What sustainable development means ?

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Chapter 1

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The concept of sustainability opens a new sphere of operation and study: the link, the linked and the linking . Then it introduces a new subject of science and simultaneously induces the notion of borderlines in development which are required and organized for maintaining the link. It invites us to reconsider the various branches of knowledge, the dominating idea of work specialization, the partition of knowledge and the prevalence of vertical organizations. It suggests us to keep away from methodological individualism, economical insularity, and specialized demands which are needed for rebuilding, through a interdisciplinary approach, the concept of development, and binding together science, politics and ethic.

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IS THE SUSTAINABLE DEVELOPMENT A HOLISTIC CONCEPT ?

The concept of sustainability tries to represent a moving and adaptable response to networks of theoretical, methodological and practical questions, related to joints, interrelationships and interactions within and between series of couples which firmly link (or separate) intelligibility of our world, human solidarities, biosphere unity, and efficiency of social activities

This way of research renews debates on relational antinomies of couples which marks out scientific and practical discussions, including economy-ecology, urbanization-nature, industry-environment, trading-government, local-global, entrepreneurship-territorial areas, regional-world-wide, North – South, organization-particular interest, difference-disagreement…

Justification of this new way lies in prosaic and practical necessity of gathering together adequate conditions for survival of the human beings which are threatened by antinomies appearing basically between reversible, linear and insular economical logics, and discontinuity, low resilience and irreversibility of phenomena in ecosystems.

But facing the risk of chaos, this justification also lies in the part of seduction carried, inside of it, by the proper imaginativeness of sustainability, and in the reconciliation of antinomies generated by the industrial revolution: universal and differentiated, society and individuality, industry and nature, risk and liberty, and invite to ideal dreaming of humans living within their secondary nature, the technician civilization.

Practically, sustainability in development brings up the qualitative and quantitative problem around energy and raw materials flows and storages, either picked up or emitted; it doesn't dissociate ethical and normative solidarity, horizontally with the impoverished and vertically between successive generations.
This characteristic is the condition for its scientific pertinence as it should be for any theory of development, intelligibility, efficiency of organization systems and guidance of human societies.

Then sustainability is not a summation of cultural, territorial, ecological, social, economical and local components. It lies in structuring elements which transversally bring in these domains, proper answers completing each others in each of those fields, and in last instance, which are turned out to be equitable and compatible with the local valorisation of the environment and the world-wide preservation of the ecosystem.

The sustainability concept invites us to consider the systemic interrelationships and to come within the scope of a framework taken into account a holistic methodological structure in which the affirmation of the world unity implies its diversity and also requires – concerning the human society – to recognise the specificity and degrees of freedom of this diversity, and to develop solidarities which conditional to its own reproduction.

But if this concept, inducing a new field of investigations for the social sciences, *the link, the linked , the linking*, is inspired by the systems theory which is renewed by putting it out of its original «naturalism». It should resort to methodological holism and lead to a new universalism; it does not lapse into working out liberty privative policies.

Taking first into consideration the fact that in order to reach a particular aim, a system may use – *according to fixed situations* – several diverse ways, - this property is qualified of "equifinality" - a system is sustainable if it only ensures a determining role at the local level.
And autonomy at this local level would be all the greater since it would have developed the capacity of flexibility, resilience and dynamism against external and global constraints, within the frame of shared norm and ethics.

If sustainability admittedly appears as a wide holistic structure giving direction and frame for human organizations, it allows proceeding in the same direction by using different ways. («All ways lead towards Roma !»). It is only necessary to commonly define which Roma is concerned and to live in differentiating the locations.
Principles of reciprocity, physical or virtual proximity, local comprehension, confidence, responsibility about voluntary and global interrelationships, appear fundamental.

Enlargement of fringes local for freedom, allowed by sustainability, requires suppressing compartmentalisation of concepts, enriching assessment tools, complementing economic tools, changing materialization of organizations and activities, promoting local initiative, human engineering, and immaterial capital.

Therefore sustainability assumes circulation, transparency, crossing, and stimulating synergism of information, as well upwards as downwards.

The holistic structure of sustainability meets and rebuilds qualitatively – on the mode of systemic conciliation – scientific knowledge without separating during their rebuilding the normative project, ethics and the scientific approach. So the conscious human organization which is able of providing any project would be distinguished of the nature per se.

Economic activity is highly dependant, in both aspects: originally and finally, of natural environment in which productive activity can take place. Because of its low resilience, the natural state, whose functions cannot be substituted, gives raise to repairing, curative, preventive, maintenance, maintaining and surveying activities; but it also lay down threshold of limits for implementation and flexibility.

PRACTICALLY WHAT ARE SOLUTIONS FOR ANY ENTERPRISE ?

