



## LIVRET DE RESUMES / BOOK OF ABSTRACTS

Thursday October 7, 2010

### 10. Opening Round Table - *European Cities Entrepreneurship Ranking*

#### **Enterprise Development and Territorial Sustainability**

- Olivier TORRES (President of the ECER Foundation Association): *What are the approaches and the stakes when we talk about Entrepreneurship in metropolises?*
- Nadine LEVRATTO (President of the Scientific Committee ECER, Professor at Euromed Management): *The methodology of a European ranking – What is the place of Marseilles' Metropolis within ECER ranking?*
- Bernard BELLETANTE (Euromed Management Managing Director): *How to promote Entrepreneurship on a territory opened on Europe and the Mediterranean area?*
- Loïc MAHERAULT (Altidiem Consultancy Chairman and Managing Director): *Describing how the ECER approach is in line with the global dynamic of the sustainable territories.*
- PROVENCE PROMOTION, CCIMP, CLUB TOP 20, UPE 13 (the Economic Actors of the territory): *How the economic development and the attractiveness of the metropolises are driven by the companies?*

La recherche d'une efficacité accrue des politiques publiques, notamment de l'emploi, à travers des opérations combinant acteurs publics et opérateurs privés à l'échelon régional est devenue l'un des axes structurants des politiques publiques. Elle s'illustre par des tentatives destinées à améliorer la gouvernance et à adopter une approche plus stratégique du développement durable sur le plan économique, social et écologique, débouchant sur une conception de la ville que l'OCDE qualifie d'entrepreneuriale. Il s'agit d'un territoire dynamique qui s'efforce de mobiliser les ressources sur le plan social, politique et économique à l'intérieur d'un cadre institutionnel cohérent, au service d'une stratégie clairement définie de développement économique et social – et de mobiliser un appui durable en faveur de cette stratégie. Ce cadre d'action résulte de l'ouverture et d'une certaine homogénéisation de l'espace induits par le processus de mondialisation. La globalisation s'insère en effet dans une valorisation emboîtée des différentes échelles géographiques dans laquelle la proximité garde encore toute sa valeur. Mondialisation et territoires seraient ainsi des phénomènes antagoniques consubstantiels, que la première ait besoin des seconds pour les transgresser ou pour augmenter la différenciation que le marché réclame, conduisant alors à la mise en compétition des territoires. Le renouveau de la conception des territoires dans la mondialisation qui en résulte serait donc le fruit d'une contrainte et d'une stratégie politique des villes. A l'origine de ces transformations on trouve le constat dressé par de nombreux maires urbains à propos de l'incapacité de l'État à résoudre le problème du chômage. Les difficultés de maintenir une politique d'aménagement du territoire dans un contexte de crise et d'ouverture des marchés parallèle à la mise en place des contrats de plan a renforcé un mouvement de compétition entre les autorités locales pour attirer les investissements publics financés par l'État. Les grands centres urbains et les métropoles d'équilibre régional ont tiré parti et profité du fait que lorsque le pouvoir de l'État sur les entreprises est remis en



cause, les villes dépendent des entreprises pour la création d'emploi et la richesse. Le partenariat entre villes et entreprises est ainsi devenu la forme privilégiée d'arrangement entre autorités locales et représentants des entreprises, ou plus directement avec certaines entreprises, pour la définition de stratégies locales plus ou moins formalisées. Dans un univers où information et communication sont de plus étroitement mêlés, l'objectivation des écarts et la mesure des performances touche également la sphère publique et l'espace. C'est dans le but de montrer comment l'action locale se focalise de plus en plus sur les entreprises et de s'interroger sur la nature des dispositifs mobilisés et d'évoquer la question de l'évaluation de leur efficacité qu'est organisée cette table-ronde d'ouverture autour du Classement européen des villes entrepreneuriales.

### 13.30 Inaugural Conference – Plenary Session

- **Carlota PEREZ (Univ. Cambridge, UK and Tallinn, Estonia), *Making the most of the new paradigm: Shaping the opportunity space for innovation after the crisis***

This presentation will argue that the recent financial crisis was not an ordinary one but that it was endogenously generated by the way technological revolutions are assimilated. On the basis of recurring historical patterns, it will see the major bubble collapse as signalling the need for a structural shift with the return of an active State. It will hold that market competition and finance have installed a vast technological potential in the global economy that can only yield maximum growth and social welfare if enabled by adequate institutional innovation. The Welfare State and the Keynesian policies that unleashed the Post-War Golden Age were adequate for the mass production revolution and the transformation of the workers in middle income consumers in the countries of "The West". The ICT revolution presents a greater challenge: an institutional framework capable of unleashing a sustainable global golden age. It implies reviving the economies of the advanced countries with the expected high levels of employment and welfare while enabling the emerging and developing countries to catch up and also move towards full employment and greater well being. It will be suggested that the combination of universal access to ICT, green innovation and full globalization can conform a positive-sum game between business and society and between advanced and developing countries. But this requires much institutional innovation and combining Keynes with Schumpeter.



## 14. 30 Parallel Sessions

### S1 - Theories and politics for a new paradigm

- **Benoît DESMARCHELIER (Univ. Lille1, France) and Faïz GALLOUJ (Univ. Lille 1, France), *Endogenous growth and environmental policy in an evolutionary perspective: is the tertiarisation trend invertible?***

Le point de départ de cet article est l'idée formulée par Gadrey (2008, 2010) selon laquelle la problématique environnementale et son traitement par une politique d'écotaxe pourrait entraîner un processus de décroissance et de dé-tertiarisation des économies développées. L'objet de cet article est de tester ces hypothèses par un modèle de simulation évolutionniste. Pour réaliser cet objectif, nous nous appuyons sur un modèle de croissance et de changement structurel endogène, dans lequel nous intégrons une dimension environnementale. Les résultats de nos simulations indiquent qu'un changement structurel intervient bien au sein des secteurs de services, mais sans pour autant modifier la répartition des emplois entre services et industrie. Par ailleurs, nous montrons que la stagnation écologiquement souhaitable de la productivité du travail des biens de capital est compatible avec un trend de croissance de l'économie largement positif. En effet, le développement des services aux entreprises intensifs en connaissances semble capable de contrebalancer en partie la stagnation de la productivité des biens d'équipements. Nous concluons en soulignant la nécessité de l'éco-innovation dans les activités de services et en mettant en doute l'efficacité à long terme d'une écotaxe dans la lutte contre la pollution.

- **Nathalie LAZARIC (Univ. Nice Sophia Antipolis, France) and Vanessa OLTRA (Univ. Bordeaux, France), *Sustainable consumption in an Evolutionary framework: How to foster change?***

As all economic activity aims at satisfying the needs of consumers, consumers' behaviour has an essential role to play in any transition towards a more sustainable economy. Some authors argue that to approach a sustainable state, consumers will have to reduce their level of consumption and modify the kind of goods they consume (Arrow et al., 2004; Wagner, 2006). Even if a consensus is emerging on the idea that a change in patterns of consumption is necessary, it remains unclear how this change can be induced and what are more precisely the types of changes that are needed. Evolution of tastes, preferences and consumption are ones of the most thorny matters, researchers and practitioners have to solve for explaining current consumption with its future trends (Unruh 2000; Dolfsma 2002; Earl and Potts 2004). Whereas "mainstream" frameworks seem well equipped to provide "efficient" answers to these issues, evolutionary theories by providing a distinctive and non unified answer, may lack consistency and robustness regarding policy recommendations (Maréchal and Lazaric, 2010; Nelson and Consoli, 2010). But even if the demand side has been neglected by evolutionary economists, evolutionary research on bounded rationality, microeconomic behaviours, as well as the role of routines and learning mechanisms can provide a relevant framework to understand consumers' behaviours and demand dynamics (Metcalf, 2001; Witt, 2001). The purpose of this communication is to show that an evolutionary approach to consumption can bring new insights on the issue of sustainable consumption, and more particularly, on the factors of change and inertia in patterns of consumption. By explaining the presence of potential habits and routines



in daily consumption, such an evolutionary approach can shed light on dispositions, motivations and permanent gap between intention and acts in daily consumption behaviours. Additionally by putting emphasis on learning and social interactions, these perspectives make clear how changes of our daily consumption *via* imitation and the diffusion of social norms may occur.

