINABLE URBAN PLANNING

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Abstract:

System viability approach is analysing how a system reacts, resists, changes and evolves in order to enable its own survival with facing a variety of environmental challenges. Moreover, viability constitutes a way to identify sustainable politics and actions through defining operational constraints, in terms of vulnerability and resilience. This last describes individual and social systems property to face a catastrophic change by resisting, adapting or transforming (Walker & al., 2004; Holling 2001, Scheffer & al. 2003).

Nevertheless, systems approaches have been criticised for their inability to identify "bottom-up" processes, mainly referring to participatory engagement within territorial challenges; This obviously leads to the following question: is system viability an easy framework to be applied by local communities ? As explaining and identifying distinct environmental conditions and community responses to the sustainability challenge constitutes a complex activity for both scientific researcher and community participants, could viability indicators easily be understood by non-academic people ? Therefore, what type of methodological tools should enable participants to collect information to ensure a community viable territorial construction ?

To provide answers to those questions, we'll present a participatory experimentation situated at Villeneuve le Roi, a 3-hectare pluriactive farm not far from Orly airport, Paris, France (Vialan 2012). This dynamical-insertion site tries to status this local environment as a communaury project, implying farming and gardening know-how transmission, environmental acknowledgment and cooking-baking practice. With knowing the importance of food as part of our culture and survival, this last game of the "viable meal" should develop a way of working on fundamental environmental resources such as nutrition, well-being and health. Thus, this participatory initiative can be readed through the three main viability dimensions: resisting –with keeping traditions both in terms of cultural practices and environment protecting, adapting – which means here facing a

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highly different environment, namely in key areas such as food habits or farming techniques, and transforming – by introducing new consumption modes through cooking their own farmed meals and baking their own bread.

This pragmatic initiative also enable Meunier Park inhabitants to rebuilt their identity, that means to process individual resilience through collective participation to farm's life. In that way, transmission of knowledge, but also communautary programmes and collective projects constitute the real sustainable added values for community territory, leading to a new conception of democracy and citizenship.

1. Introduction: a farming cooperative empowerment experience

As the territorial intelligence traduces the way of governing the local which the analytical and prescriptive concept of territorial questions, sustainability goals should be achieved through effective economic, social and ecological aims as a route to socio-ecological transition. However, transition can't be driven without a dialectical answer to the tensions between local monitoring and global gouvernance, with involving territorial cooperation action. To ensure the conditions of emergence of the sustainability, the following example of collaborative farming in France constitutes one sustainable answer to inductive eco-social convergence with the implementation of collective actions.

Located in the city of Villeneuve-le-Roi (France), not far from Orly Airport, the Farm of the Miller's Park is a field of 3ha that has been transformed into a multi-active Farm by committed inhabitants since 15 years. Apart from a few buildings, this place comprises cultivated lands, pleasure gardens, and places for animals. There are roughly 650 members at the Farm, and some of them (60-100) have appropriated the place insomuch that they feel and show solidarity with the employees of the Farm. They suggest new projects, constructions or activities, and consider the Farm as another home, with coming there to share coffee and chat. Therefore, the farm is considered as a « place-resource », for and from the inhabitants (figure 1).



Figure 2 – Carte mentale réalisée par Monsieur C.

Fig.1: Mr. C's Mind Map of Meunier Farm environment

As the amateur, in the first and noble sense of the word, is the main word of the farming collectivity, every one is in a double position of teacher and student, and has knowledge to share without disqualification: thus, the experience of the Farm allows each and every one to build and assert its identity, to gain recognition inside a group, and to shared ecological so as social

values as a knowledge to be cultivated and transmitted (Faburel, 2010). Therefore, the proposed social responsiveness empowerment of Meunier Farm experiment is enabled through social, cultural, and ecological converging capitals reciprocal reinforcement with socio-economical converging benefits.