Implementation of cooperation over the fence, dealing with competitive strategies and enhancing the productivity of resources and information rather than working productivity.
Because neither environmental industry nor the end of pipe approach would be able to face to challenges linked to sustainability and to make us dreaming. The industrial ecology offers global viewpoints and micro-economic tools, eco-efficiency, for introducing sustainability into corporate development strategies, for cutting the costs (inputs, control, regulation), and for

managing the risk preventively, globally and locally. Sustainability is not a matter of costs: it is an investment. Organization, strategic partnerships in the field of research and development, decentralized cooperation and the market should be combined together.

The industrial ecology is inspired by the state of art in ecosystems for determining the conditions which would be able the industrial system for being sustainable. It should not be mistaken with environmental industries, neither with "green or clean" technologies; it is concerned with a long term evolution of the industrial system on the whole.

The industrial ecology describes the industrial system as a certain dynamic configuration of flows, and stocks of matter, energy and information. It sets out and analyses the metabolism of its biophysical components, from cradle to cradle, from their extraction until their return towards the biosphere cycles.

Its implementation in the economic sphere is opposed to a representation in which humanity, industry and the city are thought out of Nature, environment being considered as outside, an only place where one should minimize repairing the environmental damages which are resulting from the human activity, by using the technological innovation. Environmental industries are the practical identity of this representation.

The approach "end of pipe", compartmentalized and sector-based in nature, is proved to be expensive, pernicious and unfair. It transfers the effect locally and postpones the deadline.
This approach individualizes the profits and increased globally the costs. The "polluter-payer principle" which is supposed to finance cleaning up activities and to internalize costs by means of monetary sanctions, could lead not only towards inequity - more means of pollution we have, and more pollution we can support – but also trend to more growth which could locally allow pollution: the more means of cleaning up we have, the more can be cleaned up and more the market presents new perspectives of profits in orientating investment and research about "end of pipe" technological innovations.
Then sustainability would appear less an attractive project but an endless load for the whole society.

Inspired by the initial feeling of E.G. Hutchinson, a view was expressed in a study dealing with biogeochemical cycles and published in 1948: the industrial system would only be presented as a part of the Biosphere. The expression “industrial ecology”, just a simple biological analogy, appeared within the specialized literature dedicated to physicists, chemists and biologists in the 1960-70 , then spread out at the beginning of the 1990 among the industrial engineers circles in the USA.

Robert Frosch from the University of Harvard and Nicolas Gallopoulos, both responsible for research on motors at the General Motors, launched again in 1989 this way of research and renewed the debate on relational antinomies about economy and environment in considering the industrial system as a particular case of the Biosphere. The matter of impacts resulting from human activities is no more restricted to problems related to wastes and pollution.

The leitmotiv of these pioneers was simple : re-use, repair, retrieve, recycle products and by-products on a very large scale (Frosch and Gallopolous 1989; Allenby and Richards 1994; Graedel and Allenby 1995; Garner and Keoleian 1995; Ayres 1996). The industrial system could have to aim to globally close the cycles of matter and energy, and to limit dispersal emission and dejections: wastes can then be considered as resources and accumulated emissions and rejections can then appear as losses and threats.

The implementation of a global and integrated model of industrial ecology would allow an optimal management of resources, first if it subordinates the “end of pipe” approach to a wider viewpoint and, secondly if it elaborates production methods whose impacts would be environmentally acceptable.

This implementation would lead to increase dematerialization of production processes, of products and organizations, to increase the value of wastes considered as resources, to close material cycles, minimizing dispersal emissions, lowing the carbon level in energy. Improving the productivity of physical resources (more use-value with the same quantity of resources) and of information (more quality with the same quantity of information), in order to substitute it to

the labour productivity, and then to allow an economics based on human ingenuity and functional economy. It requires informational synergies, cooperation between organizations and breaking up corporate functions.
For the practical introduction of sustainable development within the eco-industrial relationships, it does exist a strategic tool which is essential for a proper scientific rigor of sustainability, an strategy for community development and global economic system, and finally an operational tool (eco-efficiency) for company management.

Significant experiences show approaches, methods, territorial applications and results of industrial ecology.
Let we take as example the realization of a transferable innovation into a sector of the Minneapolis city, in the USA: the ***"Phillips Eco-Entreprise Center***, built with 79% of used and reprocessed material on the site formerly devoted to the waste transfer and storage and where the exploitation of 6000 m2 eco-activities makes this centre a model of integrated and crossed industrial ecology connections and services.
Another example now in progress is the virtual eco-industrial park in Brownsville, Southern Texas in the USA. Founded on a local approach and from a data base working on analyzing the metabolism of agricultural and industrial processes, it allowed identification of virtual links between existing and virtual enterprises. This project was exemplary in nature because the partners are not physically pooled within a particular site, but they are jointly linked by the composition of their waste flows which constitute their reciprocal material entries and the key of their profitability.