- **Dimitri UZUNIDIS (Univ. Littoral, France) and Lamia YACOUB (Univ. Monastir, Tunisia), *Global governance, resources and sustainable economic development. A critical approach of the international economy***

The object of this contribution is not to wonder about the pertinence of sustainable development, which in fact has been demonstrated, but rather to disclose the causes that make this objective so far to achieve and to emphasize the imperatives to approach it. In this perspective, we demonstrate that the current global governance system is at a crisis of legitimacy, because its inefficiency is incontestable face to a utopian objective of sustainable development of the global economy. By analysing the causes of this inefficiency, we bring to light the true imperatives of such a development. On the one hand, we emphasize those relevant to policies of technologies control in the perspective of saving environment, since these are a powerful public lever of the eco-innovation promotion and diffusion. On the other hand, we extract the imperatives that aim at achieving a collective and concentrated management of resources and a more equitable redistribution of revenues at the global scale. However, since the national technological policies and the global governance are pretty fitted, only the conjugated effect of their respective actions would allow revolutionizing the economic thoughts and relationships to draw a global economy respectful of the environment and definitely turned towards sustainable development.

- **Patrick MICHELETTI (Euromed Management, France), *Contradiction et créativité : une alliance de raison***

L'individu bute en permanence sur la contradiction majeure résultant de sa volonté de réalisation d'un point de vue social avec les conditions émises par son entourage direct ou indirect. Ne peut-on le voir aussi comme une source de créativité ? La réponse offre par le rituel et les symboles sociaux, les outils adéquats pour surmonter la contradiction par la coopération et l'implication des différents protagonistes sur la base d'une communauté de destins qui peut trouver une solution sur la créativité. Loin d'être un simple abus de langage, il y a sans doute, au contraire, une judicieuse désignation par la langue ordinaire d'un déplacement de la contradiction dans la culture sociale sur une base anthropologique avec des effets positifs. Il y aurait comme une infiltration dévoratrice des contraires eux-mêmes désaffectés dans leur domaine spécifique. Dans cet ordre d'idée on peut penser à une alternance constructive. Lorsque le système traditionnel est constitué de rites et d'interdits consensuels et forts dans le social, il opère une certaine 'violence institutionnelle' sur chacun, mais lorsqu'il baisse, il fait place à la montée d'un 'désordre anémique'. Or, et l'enjeu est de taille, il faut voir l'une sans cesser de voir l'autre et les renvoyer dos à dos pour s'engager dans l'alternative véritable. Cette complexité n'est pas seulement optique, ni logique, elle demande une sortie du manichéisme idéologique. L'effort demandé, plus que simplement cognitif et intellectuel, est sans doute lié à une transformation profonde des personnes et des mentalités ; difficile et coûteux, il semble commander une sorte de conversion, dont il dépend peut-être. Pourtant, cette



mutation n'est pas un luxe, elle est devenue vitale. L'homme aujourd'hui a le choix : y consentir ou céder à la violence sous toutes ses formes dont les moyens et les effets seront de plus en plus puissants et ravageurs.

## **S2- Practices and actors of eco-innovation In France**

- **Florin PAUN (ONERA), *How to use Aerospace technologies to address sustainable development issues ; partners testimonial and innovation paths within Onera's knowledge based SMEs cluster***
- **Philippe GORRY (Réseau CURIE), *Practices and actors of eco-innovation in France***
- **Alain QUEVREUX (ANRT), *L'Ecole de l'Innovation et les CIFRE***
- **Jean-Yves LONGERE (Pole Pegase), *Le Contrat de Croissance***
- **Témoignages de Start-ups / Nheolis et Leosphere**

The scope of this workshop is to present how the technology envisaged for a high tech sector could be transferred to other sectors with strong impacts on the sustainable development issues. Onera, The French Aerospace Lab (*Office National d'Etudes et Recherches Aérospatiales*, National Office for Aerospace Studies and Research) has its main mission in developing the science and the technology for the use of the Aerospace industry. Its research results, in strategic partnership with the main industrial groups are currently reducing the fuel consumption, the noise and the pollution level and push towards a greener aviation. The Onera's presentation will showcase some of the Research Programs with direct and strong impact on this topic. Further, the Onera's presentation will mainly focus on the feedback regarding the strategy implemented for the development of an economically "healthy" relationship between ONERA and the SMEs. The technology transfer process between a public laboratory and a company has been the subject of many publications and has been widely discussed in Economic Theories. Here we will deal with the specificities related to this process in France and, in particular, in the field of technology transfer arising from the field of aerospace and defense. These specificities are in particular related to the characteristics of SME and public research laboratories. Like any healthy partnership relationship, the relationship between ONERA and a SME must be a winning relationship for both parties. Both partners must have strong positions each one in its role so that their collaboration generates significant added value. Based on this considerations, ONERA made the choice to adapt its best aerospace technological solutions, possibly breakthrough technologies, and use the innovative SMEs like technology demonstration vectors (by implementing their product development, industrialization and marketing capabilities in order to reinforce their competitive advantage on their markets) outside the aerospace market. The workshop will continue with the presentation of 3 successful projects with applications related to the sustainable development made by 3 SMEs Partners of the Onera's Knowledge Based Cluster. Leosphere will present its Wind Lidar, Nheolis its innovative small power wind mill and Isitek its welfare domestic surveillance system all sourced from the Onera's technologies previously designed for aerospace applications.



### **S3- Territorial trajectories and management of natural resources**

- **Irene SOTIROPOULOU (Univ. Crete, Greece): *How environmental awareness can be practical and funny while puzzling economists : exchange networks, parallel currencies and free bazaars In Greece***

This is a working paper belonging to a greater ongoing field research project concerning economic activity in Greece performed without the use of any official currency. The schemes studied range from parallel currencies to free bazaars and from specialised exchange networks to businesses accepting used public transport tickets as partial payment by customers. Exchange and bazaars often take place via fairs and parties, some of which have already become famous and attract hundreds of people, although most of the schemes are quite recent and still develop. The scope of this paper is, therefore: a) To present the theoretical, connected to environment, issues, that the project aims to deal with, and b) To present the findings of the first, qualitative, stage of field research that might enlighten us on how the environment as an idea and motive leads people to invent new ways of transacting.

- **Anna KANSHEVA (Univ. Padua, Italy), *Pioneering designs of sustainable rural entrepreneurship: meeting the challenges of countries in transition by exploring innovative experience of modern Europe***

Growing examples of successful European sustainability-driven entrepreneurship, transforming, environmental and social challenges in rural areas into innovative profitable opportunities, represent unique chance for countries in transition to benefit from an advantage of turning their lagging rural territories from depressive to sustainably progressive. In this context, the paper proposes a conceptual framework for investigating the possibilities of transferring successful EU experience to the NIS countries. A research approach based on the combination of different methods has been identified. The paper discusses possibilities and drawbacks of the proposed methodology at the light of the three most important research outcomes: 1) the analysis of the conformity of the NIS rural development paradigm with the EU one in terms of transferring entrepreneurship models. 2) the creation of an inventory of modern designs of rural sustainability entrepreneurship in EU. 3) the identification of guiding rules and models of successful sustainability-driven enterprise creation and operation in rural areas of NIS.

- **Alex VAILATI (Univ. Torino, Italy), Carla INGUAGGIATO (Univ. Turin, Italy), Cecilia NAVARRA (Univ. Turin, Italy – Univ. KwaZulu – Natal, Durban, Rep of South Africa), *Grassroot development, innovation and rural producers' organizations: a Mozambican case study.***

This paper focuses on the possible role of rural producers' organizations (also identifiable as agrarian cooperatives) as factors of innovation in those contexts characterized by subsistence level agricultural production, by means of a case study on the cooperative associations that compose UDCM (*União Distrital dos Camponeses de Morrumbala*), in the district of Morrumbala (Zambezia province, Mozambique). After the civil war, Morrumbala district has been the target of a rural cooperative promotion project, that, according to a nowadays evaluation, seems to show very poor results. In 2006, an Italian NGO started a new project to strengthen rural producers' organizations in



the same area. Following this new project, we have developed our field research in a clearly interdisciplinary perspective, joining together the economic and the anthropological analysis and using both qualitative and quantitative data. After a review of the possible effects of agrarian cooperatives in poverty reduction strategies and grassroot development processes, namely through innovation promotion, we focus on a peculiar innovation in the given context: the introduction of a mechanism of commercialization of maize through the association, financed by a rotating credit system managed by the UDCM. We first of all analyze the expected benefits from the introduction of the collective commercialization of maize: the main benefit produced appears to be a risk pooling one, mainly due to the loss sharing implication of the commercialization mechanism, thanks to the building of common granaries and storing systems. This mechanism, in the absence of other benefits in terms of prices, benefits exclusively to those poorer producers that don't have an individual granary. We then concentrate on the diffusion of innovation, that is the extent to which the credit mechanism has been successfully adopted, and its relationship with the association's political structure and leadership. Diffusion of innovations seems to be more effective where there is a wealthier leader that strongly differentiates himself from the membership; we indeed find out that there is a positive relation between the credit payback, the leader's welfare, and the "openness" of the association, that is the extent of its capacity to spread knowledge beyond its membership boundaries. At the same time, the main benefit obtained by the introduction of innovation -the provision of an income insurance mechanism- is appropriated by the weakest layers of society, that indicates a welfare distributive function of producers' association. Our data seem to show that cooperative is a medium useful to mediate between innovations introduction and the transformation of social context in which the members live. Indeed if the innovation costs are assumed by the leaders, the outcome benefit will be distributed among the members. In this way, cooperatives are brokers able to introduce peasants to an accumulation pattern without eliminating redistribution dynamics. The social change imposed by a market system that might introduce, by means of the surplus production, to a capitalistic development, is therefore mediated with the local social and cultural context.