2. Converging inhabitants benefits : socio/eco/enviromental capitals increasing

Instead examining how the relevant combinations of social ties and resources are assembled to meet a given economic balance, social capital theory considers less distinction between exchange that is otherwise deemed « economic » or « social ». A fruitful perspective for developing a more coherent conceptual framework for incorporating social capital into economic development theory and policy is to extend the insights to environmental challenges. This exactly constitutes the project proposed by Meunier Farm experiment, in terms of sustainable eco/socio/environmental shared capitals development, as seen figure 2:

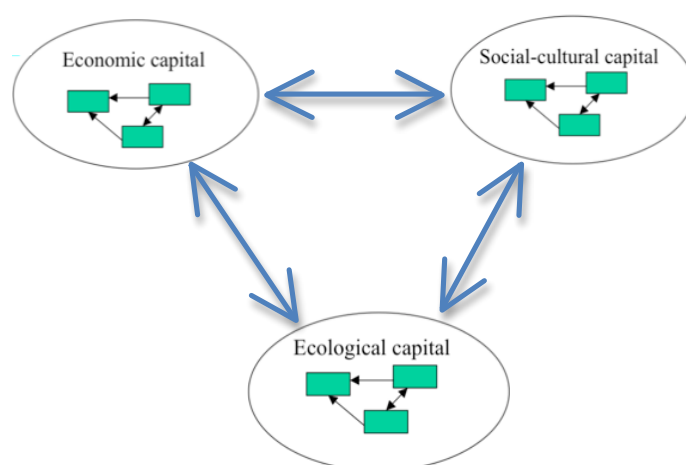


Fig 2: Articulation and convergences between sustainable development capitals

A first benefit of Meunier Farm experiment is social-cultural capital increasing, proceeded by interindividual new forms of relationships through collaborative work and daily life sharing. In this multi-active Farm experiment, inhabitants empowerment is provided, should we say induced, by employees of the Farm: they help them to pursue their projects, with no link of expertise. So, daily activities, as diverse as they are, all have in common to increase the inhabitants' self-sufficiency in their environment, to expand their means and power of action, from the exchange of know-how. Thus, this experience constitutes a powertrade for cooperative action, through policies participation or collaborative intelligence (Bourdieu & al, 1992, Coleman, 90). « social capital refers to features of social organization, such as trust, norms, and networks, that can improve the efficiency of society by facilitating coordinated actions » (Putnam 1993). This rural empowerment experiment modifies the sociocultural identification of the inhabitants that has been affected by previous "social default", so that farming experiment increase their social capital by work and life transactions. By exchanging facilities, inhabitants of the farm aims to recover their social capital, with developping citizenship responsibility, and collective management capacities in land coworking (Fukuyama, 1995).

Second benefit of this collaborative experience is ecological (organic) capital increasing, through transformation of natural resources, implying a new way of cooperative and sustainable farming and food production, thus coping with a more dynamic conception of the environment. As this farm activity formalizes a sustainable transformation of natural resources to amenity

productions, a talking example can be found in cooking classes where inhabitants can learn how to cook bread. That emphasis put on bread (if it is a coincidence) is not insignificant: to learn how to cook bread is to re-claim ownership over food, through what can be considered as a basic element of everyday diet. In an even more obvious way, gardening is widely spread in the Farm and is linked to reclaiming ownership over food supply. As bread vehicles symbol of food independence, this particular acknowledgement benefit traduces an increase of ecological capital, considered here as relationship between individual life, work environment and a way to transform natural resources into sustainable food. With conveying many kinds of environmental knowledge: how to marry this plant with that one or with that flower, to know the rhythm of seasons and observe the weather, what are the good timings to plant... farm inhabitants transform their environmental perception through acting in a very practical goal (feeding), through each and every one's actions. Those action strategies lead them to follow responsible pro- environmental behavior, to endorse individual sense of responsibility, and to get pro-environmental attitudes (Hines, Hungerford and Tomera 1986).

By converting "inputs", "stocks" from labour and production (Bourdieu 1990), into "outputs", flows of services, produced goods and services contribute to the farm micro-societal amenities. Thus, wellbeing attributes of those produced amenities can be understood in both ecological and social dimensions: if farm co-working intends to produce feeding and essential needs supply as an economic benefit, the essential benefits are both social, with cooperative relationships creation in land co-working and ecological, through conceiving another type of relationship to nature.

3. Stocks to flows: inductive capitals fruting

To describe this co-evolution process, Territorial Intelligence (TI) networking E(Economic)-S(Social)-O(Organic) vulnerability model is therefore articulated between the three passive components of energetical systems, as potential energy, kinetic energy, and energy dissipation (Woloszyn, 2012). E.S.O. model therefore proposes an analogy that identifies the "stock" as the capacitive property of the system to maintain or develop its capital, the "flow" as the conductance processes of capital (re-)production, and the "benefit" (or loss) of the system driving as the inductance effect of stock to flow capital recovering (figure 3).