We can add some more companies : ”3M” is identifying and re-using non used raw materials, obsolete products, useless or old-fashioned equipments, and valuable wastes; “Dell” is running mail-order business of personally adapted computers; or “Xerox” which gave up in producing new photocopiers in aid of dissembling, rebuilding, recycling and keeping alive existent devices and equipments, - conceived as modular segments – and training for that purpose their technical staff for visiting customers; or “Electrolux”, world leader in washing machines, which was

experiencing in Sweden a "pay per wash" at customers' homes in offering a long range renting[1]. We can notice dematerializing of "Dell" activities and relocating of jobs by "Xerox" and 'Electrolux" in increasing local tasks in keeping up, survey and maintenance.

These instructive examples describe the essential contribution of industrial ecology in implementing sustainable development. They show us both singularity and plurality of aspects in eco-industrial and territorial closeness, - "*eco-nets territories*" and "*territories of eco-nets*" – but they also bring to the foreground conditions for making them transposable, and for their implementation and development. They allow illustrating the systemic joints between activities, local organizational modes of industrial ecology, local reshaping of tasks and jobs, social functions and partnership strategies required for territorial implementation of sustainable development.

An inventory of symbiotic groups of activities would allow to encourage the firms to link together their material flows on a given territory or to integrate them within a net, and to organize the industrial system around the most efficient strategy for dematerializing and preventive environmental protection, intensive use of resources, utilization value, sustainability of goods, bringing closer the supplying and destructive sectors in concerned cities and the employment market.

Besides the research of global environment quality of economic activities, the industrial ecology can propose the fundamental conditions for a dual equity – spatial and temporal, horizontal and vertical – in considering their effects on content location and role of human working in wealth production, separated of material flows, and in transformation of a product into a service.

In favouring a thrifty management of resources and energy, a recycling of materials, and confining the pollutants, its limits the ecological imprint, preserve and enhance the irreplaceable value of patrimony and landscapes, substituting production and exchange of rights of goods use to production and exchange of products, dematerializing systematically objects, infrastructures and way of life, internalizing the costs of products defects – whose running proprietary becomes

[1] experiment temporarily stopped since the end of 2004 because of the dissensions between Electrolux and the company of distribution of domestic electricity

responsible "from cradle to cradle", relocating tasks modified into service activities, giving greater place to informational energy and to human a slow propulsion face to mineral energy, and prevailing human ingenuity and immaterial capital face to technological machinery.
Any service being not storable, within society composed of users, the industrial ecology then increases meaning of social responsibility, local interpersonal relationships and individual initiative.

WHAT ABOUT SOLIDARITY ECONOMY AND SUSTAINABILITY ?

Solidarity economy which is characterized by social capital concerns information and its production is social link, is in possession, together with the industrial ecology, one of the other keys of sustainability. Territory based associations of inhabitants acting for themselves, kinds of laboratories of the solidarity economy, appear essential vectors of local sustainability and of novel tasks for implementing the global sustainability. The State doesn't hold a monopoly for elaboration and realization of the general interest.

Implementation of sustainable development lies within the core of its project: the principles of individual implication and social responsibility. It requires a transversal circulation of information, compels a rebalancing order of importance about the three poles characterising the economic rationality: **market, plan and reciprocity**, in insisting on the last one, the reciprocity.

This solidarity is built collectively and its finality is not based on economy in nature: it is expressed within unspecified spaces, on an impersonal manner, and by delegation to the state, but the contributed implication is local, monetary as well as non-monetary.

And where the civil discussion put in the foreground human intelligence, a common history, local resources, co-operations, partnerships of projects, and collective solidarity upon a local territory to preserve, then there are emerging civil energies or strengths and entrepreneurial local projects.

Such projects are conceived and developed by people who freely joint together in order to lead towards common actions, not with the aim of profit maximization, material product or control, but with the aim of giving solutions to direct and concrete needs which contribute to creation of sustainable activities and links, reinforcing the social cohesion by novel links of solidarity.

If the preliminary action of many associations is to do "activism", their main missions and actions are before all: information, training, social integration, counselling and helping individual inhabitants, mediation, and creation of social link.
But studies and researches, (counter-) expert evaluation, technical support, helping for private or public decision-making process, are also typical of territorial or general oriented associations mainly in the field of quality of life, implementation of transversal approaches or actions having social innovation in aim. Transcribed in terms of jobs, leaders responsible for associations of inhabitants acting for themselves, carry out tasks like project manager, local development engineer, arbitrating spokesman in living environment, risk manager, and scientist working out a research-action plan.

In that way, associative skills play a fulfilled role as social actor of sustainability. Many of these are not only circulating information and arousing civil initiative, but they are also developing partnerships, set actors in synergy, survey the global coherence of local initiatives, bringing back up ascending proposals of civil society and favouring or taking part to ethical investments.