- **George VALENTIS, Ludivine HOUSSIN (Institut Veolia Environnement), *La prospective à l'interface environnement/société : le cas de l'Institut Veolia***

In view of the global climate change, rapid urbanization, demographic growth, pressures on arable lands and multiple pollutions, the objective of a sustainable management of natural resources stands out as a priority on the global scale. It requires controlling the consumption while limiting the direct and indirect impacts that might affect those resources. It is therefore essential to analyse the interactions between environment and society so as to integrate and understand all the complexity of these issues and anticipate long term trends. This is the approach of the *Institut Veolia Environnement*, an original structure dedicated to environmental foresight. The Institute proposes independent scientific expertise on the major changes currently occurring at the interface between society and the environment. It acts as a platform for exchange in the field of sustainable development. The presentation will highlight the method and the tools developed by the Institute to contribute to knowledge sharing and public debate.



## 16.15 Parallel Sessions

### **S4- Theoretical origin of sustainable development**

- **Sophie BOUTILLIER (Univ. Littoral, France) and Patrick MATAGNE (Univ. Poitiers, France), *Economic theories, ecology and history***

The economic science was born officially in 1776 with A. Smith, ecology in 1985 with Eugen Warming who published *Oecology of Plants* (Linné, 1972 ; Marouby, 2004 ; Matagne, 2003, 2009). However, the economists have not been really interested in this subject until the 1960/1970's, when the evils of industrialisation and of innovation gained ground (Boutillier, 2009, 2003a, 2003b ; Daly, 2007 ; Georgescu Roegen, 1979, 1995 ; Girnevald, 1974 ; Matagne, 1992). History shows that pollution is not a new problem (Diamond, 2000, 2009 ; Grove, 1995 ; Le Roy Ladurie, 2007 ; Raumulin, 1984). From the first steps of humanity, the exploitation of physical resources has had negative consequences on environment. But in a society of scarcity, the main preoccupation was to produce, and labour became the main source of wealth. As soon as the consumer society appeared, at the beginning of the 20<sup>th</sup> century, production stopped being a problem. The utility value took the place of the labour value.

- **Pierre LE MASNE (Univ. Poitiers, France), *Quesnay and Turgot, precursors of sustainable development***

Les idées de Quesnay et Turgot concernant les rôles respectifs de la terre et du travail dans la production sont comparées avec celles de courants contemporains de l'économie écologique. Quesnay et Turgot se confrontent à des questions qui sont toujours posées aujourd'hui, et auxquelles les courants contemporains donnent des réponses très variées. Dans une première partie, les idées de Quesnay et Turgot concernant les rôles respectifs de la nature et du travail dans la production sont réexposées. Dans une seconde partie, nous montrons que Quesnay et Turgot sont des précurseurs du développement durable. Quesnay et Turgot considèrent l'économie comme un processus de régénération et anticipent sur l'écologie industrielle de S. Erkman. Quesnay suggère une approche globale des rapports entre les hommes et la nature, dans laquelle les sociétés humaines passent par différentes étapes. Des scientifiques modernes comme Steffen, Crutzen et McNeill, et leur concept d' « anthropocène » peuvent être resitués dans ce cadre de Quesnay.

- **Dimitri PATELIS (TUC, Greece), *Accumulation of capital, crisis and "return to nature"?***

Nature is involved in the production activity of humans, in relation to each level of development of productive forces and the correlation of the last to the dominant production relations. Under the production prism, the involvement of nature is divided into each necessary and able laborious, material and natural resources, the sufficiency and insufficiency of which does not constitute an absolute natural constant, but is constantly redefined in a contradictory process, via which the finite nature of the available resources is becoming relevant, in a spectrum of technological and social intermediary potentials, transferred between destructive impasses and creative outlets. The question of involvement of nature in production takes humanitarian and planetary dimensions in





capitalism, with the development of the industry and the conversion of science in direct productive force; hence nature is directly correlated to the conditions of capitalistic accumulation, and each combination of development both in depth and range of the capital (*extensive and intensive development*). As a result of the intensity of the quarrel in conditions of crisis (which occurs between the poles of labor and the capital at a global level, between the monopoly associations, between old and new imperialistic poles, between monopolized and non-monopolized capitals, etc) and the resulting changes of global current events, the capital has the tendency to resort to the following “solutions”, or a combination of these: 1. The relocation of production (spatial fix), of the enterprise, in countries and areas of the optimal combination of exploitation of labor, energy, natural resources, transfer, anti-pollution legislation elasticity, etc. 2. Technological reconstructing of production (technological fix). 3. Transport to more lucrative, less concentrated, etc. branches of production (product fix). 4. Exodus to the financial sphere (financial fix), through the sale of production units, and the turn to financial or other temporary investments. The combination of the above “solutions”, in the event that will result in qualitative and essential upgrade of intensive development of the material and personal conditions of the production, with the use of science and technological advancements (fact that redefines the terms and the boundaries of extensive development of the capitalism via newer, broader and deeper usage of natural resources and processes) may lead to temporary rescue-outlet from the crisis of capitalism, creating a new field of accumulation, more conducive for the safeguard of an ideological consensus-hegemony (e.g. in the form of “green development”).

- **Marc-Hubert DEPRET (UHP, France), Abdelillah HAMDOUN (Univ. Lille 1, France), *Clean technologies and perspectives of the “green economy” in emergent and developing countries: foundations, opportunities and constraints***

In the last few years, Green Growth is at the forefront of the political, economic and media global scene in developed countries. But Clean Technologies (CT) are also considered as a key field by the most advanced emerging countries. These countries see also in CT a nearly historical opportunity for redefining their development strategies on new economic, social and environmental bases. Moreover, there are serious barriers to such GG policies in emergent and developing countries. This paper aims at identifying and analysing the key issues related to such opportunities and barriers. It first examines the contours of GG. Second, it will identify the main public and private initiatives in emergent and developing countries devoted to the green sectors. We will sketch several generic “environmental innovation national models” in emerging and developing countries, and identify the key barriers to the emergence and diffusion of environmental innovations and activities in these countries.

#### **S5- Territorial trajectories and sustainable development**

- **Claudia IONESCU (Univ. Bucharest, Romania), *Sustainable development as result of the cohesion policy in the European union regions***

The main question of the paper is to find out whether the European cohesion policy creates sustainable development in the regions. The analysis of the different models gives the future trends



of sustainable development and examines in details a few instruments of the sustainable development and European Cohesion policy at global, EU and regional level. The research included a literature review of sustainable development, some interpretations of the SD and the EU instruments, the mechanism and the impact of some instruments on the sustainable development of the world. The sustainable development has its limitations imposed by resource's needs (tangible and intangible) which can be broken by innovation.

- **Denis CARRE (Univ. Nanterre, France), Nadine LEVRATTO (Univ. Nanterre, France), *Les effets locaux dans la dynamique des départements français : mesure et interprétations***

Considering that the differences in the observed growth rate in French departments, this paper aims at assessing the contribution of territorial specificities to the evolution of macro-departmental indicators by studying in depth the changes in employment, considered as an indicator of economic dynamic. Taking into account that the dynamic of an area results from the specific situation the zone compared to the strength of the agglomeration and dispersion effects and from endogenous dynamics of the area itself, the discrepancy between developing and declining departments may thus be explained referring to the respective weight of these two families of effects. However, it is a priori impossible to determine if the evolution proper of each territory results from particular productive structures which would print a local tendency different from the one observed at the national level or from specific local factors which would affect the different industries in an similar manner.