Property (Entropy class)	Economical (Model E)	Social (Model S)	Ecological (Model O)
Capacitance (Potential)	Capital (stocks) Compétences Confiance	Cultures, Social capital (actors & networks...)	Biosphère (Biotope +biomasse) Etat d'être (bien-, mal-)
Conductance (Dissipative)	Flux (Goods) Services production	Networking Cultural action Cooperation	Eco-actions Gestion environnementale (Ecological management)
Inductance (Kynetical) (= variation capacitance)	Résultance (valeur ajoutée, retranchée...)	Integration - différenciation Radicalisation	Ecosystemic interactions Fertilisation Désertification

Fig 3: Combined capitals between environmental and social life values: generalized social energy between capacitance, conductance and inductance

Moreover, by converting capital stocks into service flows in the 3 dimensions of sustainable development, stocks are understood as constitutive of the "capacitance" property of the system, as "flows" constitute its conductance, leading to capital stocks growing or declining. This system evolution describes the "inductive" effect of the (stock/flow) conversion process during the time of the experiment (Woloszyn, Quenault, Faburel, 2012).

During the "flows" motions, inductance supplies to both capacitance and conductance, with taking into account the systems transformation potential through their temporal activities (figure 4).

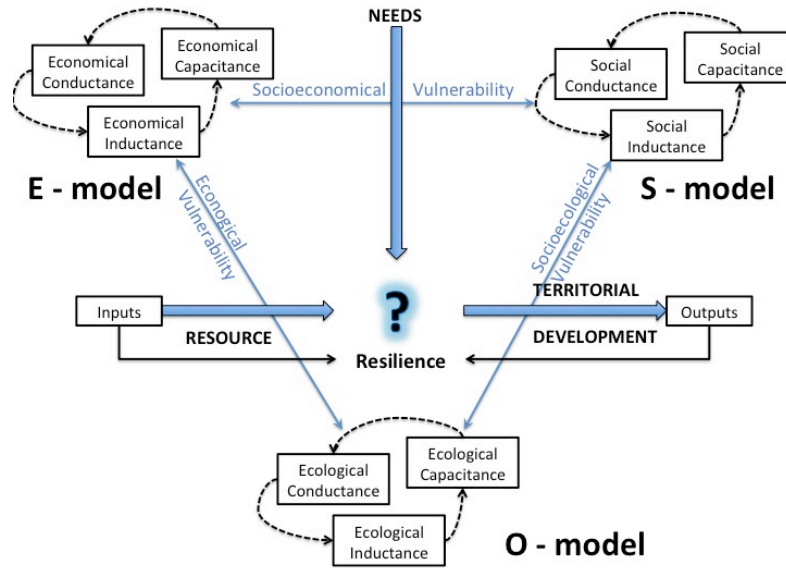


Fig 4: Open-analogical model of sustainability

This paradigmatic change of the process leads us to consider a thermodynamic approach of open-living systems, instead of mechanical-closed systems: stability key of those lasts closed systems, retro-action, is here considered as the open-systems evolution source (Dumas, Woloszyn, 2012).

As a complex combination between environmental and social life values, principal output that the farm inhabitants may benefit to upgrade their wellbeing is nature - society reconnection, far from any abstract conception, or any power exerted over nature, thus reciprocally extending their ecological and social capitals, as seen figure 5:

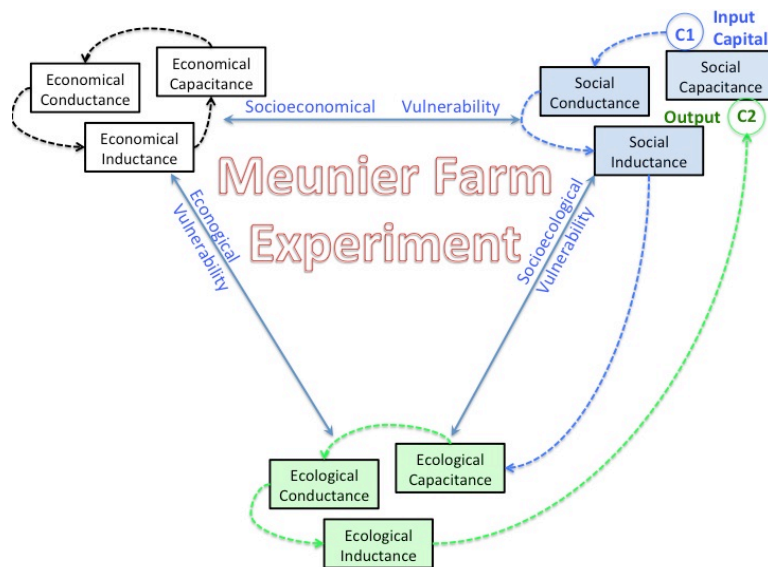


Fig 5: Social capital benefits from Miller's Farm experiment

As a consequence, association of potential, dissipative and kinetic energy concepts with the three pillars of sustainable development leads us to define the three dynamical notions of a general theory of social-eco-environmental entropy, also called "generalized social energy", thus developing people's "capacitation" attributes by social capital increasing.