Their functionality is based on “hybridization” between trading and non-monetary economy, between monetary and non-monetary flows, between material and symbolic flows.

This hybridization looks like a combination of different resources: resources obtained by trading provided services, non- merchant resources coming from redistribution, non-monetary resources issued of voluntary contributions, or paid in kind, essentially information and knowledge sharing.

Now, quality, transparency, promptness, interactivity and its data processing are the key of all efficient organizational system, of effectiveness of decision and action, and of creation of added value within a society of knowledge, avid of sustainability.

Solidarity economy substitutes its main capital, the productivity of information, for labor productivity. It generates more qualitative information through the same quantity of collected information and for equal charge of labour. Reliability of information requires neighbourhood, closeness, confidence and it is built at the local level.

The information of associative source is public and free of access. Its quality (local utilization value), its mode of obtention, its processing form, its way of spreading, and its exploitation way, differentiate it radically from an entrepreneurial merchant (exchange value), from a public administrator (regulation value), or from a political manager (power value).

One association of inhabitants acting for themselves on a given territory which has to be protected, cannot be perpetuated without achieving its local object, its "job core!", the local sustainable development. This kind of association doesn't exist without a common project animating it, its incited confidence, and their locally obtained results. It is a local project direction, a local project management, and is horizontally rebuilt at each project. It is the local global project which is structuring it itself. Its object is action with voluntary inhabitants and concrete project achievement for its inhabitants. It is not matter of power, neither matter of money: it is not matter of surviving itself.

But its social engineering and its detailed knowledge, which both are compensating its weakness in material capital, -monetary and financially – can only be working through its capacity of bringing up a local information to transfer it outside the given territory, to transcribe its general and collective range, and then to bringing it downwards, fragmented in terms of global projects and concrete achievements. Its local projects, inscribed in the long range, cannot be achieved without capitalization of its knowledge, without any increased dematerialization of its activities, without putting its information out of the territory, and without relocating and horizontal sharing of its conceptual, technical and practical expertises.

Regarding the duty of sustainability, the solidarity economy establishes its practical and ethical pertinence through appealing to principles of reciprocity, proximity (physical as well as virtual)

of individual initiative, confidence, social responsibility, crossed circulation of information and free, open interrelationship. The "conventional" or voluntary approach concerning the solidarity economics, allows specifically both increasing standing and synergy of civil energies, either locally based or/and acting through networks, upon common and societal purposes.

Their pieces of information, proceeding informally and transversally, by using relocating and multiple networks, build emerging networking territories and networks abilities based on territories. The accumulated abilities provided by these local actors, prepare a local frame which is capable to design another global world.

A first illustration, experience and result can be selected in the Nord-Pas-de-Calais territory [Northern France]. This area presents a cruel example of scars resulting from a former fabulously rich industry, and non sustainable development. This later made its reputation but could have become its major handicap. The only continuous action of the local associative movement was able to inspire this local field of industrial cultures, the necessary condition of becoming a social and territorial reference of sustainable development practices. This area takes advantage from one of their precious inheritance resulting of this difficult period: the custom of struggle, sharing solidarity which now nourrish its associative structure, and a traditional cooperation between cities.

This culture sets up one of the basic nucleus dealing with sustainable development and emerging jobs; these latest are now ensured informally – for some of them – through one association "*Environnement et Développement Alternatif* (EDA), environment and alternative development, working in the core of local actors' strategies and problematics about sustainable development. It assumes various partnerships and missions related to wide fields: polluted soils, asbestos, transportation, water, wastes, energy.

In that way, it plays totally a role of social actor for sustainability, putting actors together in synergy, controlling the global coherence of initiatives, making bringing up and valuating ascendant proposals from civil society, making information circulating, creating and building up

solidary economy structures, encouraging and taking part to ethic investments, and helping along private or public decision-making process.

We can choose – better than any nice synthesis - the fine realization of the "***Phillips Eco-Enterprise Centre",*** issued from a population and non-profit making association and located in Minnesota, in the USA: ***"The Green Institute".*** This realization put together industrial ecology, economy, urban regeneration and eco-reshaping, employment, social integration and natural resources protection.

The Green Institute, a non-profit making organization was founded in 1993 by the inhabitants of Minneapolis and by local entrepreneurial strengths, within Philips, a deprived area of the city, crossed by highways, factories and industrial plants, foundries and social distresses. ***The Green Institute*** was born after a long struggle against an installation project dealing with wastes transfer and storage station.
The unemployment reached more than 15% of active population, equal to 3.5 times the US national mean. About one hundred of social programmes overlapped each other within this area for helping its 18 000, inhabitants and numerous organizations supplied food, covered refuge and clothes. But all social funds distributed there were spent without any positive effects about employment and local wealth.