The first section presents the method Shift-Share we apply to distinguish the structural effect from the geographical component. We underline its limits and propose a way to extend its field of application through a framework of geographical interpretation of this component. The second section presents the application of this method to the French departments over the period 2000 - 2008 and illustrates their growth path. Resting upon a set of assumptions deriving from the literature, the third section defines some indicators that make sense at the department level. They are integrated in an econometric analysis supporting the relationships between these explicative variables and the growth rate whose results are presented in section 4 section.

- **Anne MUSSON (Univ. Pau, Univ. Bordeaux, France), *Firms local public strategy and sustainable development: can the sustainable development be a component of the attractiveness of territories? An analysis by a survey conducting with French CIOs***

Dans un contexte de crise économique mondiale, doublée d'une crise écologique, l'attractivité des territoires est plus que jamais d'actualité. En effet, conserver les entreprises sur le territoire et en attirer de nouvelles constitue la base du dynamisme territorial. Parallèlement, les collectivités locales comme les entreprises doivent composer avec les pressions citoyenne et scientifique qui invitent à prendre en compte, de plus en plus, le bien-être des individus et l'environnement. Ainsi, la collectivité locale, en investissant clairement dans une politique de développement durable, pourrait non seulement satisfaire les citoyens, mais également dynamiser les entreprises présentes sur le territoire, et en attirer de nouvelles. Afin de vérifier l'intérêt des entreprises pour une telle politique, et d'identifier leurs attentes en la matière, nous nous sommes entretenus avec 25 chefs d'entreprise. Nous en concluons que le développement durable apparait comme un facteur de plus en plus important d'attractivité des territoires, mais que la communication et les actions mises en place par



les collectivités locales doivent être, au préalable, bien ciblées et définies pour que la politique décidée mène aux résultats escomptés.

- **Benabbou SENOUCI (Univ. Oran, Algérie), Etude comparative sur les stratégies de 3 pays exportateurs de GNL**

Depuis les années soixante du siècle dernier, l'industrie gazière a affirmé son rôle majeur comme source énergétique à l'échelle mondiale, avec le déclin progressif des réserves de gaz naturel dans les pays OCDE, à partir des années 1990 le GNL semble devenir un vecteur essentiel de la promotion de cette industrie gazière dans le monde, et son avantage découle de la flexibilité qu'il procure et qui permet aux utilisateurs l'accès à des sources lointaines par des voies libres et diverses, sans risque géopolitique, ajouté à cela une demande croissante en énergie respectueuse de l'environnement, à noter aussi les progrès technologiques nombreux et essentiels qui ont élargi de façon spectaculaire les possibilités de transport de cette énergie. Sur le long terme, le gaz naturel liquéfié est l'une des sources d'énergie qui est appelée à croître le plus rapidement dans le monde, il représente une croissance de 200% depuis 2005. Sur le court terme immédiat, la chute du prix du gaz naturel sur le marché spot, a atteint des niveaux assez bas depuis le mois d'août 2009, cette faiblesse des prix du gaz naturel est due à la compression sur le marché international. La commercialisation sous forme de contrats à long terme, qui a été tant contestée s'avère aujourd'hui, avec la morosité du marché spot du gaz, d'un grand secours. Ce travail est une étude comparative entre trois pays exportateurs de GNL l'Algérie et le plus grand exportateur de GNL en l'occurrence le Qatar et le plus grand exportateurs de Gaz Naturel la Russie. L'essor du marché du gaz naturel, a conduit ces trois pays à investir fortement, (à des degrés différents), afin d'accroître leurs production, mais e revers des cours du gaz naturel pace ces pays devant de nouveaux défis, face à une réaction des marchés est disproportionnée, et que ça ne reflète pas l'effet des fondamentaux du marché. Au-delà du discours sur l'OPEP du gaz, dans les faits on a assisté à plus de concurrence et de compétitivité entre les trois pays que de coopération, pour le devenir de cette OPEP du gaz, l'Algérie jette la pierre au Qatar et la Russie en leur qualité de pus grands exportateurs de gaz naturel au monde, les stratégies des trois pays ne convergent pas pour le moment. Parmi les trois pays, l'Algérie est le seul pays qui combine les deux modes de transport le gazoduc et le GNL. Le volume des exportations de gaz de l'Algérie, se réalise sous forme de contrats à long terme, est estimé à 80% dont le prix est indexé sur les prix du pétrole et le fioul, lorsqu'il s'agit des contrats à long terme, l'Algérie a toujours défendu le principe de la clause « *take or pay* », même si en plein euphorie de la montée du prix du gaz, elle a mis en place une stratégie de commercialisation à la faveur des marchés spot. Cette forme de commercialisation qui a été tant contestée s'avère aujourd'hui, avec la morosité du marché spot du gaz, d'un grand secours.



Friday October 8, 2010

9h00 –Parallel Sessions

**S6- Theory and applications of political aspects of innovation**

- **Jerry COURVISANOS (Univ. Ballarat, Australia), *Political aspects of innovation in an ecologically unsustainable world***

A theoretical approach is developed to examine the problem of why it is difficult to shift away from the current ecologically unsustainable technological systems. The aim is to identify within capitalism the “political aspects” that enhance, but also undermine, the positive transformational power of innovation policies. As such, this paper follows the approach of Michał Kalecki that identified within capitalism the “political aspects” that enhanced and undermined the positive transformational power of Keynesian full employment policies. That analysis provided the basis for heterodox economists to analyse post-World War II economic policies from a political economy perspective. Using critical realism ontology, this paper provides a heterodox analysis of an economic policy framework that identifies what government and business support as “innovation policies”. From this emerges a critique to assist in developing public innovation policies to produce an effective innovation system with ecological sustainability. Three following papers are case study applications of this approach.

- **Pranoto EFFENDI (Univ. Ballarat, Australia), Jerry COURVISANOS (Univ. Ballarat, Australia), *Examining Renewable Energy in Australia from a Political Aspects of Innovation Perspective***

Despite possessing a very large potential of renewable energy sources, Australia has lagged behind other developed countries in embracing renewable energy. Various programs and policies have been devised and implemented by Australian governments. Nevertheless, the proportion of renewable energy in electricity generation in Australia has not increased significantly. This paper seeks to explain why Australia has difficulties in adopting renewable energy by using the Political Aspect of Innovation (PAI) framework developed by Courvisanos (2009) to examine the causes and barriers that have blocked the taking up of renewable energy. The PAI framework is concerned specifically with public innovation policy in Australia and the way it aims to encourage and support investment in new technology development. The paper finally outlines some future suggestions for charting the progression of the Australian energy system towards a transformative sustainable future.

- **Stefan KESTING (Univ. Technology, Auckland, New Zealand), Philippa K WELLS (Univ. Ballarat, Australia), Jerry COURVISANOS (Univ. Ballarat, Australia), *Political Aspects of Innovation in the New Zealand Dairy Industry***

This study demonstrates the usefulness of the Political Aspects of Innovation (PAI) approach in understanding the history and development of R&D and innovation in the New Zealand (NZ) dairy industry. As a result, the concept of *transformative innovation*, directed towards ecological



sustainability, is contrasted with economic growth-oriented type of *evasive innovation* that has been employed in the past with a consequent very large carbon footprint. Both innovation concepts plot two distinct trajectories of future economic development which are evaluated in the context of this significant export-oriented NZ industry. In its application of PAI analysis this paper sets out the forms of innovation that make up the NZ dairy industry followed by a section employing the PAI approach to understand the success of NZ dairy through innovation. Given this analysis, the paper explores the question as to whether dairy innovation in NZ is working in the appropriate direction for a sustainable future.

- **Philippa K WELLS (Univ. Ballarat, Australia), Jerry COURVISANOS (Univ. Ballarat, Australia), Stefan KESTING (Univ. Technology, Auckland, New Zealand), *Political Aspects of Innovation in the Australian Dairy Industry***

This paper explores the Australian dairy industry from the Political Aspects of Innovation (PAI) approach. It stresses the importance of innovation in the struggle for control over the distribution of profits over the period of the business cycle. The concepts of transformative innovation and evasive innovation are used in this approach to plot two distinct trajectories of the industry. Dairy as a case study is useful because at the theoretical level it exhibits all the characteristics of a traditional industry with many small businesses and ease of entry. However, dairy has changed considerably with the globalisation process going deep into creating very large multinational enterprises. Through a historical account of the industry, the full spectre of the dairy innovation system unfolds and is applied to PAI over the long period of expansion (1992-2007), and thus, examining implications for environmental problems that current evasive innovation is unable to address. The Political Aspects of Innovation (PAI) approach developed by Courvisanos (2009) stresses the importance of innovation in the struggle for control over the distribution of profits over the period of the business cycle. This study demonstrates the usefulness of this theoretical perspective in understanding the history and development of R&D and innovation in the New Zealand dairy industry. The concept of transformative innovation, directed towards ecological sustainability, is contrasted with the economic growth-oriented type of evasive innovation. Both concepts plot two distinct trajectories of future economic development which are evaluated in the context of this significant industry.