4. Capacitation as inductive socio-ecological capacitance increasing

As shown within this model, Meunier Farm inhabitants find there together the resources ("stocks") they need to pursue their wishes and projects ("flows"), as well as (Hicks, 1939) conception of community wellbeing stated that maintenance of the wellbeing of a community is a function of income flow maintenance, the conductance process, from a done stock of capital, the community capacitance (figure 6).

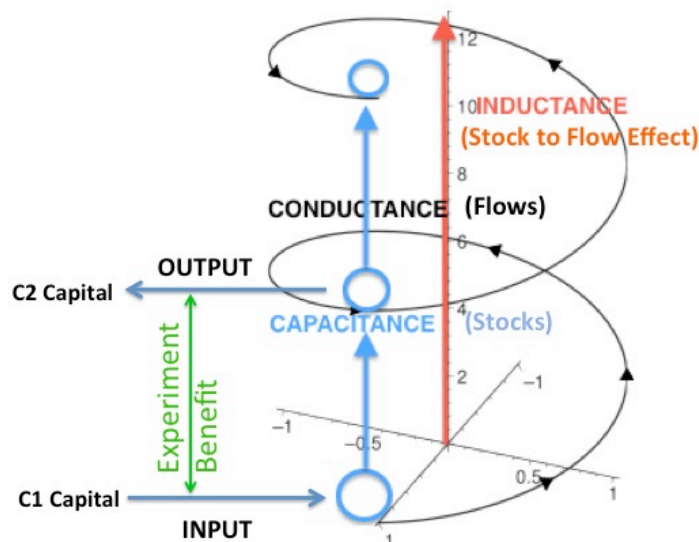


Fig 6: Inductive process of capacitance increasing: socio-ecological capital benefits of farming experiment

When a community's capital stocks is growing, its capacity to generate flows of goods and services will also grow, thus enabling the community's ability to improve its wellbeing in the future, or consolidate its resilience capability, as seen figure 7:

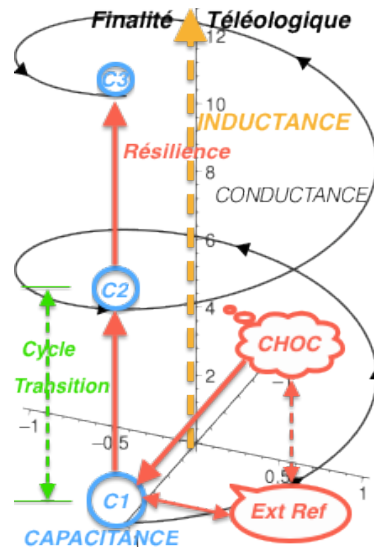


Fig 7: Resilience consolidation by Meunier Farm socio-ecological action process

5. Conclusion: farming as a way of resilience

With increasing social capacitance of the inhabitants, experienced collaborative farming facilitate the access to the main "social body", civil society, with developing new ecological and economical meanings of social life. Growing individual stocks of socio-ecological capitals provided by this collaborative farming experiment may act as a buffer against forces that will occur when inhabitants will be reinserted into the "savage sociality" of common socialized environments. Thus, it contributes to the renewal of the "resilience potential, passing from resistance ("Input" social capital) to adaptation (social to eco-social capital circulation) and transformation (inductive effect of stock to flow conversion).

Stock to flow economical/ societal/environmental transformation during production/ consumption/ exchange processes are here once again observed, leading to an inductive process of people's "capacitation", through actor's socio-ecological capacitance enhancement, thus, resilience potential optimization. Therefore, "resilience capacities" socio-ecological enhancement, due to inductive effect of the social/environment capitals circulation between Meunier farmers, results not only from a social with ecological capital mixing, but essentially from capability emergence as eco/socio/environmental capacitance growing, for a more fare sustainable development process.

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