In 1995, ***The Green Institute*** opened the *"Re Use Centre"*, a retail outlet selling retrievable building materials. Fifteen workers were occupied seven days the week for exploiting the warehouse and they earned a minimum wage added of benefits and a quarterly bonus proportional to sales.

In October 1997, ***The Green Institute*** extended its activities in setting up a new alternative enterprise dealing with mechanical pulling down, and rebuilding of house structures doomed for demolition, in order to reuse them.

The Green Institute developed new market for these recoverable and reprocessed structures, and opened a warehouse, called *"Deconstruction Warehouse"* for wholesale business and also direct

retail trading on the spot. The working team was trained for tools utilization, building techniques, building glossary and d security standards.

The institute also releases a *"Green Ed"* program dealing with workshops, forum and projects allowing citizens to play a major role in implementing eco-efficiency and ecological behaviours.

In October 1999, the *"Phillips Eco-Enterprise Center"* was built with 79% of used and reprocessed material on the site formerly devoted to the waste transfer and storage.
Conception, building and exploitation of 6 000 m² of offices and pro-industrial and trading activities contribute for making this centre the most eco-efficient and thrifty over the world in matter of energy and resources management and an outstanding example of crossed and integrated links, of urban revitalization and social integration.

Now the centre currently accommodates a bunch of 18 "green" companies co-operating and allows 240 local jobs. Its cost of construction, higher by 10% compared to a traditional construction, was amortized in 4 years thanks to the savings in operation. And it is the interdependent co-operation between inhabitants, environmentalists, professionals of the commercial development, architects, engineers, banks, experts of the building, associations of tenants and students, who allowed to join together the expertise, creative energy and the money. And it is thanks to the teams, of disassembling and recovery of the structures and worn materials of value, that the costs of construction of the new centre exceeded only of 10 % the costs of a traditional building of the same type. These teams were made up of the disinherited "ethnic" populations city, formed and employed by "Green Institute", directed at the time by a black woman, Annette Young.

This eco-centre is now a service sets at the disposal of the residant enterprises by the *"Green Institute"* ; certain managers of these enterprises have been trained during this successful operation. This eco-centre appears now as an eco-pole, an incubator of activities, a cluster of eco-technologies, a typical association of key ‘green” strategic companies, giving birth to eco-industrial linkages applied, among others, to energy, geothermal science, heating, water, landscaping, clean production processes, environmental management, eco-construction and

building, health and practical and global strategies dealing with urban sustainability. This realization has been able of combining the "green" technological innovation, the financial performance, the local popular know-how, including engineering of deprived populations, the local employment, the networking application of immaterial capital, the human resources management and the partnership cooperation. That gave value to a territory through a global, integrated and coherent project; that linked innovation and insertion and rendered the environmental protection thanks to a reduction of certain costs like regulation, waste management, inputs , and through a local emergence of translocal social capital.

Today, the local associative actor is becoming a significant actor for the creation of value in the sector of Philips. Its annual budget raised around 4 million $ in 2004.

The Institute is now working with the University of Minnesota, the federal government and other cities, with the aim of helping to incorporate eco-industrial links within comparable projects : the centre being active as a catalyst for revitalizing urban sectors. A cooperative project of biomass should be set up in 2007. Its will use an incinerator presently out of repair and closed to the centre for heating purpose and electricity production[2] by co-generation, by burning non usable wood building structures, cuttings of urban shrubs and trees, and agricultural wastes, also by using natural gas.

The offer for heating and electricity is devoted to a commercial centre and to 3 000 households ; it is being completed by equipments and devices allowing conservation and energetic efficiency.

A project of urban ecology, *"Greenspace"*, will open 40 jobs for preserving landscapes and gardens, also for managing rationally the water resources. One recognize one of the principles of industrial ecology : the proper use in chain of one technology and one product.

The centre also tempts to enlarge its surface in order to attract more industrial or commercial enterprises or craft industries, to conceive common eco-equipments and to allow them to exchange their wastes. An asphalt production plant and a roofing construction enterprise on the spot, completed by another enterprise able to re-use the porcelain used by the latter one as substitute for sand, are programmed for drawing tighter the eco-technological cycle.

[2] 20 mégawatts, 20 000 households and a reduction of greenhouse gas equivalent to the volume emitted by 40 000 cars. 200 jobs for implementation, then 20 stable employements.

Local fragmentation of companies, decentralized cooperation, crossed flows of information, mutualisation of infrastructures, interactivity between enterprises and local population, allow to the ***Green Institute*** not only to develop a partnership chain of sustainable local activities and building networks for new exchanges, but also to spread and out and enhancing the value of the local social capital – including this coming from the deprived populations., transfer of "green" social technologies; eco-building, urban strategies with energy saving, eco-efficient and social strategies.