### **S7 - Socially responsible SMEs**

- **Leïla TEMRI, (Univ. Montpellier 1, France), *The environmental dimension in socially innovative enterprises projects***

Sustainable development, associated with collective “needs”, requires also new forms of organization. Social enterprises constitute an alternative response to these needs, even if they are not really new types of organizations. But they are considered as innovative, as they can provide new solutions. Traditionally, they are supposed to be involved in social problems. But the environmental ones are now taken in account in social economics. In the context of a growing interest to social innovation, in the civil society, the international organizations such as OECD, European Union, as well



as in the academic context, Alter'Incub, a social enterprises incubator has been implemented by the "UR SCOOP" in the Languedoc-Roussillon region, with the participation of many regional and national organizations and the assistance of the European Regional Development Fund. It aims at providing support to socially innovative enterprises from projects to creation. Environment is one of the five themes suggested by the incubator as references for the projects. In this paper, we want to analyse how the environmental dimension of sustainable development is taken in account in socially innovative enterprises projects. On the one hand, in some projects, environment is really the main orientation, and social innovation is added to this dimension. On the other hand, in other projects, the social dimension is predominant, and environmental one does not even appears. So the question is how are these two dimensions related in the projects? We want to elaborate a typology of the projects according to these two dimensions.

- **Aljona SANDGREN (Univ. Stockholm, Sweden), Görel Husen STRÖMQVIST (Univ. Stockholm, Sweden), *Green enterprising – a necessary component of environmental management studies***

Innovative ideas are not enough, they need to be brought to society. Entrepreneurs are the necessary link, bringing ideas to the market and society. Green enterprising is a relatively new, broad concept, denoting market driven solutions to environmental challenges. There is a need for rethinking our present practices and processes, integrating social science perspectives with science and technology for the benefit of our future environment. In this project we study the development of green entrepreneurship in three countries-Sweden, Russia and Latvia, in particular university or research-based green business ideas and bringing them to the market. Through literature reviews and interviews we attempt to identify the main drivers for green entrepreneurs and to understand the influence of historical, cultural and economic conditions in these different contexts. Results from our study, including theoretical reflections and entrepreneurs' narratives as illustrative examples of green enterprising, are to be integrated into environmental management study programs.

- **Chiraz GHOZZI – NÉKHILI (ISCAE, Manouba), Souad KAMOUN – CHOUK (ESC Tunis, Tunisie), *Vers une stratégie intégrale et intégrative des dimensions de RSE dans des entreprises tunisiennes labellisées BIO : cas des secteurs de l'huile d'olive.***

Considérer l'entreprise comme un simple agent économique est une vision largement remise en cause aujourd'hui dans les travaux de recherches scientifiques. L'entreprise est, désormais, non seulement questionnée sur ses résultats financiers mais aussi sur son équité sociale et son impact environnemental. Le concept de Responsabilité Sociale de l'Entreprise (RSE) repose sur l'ensemble des obligations qui pèsent sur elle dans sa gestion de ses relations avec ses différentes parties prenantes externes et internes. La Tunisie est classée première en Afrique en terme de surfaces certifiées en BIO. Ce secteur bénéficie d'une attention particulière de la part du gouvernement. Le cahier des charges régissant le secteur ne contient cependant, aucune incitation pour l'adoption d'une stratégie RSE intégrale du moins explicitement. La culture BIO semble être perçue par les institutions de l'Etat tunisien comme un nouveau créneau porteur et une quête d'avantage compétitif. La question de recherche à laquelle nous tentons de répondre est la suivante. \*Les opérateurs agricoles BIO tunisiens sont-ils socialement responsables même de façon non explicite ou



bien sont-ils simplement mus par le profit ?\* Pour répondre à cette question, nous avons mobilisé la typologie d'Acquier (2008). L'approche empirique s'est basée sur l'analyse documentaire d'études réalisées par l'API et l'APIA. Ce qui a permis de montrer le peu d'intérêt porté aux parties prenantes autres que le consommateur étranger. La stratégie RSE des opérateurs, si elle existe, serait de type /greenwashing./

- **Fafani GRIBAA (Univ. Montpellier 1 and Sousse), Azzedine TOUNÉS (ESC Chambéry, France), Karim MESSEGHEM (Univ. Montpellier 1, France), *An exploratory model of the environmental intention of Tunisian managers***

Most works on the environmental practices of company directors have been concerned with their behaviour. Within the field of social responsibility, very few researches have concentrated on the phases prior to these practices. Amongst these, we have considered environmental intention. Largely covered in psycho sociology, marketing and entrepreneurship, intention is a problem issue that is rarely studied in connection with companies' social responsibility. It is the best predictor of behaviour (Ajzen, 1991 ; 2002). The aim of this article has been to study the determinants of the environmental intention of company directors of Tunisian SME/SMIs. This is an important phase in the cognitive process when adopting environmental behaviour. It concerns the will of an individual conditioned by the socio-cultural, political and economic contexts as well as by personal characteristics. Our research question involves two complementary theories. The first is the theory of planned behaviour, (Ajzen, 1991 ; 2002), borrowed from psycho sociology; this predicts intention by three groups of variables: attitude in relation to behaviour, subjective norms and finally the perceptions of behavioural control. The second conceptual context is represented by the entrepreneurial theory of Kuhndt et al (2004); this analyses environmental intention through entrepreneurial orientation. We have retained pro-activity and a propensity for risk-taking from this latter. To construct an exploratory model of entrepreneurial intention, we used a deductive qualitative approach, with data obtained from twenty company directors from SME/SMIs in the textile-clothing sector in the Tunisian Sahel region. We processed the data with the software Sphinx. The results of our exploratory study let us to discard three determinants concerning intention to be found in the literature, and enabled us to identify two new determinants.

### **S8 – Ecopolis - Laboratory for sustainable cities**

- **Céline PATOILLARD (Univ. Lyon, France), Jean – Yves TOUSSAINT (univ. Lyon, France), Joëlle FOREST (univ. Lyon, France), *Du mode d'existence des environnements urbains alternatifs***

Depuis le rapport Brundtland (1987), nombre de rapports ont stigmatisé le caractère néfaste des impacts des activités anthropiques sur l'environnement, conduisant à faire du « développement durable » une préoccupation majeure de nos sociétés. Le projet de la ville durable, tel qu'il figure dans la nouvelle charte d'Athènes, s'inscrit pleinement dans cette direction. En effet, compte tenu de la massification de l'urbanisation qui va de pair avec l'industrialisation et la mondialisation de la société industrielle, la ville est depuis une vingtaine d'années le lieu principal où se pose la question des activités anthropiques et de leurs impacts environnementaux. En Europe, le défi de l'urbanisation contemporaine est l'objet de la charte d'Aalborg adoptée en 1994 lors de la



conférence européenne sur les villes durables. Concrètement il porte sur la constitution d'environnements urbains alternatifs. La fabrication et le fonctionnement de dispositifs techniques et spatiaux de l'urbain alternatifs semblent ne pas poser de problème « techniques » aux fabricants. Une offre en techniques alternatives (à faibles impacts environnementaux ou à bas coût) existe depuis une trentaine d'années : parmi les techniques alternatives les plus connues, on peut citer les techniques alternatives d'assainissement (noues, bassins de rétention, épuration par les plantes) et les techniques alternatives de production d'énergie (panneaux photovoltaïques, éoliennes, etc.). Ces techniques ont en commun de se développer en restant très proche de processus naturels (ainsi, les cycles de l'eau, les cycles solaires, effets des lois de la pesanteur, etc.) limitant les interventions techniques aux seuls usages de ces processus. Il s'agit donc d'agir à partir des techniques dites « douces ». C'est par exemple l'usage de l'infiltration et de l'évapotranspiration pour les eaux pluviales, ou encore du soleil et de l'ombre dans la gestion climatique des espaces publics urbains. Ces techniques permettent de promouvoir des environnements urbains techniquement et économiquement viables et pérennes. Curieusement pourtant, malgré leur efficacité environnementale et économique, la plupart de ces techniques peinent à se généraliser dans la ville et ces techniques restent hors d'usage. Pourquoi ces techniques, alors même qu'elles correspondent aux préceptes du développement durable (économie d'énergie, faible émission polluante, etc.), peinent-elles à se généraliser ? Quelles sont les modalités de leur existence et de leur « naturalisation » ? C'est précisément à cette question que nous tenterons de répondre à partir de l'étude des techniques urbaines de gestion de l'eau.