If it is a good local actor, it is also an actor which transfer its acquired and tested know-how on the local ground towards Indian Industrial Confederation for developing a "green" business centre in Hyderabad city, India.

AND WHAT ABOUT THE MARKET ?

Market is not the only exclusive place for efficient economic exchange and monetary pricing cannot be the only criteria of choice for any economical decision.

The less polluting and the most economical activity is only this one which is not materially produced. All damages being repaired, the unemployed person is typically the person who has the minimum impact on the environment. This observation of evident meaning can be considered as a conceptual indicator of sustainable development, characterized by a "strong sustainability".

The result is that conciliation between ecology and economy is only feasible through question about prevailing of economic decision above economical criteria which are limited by short-term and individual calculation: market price, monetary cost, merchant salary, etc…

Application of sustainable development requires an optimal utilization of taken out resources and should lead to the end of economical antiphony which regulate the growth through labour, the labour in taking into account its direct or indirect contribution to growth (monetary or not, merchant or not) of material flows.

Working in accordance with the regulations – giving greater place to substituting for the project, the market for pollution rights, or internalization of social costs of the pollution – particularly in application of the “polluter-payer principle”, could admittedly have certain positive effects, but they are globally snares: they maintain an “end of pipe” approach of sustainability.

Inside a "functional economy", enhancing of true value, utilization value and productivity gains can be separated: productivity gains would be measurable through increasing the flow of given services with the same quantity of material and energy used. Proper utilization of the good, enhancement of its life duration, product modulation and adjustment, and re-use of basic components become then the key factors for economic growth, organizations’ economics, eco-sufficiency, and environmental quality of supplying.

Productivity of resources is privileged against labour productivity and – in the same way – jobs nature and tasks content must be modified.
Services industries and domestic services become preponderant: organization, coordination, prevention, control, design, products re-using, material recycling, repairing, maintenance, keeping up. And numerous jobs are relocated as well as socially and technically qualified in a novel form.
The enterprise would not trade any goods but services. It doesn’t favour internalization of environmental costs, but it prevents the environment impacts where they spring up, and decreases social as well individual as environmental costs.

It becomes a service user and value producer through its waste consumption. Then demand is not related to buying all equipments goods and products characterized by their short living duration, but on purchasing utilization rights for any equipment goods and consumable goods, and on others properties: quality, environmental security, functionality, evolutional ability and adaptation but also through its design.

Information, *knowledge put into closed cycles,* whose pricing would only be one of its components, and organization, strategic partnership in research and development and

decentralizes cooperation are keys factors for social and ecological efficiency of development. Industrial ecology and solidarity economics take into account this renewal.

Industrial ecology and solidarity economy give up the vision consisting in only considering the creation of new activities with the aim of alleviating and repairing environmental damages caused by an economic system whose functional logic would stay steady. On the contrary, it is for them matter of reversing the common trend, of starting from the idea that activities related to sustainability are a product and a mean for implementing besides the current market some novel social and environmental practices.

The organizational approach of the industrial ecology must be accompanied by the individual objective of eco-efficiency, as mean and tool for stimulating the companies in integrating, with a voluntary manner, inside their organization and management, cooperative procedures, and creating between them eco-industrial links which would allow exchange of material, energy, wastes and information, plus the dematerialization of the economical activity considered as a collection of their expressions and function.

That implies decentralization of the following operations: maintenance, following up and repairing, and then leads progressively from production as main occupation towards a local management of information and services, and a major change: from producer towards goods user, consumer and waste producer and therefore resources supplier.

The structural and organizational approach peculiar to the industrial ecology is not a voluntary approach and more "conventional" of the solidarity economy. Information is the main capital of solidarity economy and it allows both valorisation and voluntary synergy of diverse energies and strengths: civil, local, and/or with the help of networks, based on a non-merchant common ends and purposes.

The industrial ecology and the solidarity economics both establish their scientific, ethical and practical grounds, resorting to common principles of reciprocity, proximity (either physical or virtual), local initiative, confidence, social responsibility. For one of these, interrelationship is

systemic and integrated, and, for the others, voluntary and global. They can lead to rebalancing the two predominant poles of the economic rationality: planning and market, to give more importance to informational energy, and the enhancement of locale civil energies: human engineering and the local environmental patrimony.

In allowing an optimal management of resources (the systemic dematerialization) in requiring cooperation and in developing informational synergies, the industrial ecology and the solidarity economics give prevalence on social engineering against technological machinery, and labour is being quantitatively and qualitatively reconsidered as value, mean and social product of the sustainability.

LOCAL SUSTAINABILITY AND TERRITORIAL PLANNING ?

The territorial organization of the administrative government is one of the critical points for implementation the sustainable local development. For this purpose, The State will have to furnish the civil basis for a decisional kind of partnership, and to proceed from a governmental administration of territory and areas without citizenships, towards local projects in partnerships, and to territories of projects. Future of sustainability is within the hands of local actors.