- **Muriel ALLAERT DEGUNST (Ecopolis), Sophie BOUTILLIER (Ecopolis, Univ. Littoral, France), Blandine LAPERCHE (Ecopolis, Univ. Littoral, France), Dimitri UZUNIDIS (Ecopolis, Univ. Littoral, France), *Crise et renouveau économique des milieux industriels – portuaires ou comment faire face aux routines accumulées : l'exemple de Dunkerque (France).***

In the current knowledge-based economy, the development of “innovative milieus” is at the centre of territorial redeployment policies. However, the emergence of these innovative milieus stems from the trajectory that the territory has followed for a long period of time. They result from an alchemy between the local communities, the training and research institutions and the enterprises which favours, according to the assets of the territory, the attractiveness and the emergence of new activities. In this paper, we study the trajectory followed by two towns characterized by a strong industrial specialization (heavy industry): Dunkerque (France) and Gdansk (Poland). How to explain the constant choice of industry as a redeployment policy in the case of Dunkerque, while Gdansk seems to develop new assets (new activities) that could result in the emergence of new growth paths? We answer this question by mobilizing the contributions of the evolutionist theory (used in industrial and geographical economics) and notably by indentifying the specific and complementary assets (material and immaterial) accumulated over the time. They give an interesting explanation of both path dependency and economic renewal.





- **Arnaud DIEMER (Univ. Clermont – Ferrand, France), *Industrial Ecology: back to the Myth of Innovation?***

Our paper will seek to present the arguments and clarify the scope of the messages conveyed by industrial ecology (Dannequin, Diemer, Vivien, 1999). Industrial ecology delivers a safety message: engineers can save the humanity, innovation can generate a “green trend” and create employment. Several industrial innovations are introduced : (1) a normative model which presents the industrial system like a biological ecosystem (Diemer, Labrune, 2007) ; (2) a material innovation associated to the concept of industrial metabolism ; (3) a technological process which can be measured by the eco-efficiency and (4) an organizational innovation symbolized by the symbiosis of Kalundborg.

- **Francis KERN (Univ. Strasbourg), Francis MUNIER (Univ Strasbourg), *L'écotourisme : une innovation de service aménitaire dans la valorisation des ressources spécifiques du territoire***

Cette communication a pour objet d'analyser l'engagement des acteurs dans le développement de l'écotourisme en Alsace et en particulier dans le cadre du parc naturel régional des Vosges du Nord. Nous fonderons notre analyse sur l'assertion que l'écotourisme concourt à la construction d'un bien commun : les aménités. Ce terme est de plus en plus fréquemment employé par les acteurs de l'environnement et du développement durable. Il a été introduit pour la première fois dans le champ juridique français en 1999, par la loi Voynet *d'orientation pour l'aménagement et le développement durable du territoire*. Cette innovation juridique codifiée, et par ce processus de reconnaissance, favorise désormais l'engagement et la coopération d'acteurs privés et publics qui permettent de mobiliser un capital social sur le territoire afin de valoriser son patrimoine naturel. Dans une seconde partie nous analyserons les modalités par lesquelles le bien commun se métamorphose en bien public. Cette transformation s'opère sous l'effet de l'engagement et de la coopération d'acteurs privés et publics. L'étude du parc naturel régional des Vosges du Nord est une illustration de cette coopération et permet d'identifier des écoentrepreneurs qui, en ayant bénéficié de l'expérience acquise par Alsace Nature, contribuent à la production du bien public. Enfin nous expliciterons comment l'écotourisme peut être perçu dès lors comme une innovation de service aménitaire qui valorise le patrimoine naturel du territoire. Ce dernier est appréhendé comme un terroir, c'est-à-dire un construit organisationnel d'acteurs qui valorisent le milieu naturel en tant que ressource pour faire du produit écotouristique un actif spécifique du territoire.



## 10h45 Parallel Sessions

### S 9- Corporate strategies and eco-technologies

- **Blandine LAPERCHÉ (Univ. Littoral, France), Gilliane LEFEBVRE (Univ. Nanterre, France) and Denis LANGLET (Research Network on Innovation), *Green business: what impacts on innovation and R&D strategies of industrial groups?***

In this paper, we study the impacts of the growing environmental awareness upon the strategy and the management of innovation and R&D in big industrial firms. Our aim is, in a context also characterized by the global economic crisis, to study the way how the environmental constraint (or opportunity) modifies (or not) the strategies of constitution/protection of the firms' "knowledge capital". Knowledge capital is here defined as the set of information and knowledge acquired, produced and systematized by the firm (most often within complex innovation networks) in order to be used in the production process. The chosen methodology is based on direct interviews of enterprises (Renault, PSA, Saint Gobain, General Electric MS, Thales, EADS, Lesieur, Faurecia, Lafarge, Legrand, ArcelorMittal, Limagrain, Hoechst) , on the analysis of secondary data (annual reports, interviews in economic and scientific reviews,...) and on academic publications (reports, articles,...).

In the first part, we present the theoretical framework of the study (analysis of the knowledge capital of the firm), a review of literature on innovation and R&D management in the context of crisis and environmental awareness and the methodology. The second part is dedicated to the presentation and the analysis of the main results. The paper concludes with a prospective scheme.

- **Hiroki YOKOTO (Univ. Paris 13, France), *The strategy of innovations for the corporate growth: in the case of Honda.***

The purpose of this paper is to understand the innovation strategy for the corporate growth in Japanese automobile firm « Honda Motors ». It is undoubted that Toyotism or Toyota model is often considered as Japanese representative firm model. In opposition to this hypothesis, our object is therefore to revisit it by studying the innovation strategy for the corporate growth in Japanese firms. From this perspective, we pay attention to the heterogeneity of Honda's innovation strategy to Toyota's one. As some researchers already studied, Toyota's growth is closely linked with a series of organizational innovations represented by « Toyota Production System » [ Coriat, 1991 ]. In comparison to the Toyota's strategy, this paper argues that the corporate growth of Honda must be based on a different strategy in flexibly combining three types of innovations : technology, organization and market strategy, while being originated in technological innovations.

- **Moon Jung KANG (TU Berlin and KIST Europe Institute), Ki Cheol KIM (KIST Europe Institute), Knut BLIND (TU Berlin), *A literature review on strategic carbon process management based on inter-firm cooperation: potential, limit and prospect***

Current debates on carbon issues lead to fundamental changes in political and economic frameworks that affect firm's way of business and efforts towards profitability. There has been much scholarly



work highlighting cooperative approaches such as partnerships, agreements, and collaborations as a strategic option for overcoming the carbon challenges for firms. Despite the rising attention, few studies have been devoted to a systematic examination of strategic aims and characteristics of the carbon mitigation in corporate processes through the inter-firm cooperation. This work introduces a concept of corporate carbon process management to the field of inter-firm cooperation from a strategic viewpoint. It explains which implication from a literature review can be drawn for exploring potentials of cooperative approaches to mitigate the carbon emissions in the operational process. For analyzing gaps of the existing studies and needs for future research, findings of the literature review are classified into four perspectives according to direction and geographic scale of cooperation. Current debates on carbon issues lead to fundamental changes in political and economic frameworks that affect firm's way of business and efforts towards profitability. There has been much scholarly work highlighting cooperative approaches such as partnerships, agreements, and collaborations as a strategic option for overcoming the carbon challenges for firms. Despite the rising attention, few studies have been devoted to a systematic examination of strategic aims and characteristics of the carbon mitigation in corporate processes through the inter-firm cooperation. This work introduces a concept of corporate carbon process management to the field of inter-firm cooperation from a strategic viewpoint. It explains which implication from a literature review can be drawn for exploring potentials and limits of cooperative approaches to mitigate the carbon emissions in the operational process of European industry. For analyzing gaps of the existing studies and needs for future research, findings of the literature review are classified into four perspectives according to direction and geographic scale of cooperation.