With globalization of the economy, the State which loses the monopoly of its territorial centralization, in aid of local and trans-national novel actors, as well as the utilization of certain tools for economical interventions, could serve for inciting local and sustainable strategies of development and for coordinating these. But this task appears difficult for the reason that looking for maintaining the monopoly for elaborating and managing the general interest, may lead towards limitation of development strategies to the only monetary flows, to organize the territories administratively, and to allow all the other levels of the public representation to confuse consultation, dialogue, cooperation and partnership.

Concerning the implication of values and representations of any society, actions in favour of sustainability of community development should take into account and welcome the civil population when elaborating locally projects and when implementing their local applications; they should not be restricted to the territories in terms of rights neither to the only monetary flows. An interactive approach of power supposes a matter of interaction therefore of place for discussion. Play is running: one adheres to the project or one doesn't join; one keeps it as an isolated matter, independently from any another project in the future; one changes it marginally.

Remain for every one a consolation prize: here some subsides or public endowments, there associative and individual energies without true limits because referring to a wish which is based on continuity within engagement and innovative ability.

France expressed its voluntary will of considering public policy on territories with transfer to local competences – which necessitate integrated and global strategies – towards the novel territorial communities created by *Chevènement and Voynet'* laws

The law referred to the former ministry Voynet and dealing with regional development and sustainable development of territories distinguishes nine sectors of collective services (transportation, health, culture, sport, energy, information, rural and natural spaces, high education and research). There purposes are to form a blueprint law for actions that have to be conducted by local communities and territorial actors from now until 2020.

But France was above all inclined to favour regulation frames with the law on air and rational utilization of energy (December 1996), planning for urban transportation, the Voynet laws dealing with intercity cooperation (July 1999) and the law related to solidarity and urban reshaping (December 2000).

The transfer towards more appropriate territorial scales of local competences – which requires overall strategies – was not really accompanied of participation and partnership with civil actors within the new local authorities. Local decision-makers of these authorities can do what they will and towns or villages concerned as members can also hand their local responsibilities over.

Novel territories whose competences concern proximity and daily strategic managements, as well as the areas devoted to regional natural parks – having vast objectives but very limited powers –

have been launched without any preparation and preliminary construction of citizenship at the appropriate scale. Likewise, although the nine sectors of collective services are concerned with dialogue among the regional authorities, there is no matter of any consultation close to local civil "partners".
The regulation documents were added to each others, supposedly for correcting former defaults and introducing civil participation and flexibility. But they in fact acted more arbitrarily and introduced more ambiguousness without gaining in global coherence.

The division on the same administrative territory, the "*commune"* area, of the management transportation ways between novel territorial communities, "*département*" and "*commune*", of cutting the synchronization between "*communal*" monopoly on land ownership and town planning, and the territorial policies about transportation, disorganize the territories, neutralize synergy between local population and prevent the whole local actors to elaborate a Sustainable project of local development. The novel territorial structures having enlarged competences, - called simplification and reinforcement of "*intercommunity*" -, doesn't not invite the civil actors to let emerging their project, mostly because they are located inside areas without any citizenship.

Thus the new territorial frames consider jointly the topics like space occupation, economic development, wastes, draining and purification, transportation, and offer a structure more coherent suitable for intervention , also a more pertinent scale for cooperating with the "*Région*", to environmental associations and to civil initiatives for sustainable local development.

But furthermore, some conditions stay to be fulfilled: encouraging a novel *"intercommunity"*, structuring the civil actors into network at this scale, considering them as fully partners; therefore these laws are dividing the territories in a legally way; they doesn't recognize it unlike the experiences of Leader I, II, etc European programmes for supporting sustainable local development.

The introduction of federative and horizontal decision-making process, through shared local project, common objectives, and coordinated means, appears inescapable for reaching a thrifty management of resources, for giving proper solution to social demand, fir raising and for making

the territories one of the components of eco-performance at the enterprise level and not only a simple change of scale, a single withdrawal into oneself, an adaptation to globalization or even less its alternative.

The new territorial activities and the novel tasks of sustainable development, emerging through transposition of tasks achieved within the associative network, require first of all, for the most important among them, new projects instances: adequate structure – local and based on partnership – with decision-making power, animations and conception; also structures endowed with its own budget, and not a n^{th} consultation council, a n^{th} expert committee, a n^{th} dialogue meeting, or n^{th} election level (community councils).

The organization of public policies upon territories, partnership realizations and job creation by the former "*Groupe d'Action Locale*", Local Action Group, in Büech Durance, in south-eastern France, founded by European programmes Leader I and II, and the conflict due to the Voynet's law between project territories and territorial projects, allow to precise geographical concept of local concerning the sustainable development.