#### **S10 - Social responsibility: case studies**

- Céline MERLIN-BROGNIART (univ. Angers, France), *The integration of sustainable development in for-profit public service networks in France: a conventionalist and evolutionary perspective.*

Par leurs missions de service public et leurs activités, les services publics marchands en réseau sont directement concernés par la problématique du développement durable. Cette communication utilise le cadre théorique de l'économie des conventions et de la théorie évolutionniste contemporaine pour analyser l'évolution du processus de production et d'innovation de ces entreprises vers le développement durable. Il apparaît que ces activités développent des compromis permettant de rendre compatibles les différentes sphères du développement durable entre elles.

- Giusto BARISI (Univ. Littoral, France), *Les systèmes de travail soutenable, une composante souvent négligée mais fondamentale du développement durable*

Au niveau d'entreprise, un système de travail soutenable « *reproduit et développe toutes les ressources, les composantes qu'il utilise* ». Dans la dernière décennie, en France l'attention des Pouvoirs Publics, des médias, des dirigeants a été davantage focalisée sur politiques, réglementations, certifications visant à préserver l'environnement et à reconstituer les équilibres écologiques. Dans les grandes entreprises, les stratégies de préservation des ressources naturelles



ont évoluées et ont été intégrées dans les politiques d'entreprise à des niveaux différents (pas d'intégration, politiques polyfonctionnelles, intégration dans les politiques générales et RSE). Mais une composante fondamentale, la prévention des risques professionnels, a moins avancé que les autres. C'est seulement depuis 2009, avec la mise en exergue des dommages provoqués par la négligence des risques psychosociaux, qu'un large débat s'est développé au niveau national, dont les issues concrètes sont encore recherchées.

- **Béatriz CASTILLA RAMOS (Univ. Yucatan, Mexique), *FALCO Electronics dans l'état du Yucatan (Mexique): le cas d'une multinationale américaine socialement responsable***

La présente communication a par conséquent pour objectif d'analyser la politique environnementale de Falco laquelle se combine avec une politique « durable » de ses ressources humaines. Falco Electronics est a priori une entreprise socialement responsable (RSE). Mais, quelles sont les raisons qui l'ont conduit à adopter ce type de stratégie ? Est-ce pour des raisons utilitaristes stratégiques parce que l'entreprise vise des marchés dont les clients sont attentifs aux conditions de production des composants qu'ils achètent ? Est-ce pour des raisons de coût : économies de matières premières, récupération et recyclage de certaines matières premières, etc.) ? Est-ce par conviction idéaliste en faveur des problématiques environnementales contemporaines ? Adopte-elle une position instrumentale de la RSE (Jenson, 2002 ; Sundaram, Inkpen, 2004 ; Mitchell et al., 1997 ; Odgen, Watson 1999, McWilliams, Siegel, 2001) qui appréhendent la RSE comme un moyen stratégique pour la création de richesse ? La position que nous défendons est que l'évolution conduisant nombre d'entreprises multinationales à opter pour une politique socialement responsable s'inscrit dans le contexte actuel d'une économie modialisée où le rôle des états-nations tend à décliner. A l'image des entreprises paternalistes du 19<sup>ème</sup> siècle, elles s'opposent à l'ingérence de l'Etat dans leur fonctionnement et optent pour une définition propre de leurs règles de fonctionnement.

- **Abdelaziz SALEM (Univ. Oran, Algérie), Mohammed Amine Mehdi KHELLADI (Univ. Oran, Algérie) *Quel engagement environnemental pour les entreprises algériennes ? Cas des entreprises industrielles de la ville d'Oran***

En Algérie, le concept de développement durable n'a été institué qu'avec le Plan National d'Action pour l'Environnement et le Développement Durable (PNAE-DD, 2001). Suite à la parution de cette innovation institutionnelle, nombre d'organismes ont commencé à initier des projets écologiques en optant pour des niveaux d'engagements divers. Notre objectif est d'identifier les comportements écologiques de firmes industrielles dans les Zones d'Activités Economiques (ZAE) d'Oran, Ouest de l'Algérie à travers leur niveau d'engagement environnemental mesuré à partir de 03 dimensions : degré de pro-activité, niveau d'utilisation des éco-technologies et degré d'innovation technologique/organisationnelle. Notre approche sera qualitative et exploratoire puisque un questionnaire a été envoyé et des entretiens semi directifs seront projetés si besoin en est.

## 12. Lunch



## 14. Parallel Sessions

### **S11 – Methodological and financial tools for sustainable development**

- **Ingrid STJERNQUIST (Univ. Stockholm, Sweden), Peter SCHLYTER (Univ. Stockholm, Sweden), Lucas DAWSON (Univ. Stockholm, Sweden), *System analysis as a tool for analysing complex environmental issues.***

System analysis is the structured application of system thinking and often used to identify organisational structures and to create knowledge about the organisation of causalities (Haraldsson 2005). It is a way to understand complex problems and their feedback mechanisms through holistic thinking. Through the loop of question, model and learning the function of a system can be described. By using a mental model, called causal-loop diagrams (CLD's), the problem is taken apart and reorganised for a better understanding of the components and feedback relationships

Stake-holder based group modelling using CLD's helps not only in identifying and disentangling complexity but, equally important, allows different stake-holders and actors to arrive at jointly reviewed and agreed definitions of relationships and processes thereby providing a strong platform for consensus building and further analysis. Experiences (for ex., in Sweden) show that the drivers behind problems may be located quite some distance from perceived causes of problems and dysfunctionality. Used in this way stake-holder based CLD modelling becomes a both powerful and empowering analytic tool.

- **Paris PITTAKARAS (Univ. Manchester, UK), Rodger EDWARDS (Univ. Manchester, UK), *Weather data sets for simulation of the performance of zero energy buildings in Cyprus***

At present, the building stock within Cyprus is not very energy efficient. Buildings contribute significant amounts of energy and are therefore major contributors to overall CO<sub>2</sub> emissions at the present time. The high external temperatures and levels of solar irradiation experienced on the island mean that cooling loads make up a significant proportion of the overall energy consumption within buildings although the need for heating during the winter cannot be totally discounted. The objectives of this paper are to briefly describe the generation of Test Reference Years for two sites in Cyprus (Limassol and Nicosia) and to demonstrate the use of these data sets for simulating cooling and heating loads within a zero energy building-sustainable building. It is shown that the predicted performance of a specified building is significantly different at the two locations, thereby justifying the need for specifying more than one Test Reference Year for the island.

- **Yves JÉGOUREL (Univ. Bordeaux, France), Samuel MAVEYRAUD (Univ. Bordeaux, France), *New trends in European socially responsible investment: assessing the financial performance of « green » investment funds.***

Répondant à la demande d'épargnants sensibles aux enjeux du développement durable, les fonds dits « verts » constituent une évolution récente de la finance éthique. Différents des fonds ISR, les fonds verts ne cherchent cependant pas à investir nécessairement dans des entreprises qui adoptent des standards élevés en matière de gouvernance ou de politique sociale et environnementale. Ils



ciblent en revanche des secteurs d'activité dont les productions respectives contribuent directement ou indirectement au respect de l'environnement. Seront ainsi privilégiés les entreprises favorisant l'efficacité énergétique, celles œuvrant dans le domaine de l'approvisionnement, la production et de retraitement de l'eau, ou encore la gestion des déchets. Le choix d'un ou de plusieurs secteurs d'activité au périmètre restreint, mais dont le potentiel économique et financier semble assuré, altère-t-il ou non le couple rendement-risque des fonds verts ? En d'autres termes, l'émergence de tels fonds est-elle le fruit d'une véritable stratégie financière ou répond-t-elle à la simple mise en œuvre d'une stratégie marketing visant à proposer des produits financiers en phase avec les attentes des épargnants en matière de développement durable ? En dépit de l'attrait de la communauté scientifique pour la finance éthique, aucune étude ne semble pourtant avoir été menée jusqu'à présent, sur la performance des fonds verts, notamment dans le cas européen. Nous cherchons donc dans cet article à déterminer si la faible diversification sectorielle de ces fonds est facteur de sous-performance en nous intéressant au cas européen.