As a matter of fact, Leader project, in order to be funded, should had to correspond to initiatives raised directly from local actors in micro-territories and not to complete others procedures already running at the "*région*" or "*département*" level.

This experience helped to distinguish two opposed logics: on the one hand, the Voynet's law about "*Pays*", corresponding to a more French tradition - more administrative and "political" in nature -, and on the other hand, the European Commission approach. The Leader approach consists in local development project conducted by actors on a certain territories leaded to following principle: one project for one territory and conceived the future of this territory through its project.

The experience located in Büech-Durance, in the *Hautes-Alpes "département*", is one of the rare among all the others in the same programmes to have been first established on human resources,

in number (13 jobs) as in skills, for creating a so-called “project territory among territories in difficulties”.

The jobs were not conceived as an end itself. The question about their future and their content was before all subordinated to the future itself of the dynamics which was supposed and justified it. But question about this future was also tightly interweaved with the nature of theses jobs lacking an official name, an appropriate status being suitable with their real tasks and with the institutional recognition.
Taking a territory having no real experience of working and neither reflection at this scale, the innovative and courageous choice was to count on implementing a true territory based network in matter of development engineering, a plan devoted to services for the benefits of the “*vivid strengths*” in this territory, and in the same way, to let emerging a common dynamics and to stop the desertion spiral, through giving concrete expression to a plan of voluntary actions, and by certain aspects, innovative actions.

This experience leads inevitably to a reflection on the idea of engineering concerning the rural local development, on the tasks of “intermittent” agent dealing with development, and more widely, on local jobs of sustainable development which are searching themselves for an identity and whose emergency acts and questions about it.

Emergency of a profession which could be essential for implementing the sustainable development, the engineering on local development in rural areas is in progress. Without depending of on achieved theories, it invests through a local endogenous cause of social usefulness in nature and offers pilot approach for producing locally social link, increasing on the whole the local resources, protecting natural means and demographic balances, rebuilt in territory of projects the identity of populations which suffered from former impacts of non-sustainable development.

The “*Groupe d’Action Locale*”, Local Action Group, in Büech-Durance was in charge of implementing a Leader II “Community Initiative Program”, a frame-convention signed by

territorial communities, the European Union and the State; it took place between 1996 and 2001, and it met together a set of public structures and consular chambers.

But in Buëch-Durance area, LEADER II let the memory of a temporary procedure, "consummated" as any another one…

Starting from a mobilizing space, the Leader territory was progressively built, revealed … then asserted as an emerging territory of project, as beginnings of the territorial project underlying by the 1999 Voynet's law.
All hopes were then allowed until intrusion - a little bit hurried and too early of this law, officially called for sustainable development, into the dynamics – laborious and frail – generated by the Leader approach, announcing a logic of "*Pays*" built from a project.
After this intrusion, time came back for elected representatives of re-concentrating on their own clique (intercommunity or /or political coterie), in defiance of the work recently initiated by Leader II.

From the time on, it was potently obvious that Leader II Büech-Durance territory was only a result of (one more) marriage of convenience, punctual and opportunist, mermaids of "*Pays*", soon attacked by nascent and faltering project which nevertheless had inspiration… in proposing to go off the beaten track, in endearing to a (almost) homogenous and in progress territory (which - for once! - incited to forget both administrative divisions and partisan cleavages), in reaching a platform of political agreement – issued from the largest dialogue, in attempting experiencing and innovation in betting on pilot tests, in being a project laboratory for the future, in allowing the risk and possibility to be wrong, in showing ways for hope and renewal.

The future of sustainability is – never than before – in local actors' hands. From there comes a great interest for initiatives like Leader, able of acting really for serving local willing of development, working in helping and support instead of substitution and assistantship.
Certain territories had the feeling and some were able of exploiting the Leader procedure, utilizing it advisedly, optimizing their means, while others acted more opportunely in hoping an

opportunity effect, in making it a punctual tool being in the service of a particular structure or a personal path.

The reality is that Leader II, from the spirit and philosophy viewpoint, is more asserted as a financial requirement and a methodology for the communities, than a “providential manna”, an appropriation of the future by locally concerned actors and impose to possess abilities of reflection, anticipation and projection, to show a visionary aptitude (role of elective representatives) … beyond the temporality of usual mandates.
For that purpose, a bit of know-how and above all how to be fairly among people, can be sufficient for suggesting desire of taking thinks in hands (public funds must go to the taxpayers), stopping sorry about but working and assume one’s choice, being responsible … not being subjected to !

Putting sustainable development and State’s priority necessitates to pay a redoubled attention to – not only to the inhabitants, but also towards jobs onto which we count for rely on for implementation on the ground. Professional qualifications do exist. But indeed both the frame and the job’s “ durabily” are lacking. Here is a paradox common in so many vertical functions and organizations.

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