- **Kelly Tatiana GIRALDO PARDO (Univ. Fundacion Autonoma de Colombia), *Construction of a methodology to assess the sustainability of innovation investments***

Este trabajo pretende identificar a la luz de los modelos sistémicos y econométricos, cuales factores determinan la sustentabilidad de un proyecto de inversión en innovación en TICs en las Instituciones de Educación Superior, así como las relaciones que existen entre dichas variables. Para ello se adopta la Encuesta de Innovación Tecnológica en el Sector Servicios del DANE, y con base en los resultados, se construyen iterativamente dos modelos. Por un lado, un modelo de dinámica de sistemas, en tres escenarios (pesimista, intermedio, optimista), con el fin de discernir causalidades entre las distintas variables que podrían afectar los procesos de aprendizaje derivados de la introducción de la nueva tecnología a la institución y de la misma manera, el desempeño de dicha tecnología, lo que determina la rentabilidad misma del proyecto. Por otra parte, se plantea un modelo de regresión cuantílica, que permita observar la magnitud en que afectan las dotaciones de los diversos tipos de capital, a la inversión realizada en la innovación, para posteriormente, reconstruir el modelo de dinámica de sistemas. Se espera que los resultados arrojados por este modelo "iterativo" sean más robustos que aquellos formulados a partir de los resultados de cada uno de estos métodos por separado.

### **S12 - Management of natural resources in agro industry**

- **Jerry COURVISANOS (Univ. Ballarat, Australia), Colin RICHARDSON (Imperial College, London, England), *Towards a model of eco – sustainable agricultural production in a regulated river basin***

In the heart of Australia's food bowl is the Murray-Darling River Basin (MDRB) which is under great stress due to salination and drought. A path for resolution of the concerns of specific regional and corporate interests along the whole Murray-Darling river system has not been addressed. This paper focuses on agricultural production in a river basin and the ecosystem processes relating to climate change, water supply and carbon emission. The simulation model presented in this paper is for a generic river basin as the first step. In the paper, this regulated river basin model is integrated with an existing macroeconomic model. The aim is to provide a rigorous instrument for planning and



management of a regulated river basin system. What is anticipated from the study is an evidence-based decision system for saving the MDRB from collapse, then identifying policies for the system to generate sustainable farming and grazing.

- **José Vitor BOMTEMPO (UFRJ, Rio de Janeiro, Brasil), Flavia CHAVES ALVES (UFRJ, Rio de Janeiro, Brasil), *Innovation dynamics in biofuels: in search of a new industry***

This paper studies the biofuel industry as an innovation process. Our analysis is based on an original data compilation which supplies a characterization of the innovation and technology dynamics (economic, social, environmental, and policy aspects, nature of the innovation, knowledge basis, stage of development, funding and investors, firm strategies). Considering the biofuel emergence as an innovation process allows us to enlarge the current perspective of most of the studies, add some insights in the way we see the industry as a whole and offer a different vision of its future. This new industry, still in its infancy, conceals a number of interrelated alternatives in raw materials, conversion technologies, new products and new business models, and not only ethanol or biodiesel which are the biofuels currently produced and used. We can describe this process as the emergence of a new industry: the biomass based chemical and energy industry.

- **Adeline UGAGLIA (INRA GAIA, Gradignan, France), Bernard DEL'HOMME (INRA GAIA, France), Maryline FILIPPI (INRA GAIA, Gradignan, France), *Organic farming, a new techno-economic paradigm in agriculture?***

Organic farming is often described as a simple alternative to pesticide use and GMO cultures. But more than a new way to protect crops, it is mostly a new production and consumption model. The communication explores how organic farming fits within a new technological paradigm. First, at farm level, organic farming combines old and new agronomic environmental practices to replace full spreading. Then, at industry level, we highlight that it is seriously developing, illustrating our demonstration with the economic and technical consequences on farm trajectories from French FADN. However, it is clear that organic farming needs other requirements to become the dominant production model in agriculture. So we finally discuss organic farming as a rupture in the way to produce food, to conceive adapted public policies, to make research for technological innovation but also to consume or sell agricultural products.

- **Georgia OUZOUNIDOU (Institute of Food Technology, National Agricultural Research Foundation), Georgios I. ZERVAKIS (Agricultural University of Athens) and Fragiskos GAITIS (Food Industrial Research and Technological Development Company (ETAT S.A.), Athens), *Olive oil production vs sustainable agriculture. An economically feasible and environmentally friendly new approach for olive mill waste treatment***

The Mediterranean diet has been linked with greater longevity and lower cardiovascular disease rate, cancer, type II diabetes, and neurodegenerative diseases. Olive oil is obtained from the fruit olive (*Olea europaea L*) and despite the high complexity of Mediterranean diet's nutrients composition, it has emerged as its principal beneficial component due to both its high content of monounsaturated fatty acids and its high content of antioxidative substances. The composition of olive oil varies by cultivar, region, altitude, time of harvest, and extraction process. There are two basic olive oil



extraction technologies, the so-called "three-phase" and "two-phase" processes. The "three-phase" extraction process generates 20-25 kg of olive oil out of 100 kg of olives along with a liquid waste of 80-100 l (olive mill wastewater), creating a major environmental problem. The "two-phase" extraction process reduces the large quantities of water used in the "three phase" process but generates a sludge-like pomace of 80-100 kg out of 100 kg of olives, which is difficult to handle due to its physicochemical and biotoxic properties. Numerous physicochemical and biological methods have been used in the past for the treatment of both olive mill wastewater and two-phase olive mill waste, but these generally failed to come up with a viable solution of wide applicability. Our research team has adopted and developed a system for olive mill waste treatment, based on the co-composting of olive mill wastes (three-phase olive mill waste waters and/or two-phase olive mill sludge) with agricultural residues and by-products. This methodology has been developed at pilot-scale in our premises and was then tested successfully at commercial-scale in a new large composting unit that we constructed in northeastern Crete for handling the wastes produced by local olive mills. This unit has an annual capacity for producing ca. 1200 m<sup>3</sup> of compost (final product) per year. The process involves windrow composting with the use of a self-driven turner, and irrigation is ascertained through the recirculation of the compost leachates and the addition of olive mill waste water. Mature compost is ready after a period of 45-60 days followed by a short curing period which depends on the ingredients of the starting mixture. The final product was evaluated in large field-scale cultivation trials of horticultural crops, and resulted in excellent results since this compost supported very well plant growth/production (without presenting any phytotoxic effects) and exhibited suppressiveness against soil-borne plant pathogens. Furthermore, this process was officially approved by the local Administration (Prefecture of Lasithi, Crete) as an accepted environmentally-friendly methodology for the disposal of OMW; hence the olive mills which adopted this methodology for the treatment of their wastes were awarded with official operation permits.

- **Georgia OUZOUNIDOU (Institute of Food Technology, National Agricultural Research Foundation), Fragiskos GAITIS (Food Industrial Research and Technological Development Company (ETAT S.A.), Athens), *The use of nanotechnology in shelf life extension of green vegetables. Preliminary studies***

Nanotechnology has become the today's fashion word in new technological development. It describes many types of research in which the characteristic dimensions of the materials of interest are less than about a micron, or 1000 nanometers (nm). Nanotechnology, therefore, involves *nanoparticles* and *nanostructures*. Colloidal copper (nanocopper particles suspended in water) has been used since at least 1931, as fungicide in the growing of grapes and fruit trees and as an algacide in the treatment of water in swimming pools. Postharvest decaying of vegetables, is attributed to both oxidative reactions as well as microbial deterioration (mainly by fungi). There is limited research on the effect of nanoparticles on the shelf life of harvested green leafy vegetables. This study is exploring the effects of colloidal copper (nanocopper) postharvest application on raw parsley, stored at the market temperature of 20°C for 10 days and at the storage temperature of 4°C for 23 days, aiming at its shelf life extension. According to the results the spraying of freshly harvested parsley with nanocopper has a positive effect on both chemical and microbiological parameters examined, as compared to the control. As a conclusion, spraying of harvested parsley





with nanocopper seems like a promising shelf life extension technique, although attention should be given on the possible ecotoxicity of its widespread use.

#### 15.45 Conclusive Conference – Plenary Session - *With the US Embassy Paris*

- **Anne SENGÈS (Journalist), *The clean-tech revolution in California and in France***

California has been a leader in environmental protection since the 70s. But environmental consciousness is no longer a matter of political correctness. Green business is good business. Birthplace of the computer industry (and later the center of the dotcom universe), the land of Google and Apple has successfully reinvented itself as America's top incubator of clean tech. Green technologies are poised to be Silicon Valley's third great wave of innovation. What made the advent of the so-called "clean tech revolution" possible? How can clean technologies play a role in California and America's economic recoveries? Partnerships between venture capitalists, entrepreneurs, scientists and government and local leaders have become a key ingredient to the revolution's success. What can France, the land of the *Grenelle de l'environnement* and the king of nuclear power, learn from the clean tech revolution made in California? And what can California learn from France, a country that has started her own green revolution?